Intensification without degrees cross-linguistically

The landscape of gradability can be divided between two general types of analyses: those that posit degree arguments in gradable predicates (e.g. Cresswell, 1976; Kennedy & McNally, 2005); and those that posit degree-less, vague predicates (e.g. Kamp, 1975; Klein, 1980). Correspondingly, degree modifiers under these systems are assigned interpretations that make explicit reference to degrees or not. We challenge the (usually implicit) view that these two options are mutually exclusive for analyzing gradability in natural language by looking at intensifiers in two typologically diverse languages: Italian and Washo. We argue that in Italian, the suffix *-issimo* requires a non-degree analysis in contrast with *molto*, which behaves like a true degree modifier. Furthermore, there is a lack of evidence for reference to degrees at all in Washo, meaning that the intensifier *šemu* must receive a non-degree analysis.

Italian. The suffix *-issimo* 'extremely' and the adverb *molto* 'very' are two intensifiers in Italian that modify gradable adjectives (GAs). Both have been treated as degree modifiers in the literature (e.g. Rainer, 1983). As the (very rough) translations indicate, most speakers judge the effect of *-issimo* to be stronger than *molto*, placing the degree to which the property holds higher on the scale. However, while *molto* only modifies relative GAs, *-issimo* has a much wider distribution, combining with GAs of all scale types (1-2). Given that *molto* is sensitive to scale structure, and can only combine with relative GAs, it can be given the semantics of a degree modifier, parallel to English *very* (3).

(1) *La   casa è bell-issima   / molto bella.*
     the.F house is beautiful-issimo.F / very   beautiful.F.
     'The house is extremely/very beautiful.'

(2) *Il   serbatoio è pien-issimo   / ?? molto pieno.*
     the.M tank   is full-issimo.M /   very   full.M
     'The tank is extremely full / ?? very full.'

(3) $[\![molto]\!] = \lambda G_{d,et} \lambda x. \exists d[\textbf{standard}(d)(G)(\lambda y. [\![pos(G)(y)]\!]) \wedge G(d)(x)]$

Kennedy & McNally argue scale structure plays a crucial role in the distribution of degree modifiers; indeed, the distribution of *molto* is sensitive to scale structure. The distribution of *-issimo*, however, indicates that this modifier is not sensitive to scale structure, which constitutes our first piece of evidence that *-issimo* not does not make reference to degrees. Further evidence comes from the fact that *-issimo* can also modify many non-gradable adjectives, and is also semi-productive with nouns. In these cases, the free translation for *-issimo* as 'extremely' breaks down, though the effect of intensification remains.

(4) *Luca e   Maria sono fidanzat-issimi   / ?? molto fidanzati.*
     Luca and Maria are   engaged-issimo.PL /   very   engaged.PL
     'Luca and Maria are extremely engaged / ?? very engaged.'
     (possible readings: L and M love each other more or do more stuff together than engaged people normally would.)

(5) *E' arrivato il   president-issimo   / * molto presidente.*
     is arrived   the.M president-issimo.M /   very   president
     'The {great president / *very president} has arrived.'

While Morzycki (2009) argues that degree semantics can be found in the nominal domain, nouns like *president* crucially are not part of the class he identifies as gradable. Importantly, these predicates are ones for which there is no single criterion for ordering objects that have that property. For instance, a president may be eloquent, hard-working, old, etc., though none of these criteria is the defining one associated with the noun. For Morzycki, this is the hallmark of non-gradability, and indeed the use of *-issimo* in (5), as well as with the non-gradable adjective (4) show a certain amount of indeterminacy as to what scale is being targeted. We propose that the semantic contribution of *-issimo* is in identifying

a context where the individual represents an 'outstanding case' of the property, thereby unifying the 'extremely' reading with GAs with the variable readings with nouns. As a non-degree modifier, *-issimo* operates over $\langle e, t \rangle$ properties; for GAs, this means that the positive operator is applied before *-issimo*. The apparent effect of raising the standard of relative GAs comes from the fact that an 'outstanding case' of a GA would be one where we are setting higher standards for evaluating the predicate.

Washo. The modifier *šemu* in Washo is typically translated by consultants as 'very' or 'really', but, like *-issimo*, has a much wider distribution than degree modifiers of the familiar kind. Specifically, *šemu* can modify relative GAs, absolute maximum or minimum GAs. It is even more productive with nouns that *-issimo*, and can even modify numerals.

(6)　a. *delkaykayiʔ šemu*　　b. *miːpʼɨl šemu*　　c. *ʔilkʼunkʼuniʔ šemu*
　　　　tall　　SEMU　　　　full　　SEMU　　　　bent　　　　SEMU
　　　　'very tall'　　　　　　'really full'　　　　'really bent'

(7)　a. *dokto šemu*　　　b. *lelɨm šemu*　　(8)　*dubaldiʔ šemu*
　　　　doctor SEMU　　　　night SEMU　　　　five　　SEMU
　　　　'a real doctor'　　　'middle of the night'　'exactly five'

The effect of *šemu* is slightly weaker compared to *-issimo*, and when combined with nouns identifies a more prototypical instance of the noun. In addition to the argument based on its wide distribution, further evidence against a degree analysis for *šemu* comes from conjoined comparatives, the primary means of comparison in Washo. Based on the diagnostics of Kennedy (2007), these structures are implicit (as opposed to explicit) comparatives, which means there is no evidence for a comparative operator. Beck et al. (2009) propose that implicit comparative languages do not lexicalize degree arguments in GAs. If this is true for Washo, then *šemu* always operates on predicates of type $\langle e, t \rangle$, meaning that it must receive a non-degree analysis. We propose that *šemu* identifies a context in which the individual represents a 'clear case' of a property, corresponding with the slightly weaker effect and prototypicality readings compared to *-issimo*, and the even larger distribution.

Analysis. We propose for these cases that intensification by a modifier mod is the result of a function **f** that places stricter restrictions on the contexts in which a predicate P can be truthfully applied to an individual x. The semantics in (9) amounts to a Klein-style analysis in that mod operates over contexts of evaluation, rather than valuing a degree argument. *-issimo* and *šemu* share the semantics of mod and **f**, with the variation between them deriving from the nature of the relation **R** in (10). For *-issimo*, **R** is a 'much greater than' $\ll$ relation with respect to P, while for *šemu* it is simply a greater than $<$ relation.

(9)　$[\![\,\text{mod}\,]\!] = \lambda P \lambda x \lambda C. P(x) \text{ in } C \wedge \mathbf{f}_P(C)$

(10)　$[\![\,\mathbf{f}_P\,]\!] = \lambda C. \exists C'[C \subset C' \ \& \ \forall y, z \text{ if } P(y) \text{ in } C' \backslash C \ \& \ \neg P(y) \text{ in } C \ \& \ P(z) \text{ in } C, \text{ then } y\mathbf{R}z]$

The result is indeterminate with non-gradable predicates since there are multiple scales at issue in their definition, and so which scale **R** picks out is context-dependent. The indeterminacy reduces to intensification in the case of GAs since they only have one scale over which to operate.

Conclusion. We argue that scalar modification with and without degrees are both options in natural language. Additionally, the Italian and Washo facts support the use of distributional tests based on scale structure a la Kennedy & McNally (2005) to diagnose whether a degree or non-degree analysis of a modifier is at issue. Specifically, a constrained distribution dependent on scale structure indicates true degree modification, while a wider and cross-categorial distribution favours a non-degree analysis.

Selected references: Beck et al., 2009. Crosslinguistic variation in comparative constructions. In *Linguistic Variation Yearbook* 9 • Kamp, 1975. Two theories of adjectives. In *Formal Semantics of Natural Language* • Kennedy & McNally, 2005. Scale structure, degree modification and the semantics of gradable predicates *Language*81(2). • Klein, 1980. A semantics for positive and comparative adjectives. *L&P*4(1) • Morzycki, 2009. Degree modification of gradable nouns. *NALS*17(2)