

On the Semantics of P’urhepecha Degree Constructions

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Degree constructions are an area of grammar characterized by considerable crosslinguistic variation (Beck *et al.* 2009, a.o.). As part of the project of describing and understanding this variation, I propose a semantic analysis of a number of degree constructions in P’urhepecha, an indigenous language of Mexico spoken primarily in the central-western state of Michoacán. Although P’urhepecha is unlike Western European languages such as English in several respects—it is a genetically isolated agglutinating language with flexible constituent order—the degree constructions of the varieties I examine (henceforth just “P’urhepecha”) are very similar to those of English. In Beck *et al.*’s terms, P’urhepecha has the same parameter settings as English in the realm of degree constructions.

My point of departure is the analysis of degree semantics presented in Heim (2001). On this analysis, gradable predicates denote relations between degrees and individuals (they are of type $\langle d, et \rangle$), and degree morphemes such as *-er*, *less*, and *as* compare the maxima of sets of degrees obtained by abstracting over the degree arguments of gradable predicates. Hence *Katie is taller than Mike is* has roughly the LF in (1a), and *-er* has the denotation in (1b):

- (1) a. $[-er_{\langle dt, \langle dt, t \rangle \rangle} [\text{than Op}_1 \text{ Mike is } t_1 \text{ tall}]_{\langle d, t \rangle}]_2 [\text{Katie is } t_2 \text{ tall}]_{\langle d, t \rangle}$
b. $[[[-er]]] = \lambda P_{\langle d, t \rangle} . \lambda Q_{\langle d, t \rangle} . \max(Q) > \max(P)$

Three predictions of this account are tested in P’urhepecha:

- (2) a. There should be referential degree expressions.
b. There should be quantification over degree arguments.
c. Quantificational degree expressions should participate in scope ambiguities.

My fieldwork with native speakers reveals that all three predictions are correct for P’urhepecha, as discussed below. The most significant of these results is the confirmation of prediction (2c), which provides evidence in favor of Heim’s analysis of degree semantics and against a competing analysis—that of Kennedy (1997).

Referential degree expressions. The hypothesis that gradable predicates are of type $\langle d, et \rangle$ in P’urhepecha leads us to expect this language to allow sentences parallel to *Katie_e is [six feet]_d tall*. This expectation is borne out:

- (3) Maríkua sapichu **ma métru** iota-s-Ø-ti.
young.woman small one meter be.tall-PFV-PRS-IND+3
‘The girl is 1 meter tall.’ (Speaker 2)

Quantification over degree arguments. If gradable predicates are of type $\langle d, et \rangle$ in P’urhepecha, then, *ceteris paribus*, it should be possible in this language to quantify over the degree argument of a gradable predicate. If this is possible, we expect P’urhepecha to allow a variety of degree constructions that (on Heim’s analysis) crucially involve quantification over degrees, such as subcomparatives, equatives, degree questions, and “comparison with a degree” (Beck *et al.* 2009). All of these expectations are borne out. I illustrate with a subcomparative:

- (4) Maria sandarhu uina-ni k'uimu-si-Ø-ti eska Ana pire-Ø-Ø-kaa.
 Mary more strong-ADV whistle-PFV-PRS-IND+3 SUB Anna sing-PFV-PRS-SJV
 'Mary whistled louder than Anna sang.' (Speaker 1)

Scope ambiguities involving quantificational degree expressions. On Heim's analysis, a degree morpheme like *-er* (type <dt,<dt,t>>) combines with the standard of comparison (type <d,t>) to form a generalized degree quantifier such as [*-er than* Op₁ *Mike is t₁ tall*] (type <dt,t>). This phrase is generated in the degree argument slot of a gradable predicate (type <d,et>). The generalized quantifier cannot be interpreted in situ, owing to the type mismatch, and must therefore undergo Quantifier Raising for interpretability.

This consequence of the account leads to a strong prediction. If Heim's analysis is correct for P'urhepecha, then the putative generalized quantifiers analogous to [*-er than* Op₁ *Mike is t₁ tall*] should be interpretable either above or below other scope-bearing elements, resulting in scope ambiguities. In (5), for example, the putative phrase underlying the surface-discontinuous string *sandarhu...esika Maria* 'more than Mary' should be able to scope either above or below the intensional verb *uekasindi* 'wants'. I show, on the basis of the contexts in which (5) and similar sentences are felicitous, that this prediction is correct.

- (5) Ana ueka-sin-Ø-ti jirinanta-ni sandarhu kuanasi-cha-ni esika Maria.
 Anna want-HAB-PRS-IND+3 find-INF more frog-PL-ACC SUB Mary
 'Anna wants to find more frogs than Mary.' (Speaker 1)

This result provides evidence against analyses of degree semantics such as that of Kennedy (1997). On this analysis, comparatives are not quantificational, and are hence predicted *not* to participate in scope ambiguities.

Summarizing, the three predictions of Heim's (2001) analysis laid out in (2a-c) are borne out in P'urhepecha. This lends strong support to her analysis, not least because P'urhepecha is both historically unrelated to and typologically unlike the Western European languages that the analysis was based on. The finding that P'urhepecha degree expressions participate in scope ambiguities stands as an empirical challenge to analyses such as that of Kennedy (1997), on which such expressions are not quantificational. More generally, the findings situate P'urhepecha typologically as a language that makes full use of degrees as a basic semantic type as well as of abstraction over degrees. This is an interesting result, because if we are to learn about the nature and limits of semantic variation, we must take into account not only those cases where understudied languages diverge from familiar ones but also those in which they do not.

References

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