# Degree constructions and directed scale segments in Eastern Oromo

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This paper presents a formal semantic analysis of degree constructions in Eastern Oromo (Cushitic; Ethiopia). More specifically, I address three features of interest in Oromo degree constructions: the nature of the standard marker in comparatives, the difference in meaning between the two equative structures, and the contribution of inchoative morphology in various constructions. I use a directed scale segments analysis (Schwarzschild 2012, 2013) as its intersective manner of composing meaning can elegantly capture the features of Oromo degree constructions that differ from those of better-studied languages as well as, more generally, the cross-linguistic differences in degree constructions.

First, I consider the standard marker *irra* (c.f., English *than*) and what denotation it can be given. The language does not seem to have a comparative marker (c.f., English *-er/more*), but rather to use bare comparatives like Hindi and Japanese. (1-b) illustrates the comparative versus a regular positive statement (1-a). I hypothesize that the standard marker *irra* acts as a combination of English's *-er* and *than*, which in scale segment semantics, suggests it introduces both the directionality of the scale and the starting point (2). By this analysis, *irra* in (1-b) indicates that the scale of height that ends in Tamam is a rising scale and that it begins with the height of Kaz.

(1)    a.    Tamam dheer-aa dha
               Tamam tall-M    is
               'Tamam is tall.'

        b.    Tamam Kaz-irra   dheer-aa dha
               Tamam Kaz-IRRA tall-M    is
               'Tamam is taller than Kaz.'

(2)    $[\![irra]\!] = \lambda x.\lambda\sigma.\nearrow(\sigma) \ \& \ \text{START}(\sigma) = \mu_\sigma(x)$

The second feature of interest that I consider is the formation of the equative in Oromo. There are two different equatives, which seem to differ in terms of entailments (3). So a second question is how to capture the difference between the two constructions.

(3)    a.    Tamam akka  Kaz-itti  dheer-aa dha.
               Tamam AKKA Kaz-LOC tall-M    is
               'Tamam is as tall as Kaz.' (Kaz is tall)

        b.    Tamam hanga   Kaz dheer-at-a.
               Tamam HANGA Kaz tall-INCH-PRES
               'Tamam is as tall as Kaz.' (the height of Kaz is not established)

Evidence from a conjoined contradiction test suggests that the *akka* equative (3-a) is evaluative, entailing that the predicate holds, whereas the *hanga* equative (3-b) is not. I propose that the evaluativity can be captured with a POS operator in the same way that it has been in positive statements (Cresswell 1976, Kennedy 1997), and that the *akka* equative essentially consists of a positive statement being modified by an adjunct standard phrase (*akka Kazitti* in (3-a)). Under this analysis, the contribution of *akka* is that it introduces a second scale segment differing only in the end point (Kaz vs. Tamam in (3-a)) from that of the matrix.

The third feature of interest is the inchoative morphology that occurs in the *hanga* equative, and can also be present in degree questions (4-a), measure phrase statements (4-b), and differentials (4-c), but not positive statements and *akka* equatives. Questions that arise are what the denotation of the inchoative is contributing and how it interacts with standards and other expressions of comparison.

(4)    a.    Tamam hanga-m  dheer-at-a?
            Tamam HANGA-Q tall-INCH-PRES
            'How tall is Tamam?'

        b.    Tamam metera tokkofi qabtii saddeet dheer-at-a.
            Tamam metre  one     point eight    tall-INCH-PRES
            'Tamam is 1.8 metres tall.'

        c.    Tamam sentimetri sedii Kaz-irra   dheer-at-a
            Tamam centimetre three Kaz-IRRA tall-INCH-PRES
            'Tamam is three centimetres taller than Kaz.'

In degree questions, measure phrase constructions, and *hanga* equatives, there is no *irra* to indicate the rising directionality of the scale segment, so one possible contribution of the inchoative morpheme is that it introduces the rising nature of the scale. However, *irra* is present in differentials (4-c), suggesting that there may be another role. I propose that the additional role is to introduce differential modifiers. In all cases where inchoative morphology may occur, there is a differential modifier (1.8 metres (4-b), three centimetres (4-c)), or the word *hanga*, which in other contexts means 'extent', and which I propose here creates a differential modifier by mapping an individual to a measure.

(5)    $[\![\text{INCH}]\!] = \lambda d.\lambda\sigma. \nearrow (\sigma) \ \& \ \Delta(\sigma) \geq d$
        *A relation that holds between a degree and a scale iff the scale is rising and the difference between the start and end of the scale is greater than or equal to that degree.*

(6)    $[\![hanga]\!] = \lambda x.\lambda\Sigma.\lambda\sigma.\Sigma(\mu_\sigma(x))(\sigma)$

With the analysis and denotations sketched for the comparative marker, the two equatives, and the inchoative morphology, the truth values of all of the degree constructions presented can be derived. The paper contributes by providing the first formal analysis of degree constructions in Eastern Oromo, and also in providing new data on these constructions in a language in which they have not been documented in much depth.

### References
Cresswell, M. J. 1976. The semantics of degree. In Barbara H. Partee (ed.), *Montague Grammar*, 261-292. New York, NY: Academic Press.

Kennedy, C. 1997. *Projecting the adjective: The syntax and semantics of gradability and comparison* (Unpublished doctoral dissertation). UC Santa Cruz.

Schwarzschild, R. 2012. Directed scale segments. In Anca Chereches (ed.), *Proceedings of the 22nd Semantics and Linguistic Theory Conference*, 65-82.

Schwarzschild, R. 2013. Degrees and segments. In Todd Snider (ed.), *Proceedings of the 23rd Semantics and Linguistic Theory Conference*, 212-38.