Decomposing Color Expressions in Malayalam

Mythili Menon and Roumyana Pancheva; University of Southern California

We provide evidence for the ambiguity in color terms (e.g., *green*) between a gradable and non-gradable reading, as proposed in [5]. The evidence comes from color terms in Malayalam. Expressions for color exhibit different morphosyntactic behavior in attributive and predicative positions, and in comparatives, as opposed to other adjective-like expressions. The Malayalam data also provide evidence for the existence of an unpronounced noun color, as in [4].

Malayalam adjective-like expressions. Malayalam does not have a lexical category of adjectives [1], [6]. Adjective-like meanings for attributive modification and predication are expressed by structures built from roots denoting property concepts (PC) [6]. As argued by [3] PCs can be lexicalized as adjectives or nouns, both across and within languages (e.g., *intelligent, intelligence*), with further consequences for the grammatical structures in which they can appear. Nominal PCs denote abstract mass substances (e.g., *goodness, height, whiteness*) [2], [3]. We follow [6], in suggesting that all PC roots in Malayalam denote mass substances. The roots are then converted into a reduced relative clause (Class 1) or a nominal (Class 2) in the syntax, depending on the functional head they merge with. The functional head determines their subsequent grammatical properties. We go beyond [6] in showing that color terms have some properties in common with Class 1 and Class 2 expressions, for which we provide an account.

Types of PC expressions: Adjective-like expressions are built on the basis of two forms, ending in *-a* (Class 1) and *–am* (Class 2), [6]. Class 1 forms are relative clauses, *-a* being the independently attested relative verbal morpheme. Class 2 forms are nominals, *-am* being a nominal marker.

1) a. *Class 1 (relativized native roots)*   b. *Class 2 (nominalized borrowed roots)*
     valiya- big, ceriya- small, puthiya- new   santosham- happiness, sankatam- sadness

Color terms belong to Class 1, in that they all end in *-a*. Some roots (e.g., *wel* 'white') have two *-a*-ending forms, one morphologically simpler (Type 1), the other more complex (Type 2).

2) Examples of color terms (morphologically Class 1): Type 1 and Type 2
   a. √wel   weḷḷa   weḷḷutta   'white'
   b. √kar   -----   karutta   'black'
   c. √pac   pacca   -----   'green'

Grammatical properties of color terms vs. other PC expressions. Color terms behave the same as non-color Class 1 forms in attributive position (3). In predicative position, however, non-color Class 1 forms use the attributive form with the addition of a pronominal (4a), (analyzed as a free relative in [1] or light-headed relatives in [6]), the Type 2 color terms do as well (4c), but the Type 1 color terms do not (4b).

3) a. valiya ela 'big leaf'   b. weḷḷa ela 'white leaf'   c. weḷḷutta ela 'white leaf'

4) a. ela   valiya-tə   aaɳə   b. ela   weḷḷa   aaɳə   c. ela   weḷḷutta-tə   aaɳə
     leaf   big-N.Sg   EQ   leaf   white   EQ   leaf   white-N.Sg   EQ
     'The leaf is big.'   'The leaf is white.'   'The leaf is white.'

In comparatives, non-color Class 1 expressions and Type 2 color terms prohibit the appearance of the degree word *kuuṭuttal* 'more'. Type 1 color terms allow 'more', similarly to Class 2 forms.

5) anil ravi-e   kaaḷum { (*kuuṭuttal) valiya-van aaɳə / (kuuṭuttal) pokkam uɳṭə }
   Anil Ravi-ACC   than   more   big-M.SG   EQ   more   tallness EX

'Anil is bigger than Ravi (and both are big)' / 'Anil is taller than Ravi.'

6) ii ela aa elain-e kaaɭum { (*kuuṭuttal) weɭɭuttatə / (kuuṭuttal) weɭɭa } aaɳə
   this leaf that leaf-ACC than more white more white EQ
   'This leaf is whiter than that leaf.'

Analysis. We follow [6] in the analysis of non-color Class 1 forms. The PC root combines with a null *v* with possessive semantics, which also introduces a degree argument. For an individual to have a gradable property (e.g., *bigness*) is for that individual to have a certain amount of the property. The degree argument of the null *v_poss* is bound by a positive degree operator (POS). Thus, in comparatives *more* is prohibited (5), and the interpretation is norm-related. (Π is a meta-variable over PC-denoting expressions; μ is a measure function). The resulting verbal predicate of individuals is semantically but not syntactically fit to be used attributively. When relativized by *–a*, it functions syntactically as an attributive modifier to NPs (8).

7) a. $[\![\varnothing_{v\_poss}]\!] = \lambda \Pi \lambda d \lambda x \exists y$ [y is an instance of Π & x has y & $\mu(y) \geq d$]
   b. $[\![POS]\!] = \lambda g_{<d, <e,t>>} \lambda x \exists d [g(d)(x) \& d > d_s]$

8) a. $[[[\sqrt{big} \quad \varnothing_{v\_poss}]_v \quad POS] -a]_{rel}$ *valiya* 'big' (Class 1, non-color)
      Lit. 'having an instance of bigness measuring to a degree that exceeds the standard'
   b. $[\![valiya]\!] = \lambda x \exists d \exists y$ [y is an instance of bigness & x has y & $\mu(y) \geq d$ and $d > d_s$]

We depart from [6] in treating Class 2 forms as not incorporating a degree argument. We analyze Type 1 color terms in a similar way. Both color roots and Class 2 roots combine with a null *v* that does not have possessive semantics or a degree argument (9). Color terms are then relativized using *–a*, similar to other Class 1 forms, without a change to their semantics. Class 2 forms are further nominalized by *–am*, remaining as predicates of individuals.

9) $[\![\varnothing_v]\!] = \lambda \Pi \lambda x$ [x is an instance of Π]

10) a. $[[[\sqrt{white} \quad \varnothing_v]_v \quad -a]_{rel}$ *weɭɭa* 'white' (Class 1, color)
       Lit. 'being an instance of whiteness'
    b. $[\![weɭɭa]\!] = \lambda x.$ [x is an instance of whiteness]

11) a. $[[[\sqrt{tall} \quad \varnothing_v]_v \quad -am]_{NP}$ *pokkam* 'tallness' (Class 2)
       Lit. 'instance of tallness'
    b. $[\![pokkam]\!] = \lambda x.$ [x is an instance of tallness]

Type 2 color terms combine with the *v_poss* that derives non-color Class 1 forms, here spelled-out as *–utt*. The derivation and interpretation is analogous to that seen in (7).

Gradable and non-gradable color terms. Type 1 color terms are non-gradable, Type 2 color terms are gradable, providing evidence for the ambiguity posited in [5]. Only Type 1 color terms can be used as classificatory modifiers: e.g. *pacca weɭɭam* Lit. 'green water' 'fresh water', *cuvanna bhoomi* Lit 'red earth' 'brown sand', *weɭɭa wine* 'white wine' (in fact yellow in color).

Covert COLOR. We propose that Type 1 color terms are always attributive, as their *–a*-ending suggests. The absence of a pronominal in (4b) is due to the presence of an unpronounced COLOR, as in [4].

[1] Amritavalli, R & Jayaseelan, K.A. 2003. The genesis of syntactic categories and parametric variation. 4th GLOW-in-Asia [2] Chierchia, G & R. Turner. 1988. Semantics and Property Theory. *L&P* [3] Francez, I & A. Koontz-Garboden. 2014. Semantic variation and the grammar of property concepts. Ms. [4] Kayne, R. 2005. *Movement and Silence*. OUP [5] Kennedy, C & L. McNally. 2010. Color, Context, and Compositionality. *Synthese*. [6] Menon, M & R. Pancheva. 2014. The grammatical life of property concept roots. *SUB 18*.