Decomposing Color Expressions in Malayalam

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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., *vel ‘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  we[la]  wel[утта]  ‘white’
b. √kar ----  karutta  ‘black’
c. √pac  пacca ----  ‘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 pronounal (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).


4) a. elo valiya-то аанə b. elo wel[la] аанə  c. elo wel[утта-то аанə]

leaf big-N.Sg EQ  leaf white EQ  leaf white-N.Sg EQ

‘The leaf is big.’  ‘The leaf is white.’

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

5) anil ravi-e kaalum { (*kuututtal) valiya-ваn аанə / (kuututtal) pokkam мпə }

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 kaalum { (*kuuṭuttal) we[kḷuttat] / (kuuṭtal) we[l]a } aanə
   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_pos is bound by a positive degree operator (POS). Thus, in comparatives more is prohibited (5), and the interpretation is norm-related. (II) 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. $[[\varnothing_{v,\text{pos}}]] = \lambda \Pi \lambda d \lambda x \exists y [y \text{ is an instance of } \Pi \& x \text{ has } y \& \mu(y) \geq d]$
   b. $[[\text{POS}]] = \lambda g_{<d, e, d>} \lambda x \exists d [g(d)(x) \& d > d_{i}]$

8) a. $[[[\text{big} \ \rightarrow \ v_{\text{pos}} \text{POS} \rightarrow a]_{\text{rel}}} \ \text{valiya} \ ‘\text{big}’ \] \quad \text{(Class 1, non-color)}$
   Lit. ‘having an instance of bigness measuring to a degree that exceeds the standard’
   b. $[[\text{valiya}] = \lambda x \exists d \exists y [y \text{ is an instance of bigness } \& x \text{ has } y \& \mu(y) \geq d \& d > d_{i}]$

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) $[[\varnothing_{v}]] = \lambda \Pi \lambda x [x \text{ is an instance of } \Pi]$
10) a. $[[[\text{white} \ \rightarrow \ v_{\text{v}} \rightarrow a]_{\text{rel}}} \ \text{well[a} \ ‘\text{white}’ \] \quad \text{(Class 1, color)}$
   Lit. ‘being an instance of whiteness’
   b. $[[\text{well[a}]] = \lambda x. [x \text{ is an instance of whiteness}]$

11) a. $[[[\text{tall} \ \rightarrow \ v_{\text{v}} \rightarrow am]_{\text{np}}} \ \text{pokkam} \ ‘\text{tallness}’ \] \quad \text{(Class 2)}$
   Lit. ‘instance of tallness’
   b. $[[\text{pokkam}]] = \lambda x. [x \text{ is an instance of tallness}]$

Type 2 color terms combine with the v_pos 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 wellam Lit. ‘green water’ ‘fresh water’, cuvanna bhoomi Lit ‘red earth’ ‘brown sand’, well[a] 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].