Head-merge, adjunct-merge, and the syntax of root categorization

1. Problem. In Distributed Morphology (DM) roots are categorized by insertion as sister to a categorizing head such as $v$, $n$, or $a$ (Marantz 1997). This categorizing algorithm is claimed to hold of all languages, and involves merge of the root with the highest head of the lexical projection. Data from Algonquian languages (Blackfoot, Plains Cree) indicates that, contra a DM-style analysis, the syntax of root-categorization is not uniform. In particular, roots in the verbal domain (Grohmann 2003) partition into two classes. NEUTRAL ROOTS are neutral relative to category (verbal/nominal), valency (transitive/intransitive), event structure (eventive/stative), and argument type (animate/inanimate). SPECIFIED ROOTS are specified relative to these properties: they occur only in verbal contexts, are specified for transitivity and event structure, and select for argument type.

2. Proposal The contrast between Neutral and Specified Roots in Algonquian reflects a difference in whether roots merge as adjuncts or heads (Wiltschko 2008).

2.1 Head-merge yields Specified Roots, which are categorized via merge with a head: transitive verbs arise via head-merge with $v$ (1a); intransitive verbs via head-merge with V (1b). Such roots are specified with respect to category (occur only as verbs) and transitivity (occur only in transitive (1a) or intransitive (1b) contexts). Head-merged roots are predictably specified for event structure as the latter is determined by the head; accordingly, Specified Roots are inherently eventive or stative. In addition, Specified Roots predictably select for argument-type: a $v$-merged root selects for the argument in $[\text{Spec}, vP]$; a $V$-merged root selects for the VP-internal argument.

(1) a. $[vP \text{ ARG } [v [\sqrt{\text{ROOT}}]] \quad [vP \ [v \ldots ] \text{ ARG } ]$ head-merge with $v$
   b. $[vP \ [\sqrt{\text{ROOT}} \text{ ARG } ]$ head-merge with $V$

2.2 Adjunct-merge yields Neutral Roots, which adjoin to $vP$ (2a) or $VP$ (2b), and which are category-neutral (occur in verbal and nominal contexts) and transitivity-neutral (occur in transitive (2a) and intransitive (2b) contexts). Neutral Roots impose no restriction on argument type, are unspecified for event structure (compatible with eventive or stative construals), and are predicted to co-occur with Specified Roots, which head-merge.

(2) a. $[vP \ [\sqrt{\text{ROOT}}] \ [vP \text{ ARG } [v [\ldots ] \ [vP \ [\sqrt{\text{ROOT}} \text{ ARG } ] ]$ adjunct-merge with $vP$
   b. $[vP \ [\sqrt{\text{ROOT}} \text{ ARG } ]$ adjunct-merge with $VP$

3. Consequences. The analysis accounts for (macro-level and micro-level) properties of roots in Algonquian, and predicts that a head-/adjunct-merge contrast will be universally attested.

3.1 Macro-parametric properties across Algonquian. Algonquian roots partition into two classes according to whether they participate in adjunct- versus head-merge. In all Algonquian languages, a set of “initials” – a morpheme class at the left-edge of the verb stem (Bloomfield 1946, Goddard 1990) – are Neutral Roots derived by adjunct-merge. This is illustrated in (3) for Plains Cree ‘MYO ‘good’, which is neutral with respect to category, valency, event type, and argument type. Furthermore, adjunct-merged “initials” co-occur with head-merged “finals”, such as $=s$ and $=n$ in (3). The latter have the properties of Specified Roots, and encode category, valency, argument type, and event type (Bloomfield 1946; Denny 1985). Recent analyses (Brittain 2003, Hirose 2000, Mathieu 2008, Quinn 2006) treat these finals as $v$ or $V$; the present analysis treats them as bound roots that head-merge with $v$ or $V$. The head-/adjunct-merge distinction also has phonological consequences: adjunct-merged roots are phrasal clitics (Déchaine 1999) that attach to $vP$ or $VP$ (marked as “-”), while head-merged roots integrate into the prosodic word (marked as “-”).
Thus, all Algonquian languages have both head- and adjunct-merged roots, with structures as in (4). Adjunct-merged roots predictably stack (not shown), and predictably co-occur with head-merged roots.

(4) a. $[v_p \sqrt{\text{MIYO}} \, [v_p \sqrt{\text{SI}} \, [\text{pro}]]]$ b. $[v_p \sqrt{\text{MIYO}} \, [v_p \, [\text{pro} \, [v_p \, [\sqrt{\text{N}} \, [v_p \, [v_p \sqrt{\text{E}} \, [\text{pro}]]]]]]]]$

3.2 Micro-parametric properties within Algonquian. Both Plains Cree and Blackfoot roots are derived from head- and adjunct-merge, but the distribution of the root types differs in the two languages; such micro-parametric variation is predicted by the analysis. In Plains Cree all “initials” are Neutral Roots introduced via adjunct-merge, and all “finals” are Specified Roots introduced via head-merge. In Blackfoot, a subset of “initials” are introduced via head-merge and so are specified for argument structure and event type. This is illustrated in Error! Reference source not found. with $\sqrt{\text{MA}'T}$ ‘take, TRANS’, which is restricted to transitive contexts (5a) and cannot occur with a stative intransitive final (6). These head-merged initials co-occur with object-marking suffixes such as $-aki$, $-i$, or $-o$, (5a–c); the latter head-merge with V and impose restrictions on the referentiality and animacy of the object (Weber & Matthewson 2013).

(5) $[v_p \, [\sqrt{\text{MA}'T} \, [v_p \, [v \, -\text{OBJ} \, [\text{pro}]]]]] \; (=\text{AGR}) \; (=\text{SG})$

a. $[\text{ma'it}] \; -aki \; (=m) \; (=wa) \; \text{‘S/he took something.’}$
b. $[\text{ma'it}] \; -i \; (=m) \; (=wa) \; \text{‘S/he took it (inanimate).’}$
c. $[\text{ma'it}] \; -o \; (=m) \; (=wa) \; \text{‘S/he took him/her (animate).’}$

(6) *$[\text{ma'ts}]=ii=\text{wa}$

Intended: ‘It is taken.’

Unlike Plains Cree, Blackfoot “initials” sub-divide into two classes: Neutral Roots as in (4), and Specified Roots as in (5). This micro-parametric difference between Plains Cree and Blackfoot roots is not captured by previous analyses (Armoskaite 2011, Genee et al. 2012, Hirose 2000, Weber and Matthewson 2013).

3.3 Universality. The head/adjunct-merge contrast is predicted to be universal. This is confirmed for English which contrasts Neutral Roots such as $\sqrt{\text{CUT}}$ and $\sqrt{\text{WALK}}$ (the/to cut, the/to walk) with Specified Roots such as $\sqrt{\text{EAT, TRANS}}$ and $\sqrt{\text{ARRIVE, INTR}}$ (*the/to eat and *the/to arrive). Preliminary findings indicate that the head/adjunct-merge contrast is also attested in Afro-Asiatic, Austronesian, Na-Dene, Niger-Congo, Germanic, Romance, Salish, Siouan, and Wakashan.

References