Gender distribution and numeral variation

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I investigate significant patterns of Gen(der) distribution in numeral expressions found in Semitic language varieties. Three kinds of numerals, *number terms* in counting lists (= n-terms), *ordinals*, or *cardinals* are associated with three kinds of Gen behaviour: *n-Gen*, *o-Gen*, and *c-Gen*. The first two are shared by gendered numeral languages, including Slavic (e.g. Russian, Polish), the third appears to be typical of Semitic (Arabic, Hebrew), akin to the construct state CS complementary distribution.

1. Numerosity and its various senses and uses are reasonably 'molded' by known computational operations such as Merge and Agree, producing various classes or categories, and acquiring various numerous meanings (Kayne 2016, Chomsky 2008, Watanabe 2017). Taking into account various previous insights (Kayne 2005, Ruckowski 2002, Ionin & Matushansky 2006, Corver & Zwarts 2006, etc.), I assume that numerals have no pre-established 'lexical' category (be it *n, a, q, d,* or *v*). They are rather born in the computation as acategorial roots. Roots associate first with a general numerosity sense *n*, then are compositionally molded with various categories, positions, and inflections, to derive specific senses (e.g. single terms, cardinals, ordinals, etc; Zabbal 2005). For concreteness sake, our analysis is implemented in a root-category model (Borer 2005, Marantz 2006, Harley 2014).

2. Numeral Gen distribution

2.1. When used as n-terms in a counting list, simple Semitic numerals are formed by suffixing a Gen mark obligatorily (a 'feminine' affix –at, -a, or -i):

(1) a. Standard Arabic SA: ṯalaaṯ-at 'three', ʔarbaʕ-at 'four', xams-at 'five';
     b. Lebanese LA: tlat-i, arbaʕ-i, xams-i;
     c. Moroccan MA : sett-a, sabʕ-a;
     d.   Hebrew: šloš-a… xameš-a, etc.

Their bare counterparts are not suitable in such a use:

(2) a. SA: * ṯalaaṯ 'tree', ʔarbaʕ 'four', xams 'five',
     b. LA: * tlat, arbaʕ, xams …

The Gen marker of the nominal is thought of as a group classifier (Fassi Fehri 2016).

2.2. A clear case of adjectival Gen is the o-Gen. Affixed with the feminine, the ordinal e.g. ṯaaliṯ 'third' (in SA, LA, or MA) behaves in most respects like an adjective, having the form of an adjective participle, and agreeing in feminine with the counted noun:

(3)   MA: ṭaleb-a ṯaleṯ-a
         "a third female student"

(whether pre- or post-nominal, the ordinal must agree with the counted noun; Shlonsky 2004, Sichel 2012; Fassi Fehri 1999).

2.3. A third type, c-Gen, appears to be typical of Semitic. It is thought to exhibit the so-called Gen 'polarity' or 'reverse' agreement (Lecarme 2002). Suppose, however, that the distribution there is just a 'privative' complementary distribution akin to the CS (recall the absence of Definiteness on the possessee in CS; cf. references above as well as Borer 1999). This is clearly the case in LA (Cowan 1972) and MA, where Gen on the pre-nominal numeral is simply 'silent':

(4) LA   a. xams wlaad (banaat) "five boys/girls"
          b. wlaad (banaat) xams-i "five boys/girls"
(5)   MA. a. sett ayyam "six days"
          b. ayyam sett-a "six days"

The silence hypothesis of Gen can be extended to account for the Hebrew and SA patterns:

(6) a. Hebrew: šloš-a susim three horses (masc.) ;   šaloš parot "three cows (fem)
     b. SA: ṯalaaṯ-u fatay-aati-n "three girls";   ṯalaaṯ-at-u   ʔawlaad-in   "three boys".

Similar contrasts brought up by Halle (1994) for Hebrew do not make a case for a feminine agreement rule (subject to polarity, at the Vocabulary insertion stage, and strict ordering).

3. Numeral micro- and macro-variation. Our hypothesis that c-Gen is akin to CS makes a clear prediction. Only languages which can construct a CS can instantiate c-Gen. As it turns out, c-Gen is typical of Semitic, compared to Slavic (Russian, Polish) which instantiate n-Gen and o-Gen (in so-called nominal and adjectival numerals; Perelstaig 2015). However, silent Gen either ranges over all CS cases (LA and MA), or is limited to 'feminine' nouns (Hebrew and SA).

References
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