Composed duals: Not suppletion, but morphosemantics
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(1) Thanks to Oli Peatman who did much trawling and sifting as part of an MA practicum

(2) Some famous facts
Hopi composed dual: pronouns/demonstratives vs verbs
a. $pam$ \underline{wari}. \\
that.SG \underline{run}.NPL \\
‘(S)he ran.’
b. $Puma$ \underline{wari}. \\
that.NSG \underline{run}.NPL \\
‘They$_2$ ran.’
c. $Puma$ \underline{y`uutu}. \\
that.NSG \underline{run}.PL \\
‘They$_{\geq 3}$ ran.’

(3) Conclusion for number features

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<th>Feature</th>
<th>Singular</th>
<th>Dual</th>
<th>Plural</th>
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<td>+atomic</td>
<td>+minimal</td>
<td>−atomic</td>
<td>−minimal</td>
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(4) I’m-not-saying-all-of-that analysis
a. Number is fully specified on nouns, fully available to verbs—by adjacency or agree—but is incompletely reflected by exponence
b. that $\Leftrightarrow \begin{cases} \text{pam} & \text{in the context of +atomic} \\ \text{puma} & \text{in the context of −atomic} \end{cases}$
c. run $\Leftrightarrow \begin{cases} \text{wari} & \text{in the context of +minimal} \\ \text{y`uutu} & \text{in the context of −minimal} \end{cases}$

(5) Questions
a. Is it coincidence that verbs care about one feature, nouns about the other?

b. Is full specification compelling? (Cf., Béjar on Georgian-style agreement; and I’m blond vs I’m blonde.)
c. Is suppletion a crucial element of these facts?

(6) Longstanding typological perspective
a. “the use of different verb stems for singular and plural belongs [not to inflection but] rather to the classification of nouns and verbs according to the form of objects and actors” (Boas 1911)
b. “the concord relations established by number[-]suppletive verbs do not have the expected properties of verb agreement, but . . . are compatible with a selectional interpretation, in which a morphological Number category inherent to the verb is linked directly into the semantic representation of verbal argument structure.” (Durie 1986)

(7) Superficial response
a. Agreement is the exponence of features copied in the syntax via (your preferred theory’s equivalent of) Agree and its concomitants (unvalued features, search, . . . ).
b. Suppletion involves no such search, no copying, no valuing. It is just a version of contextual allomorphy.
c. Therefore, agreement and suppletion are distinct.

(8) Typologists’ gist
a. According to (7), agreement and suppletion are on a semantic par: the features pronounced as agreement and conditioning suppletion are asemantic. Their loci of interpretation lie elsewhere: in the arguments themselves. (Leaving aside argumental agreement.)
b. Durie: suppletion is “directly into the semantic representation”.

(9) Alternative view: Verbs and nouns contribute separate features and are morphologically compositional
a. Arrangement of sensitivities is precisely what the semantics of number features demands
b. Nonsuppletive cases in Hopi
c. Typologically consistent pattern of sensitivities

(10) Semantics of number
a. Dual = +minimal(atomic(N))
   (i) [N] = singletons, dyads, triads, . . .
   (ii) [−at(N)] = dyads, triads, . . .
   (iii) [+min(−at(N))] = dyads
b. Dual ≠ −atomic(+minimal(N))
(i) \( [N] = \text{singletons, dyads, triads, \ldots} \)
(ii) \( [+\min(N)] = \text{singletons} \)
(iii) \( [-\at(+\min(N))] = \text{nothing} \)

c. So, if number features are split between noun and verb, then a singular–dual–plural system can only result from \( \pm \text{atomic} \) being located in the nominal projection, \( \pm \text{minimal} \) in the verbal projection.

(11) Hopi: pronouns/demonstratives and nouns vs verbs

a. \( Mi? \overline{maana} paki. \)
\( \text{that.SG girl enter.NPL} \)
‘That girl entered.’

b. \( Mima \overline{maana-t} paki. \)
\( \text{that.NSG girl-NSG enter.NPL} \)
‘Those girls\(_2\) entered.’

c. \( Mima \overline{maman-t} \overline{ying'a}. \)
\( \text{that.NSG girl.RED-NSG enter.PL} \)
‘Those girls\(_{\geq 3}\) entered.’

(12) Hopi: pronouns/demonstratives vs verbs

a. \( Nu' \overline{hohonaq-0}. \)
\( \text{1sg play-NPL} \)
‘I play.’

b. \( 'Itam \overline{hohonaq-0}. \)
\( \text{1NSG play-NPL} \)
‘We\(_2\) play.’

c. \( 'Itam \overline{hohonaq-ya}. \)
\( \text{1NSG play-PL} \)
‘We\(_{\geq 3}\) play.’

(13) Hopi: suppletion and ellipsis

a. \( 'Uma yu'tu- k-q puu' \ldots \)
\( \text{2NSG run.PL-K-OBV then} \)
‘You\(_{\geq 3}\) run and then . . .’

b. \( 'itam tuwat yu'tu- k-ni. \)
\( \text{1NSG also run.PL-K-FUT} \)
‘we\(_{\geq 3}\) will run too.’
c. 'itam tuwat ya-ni.
   1NSG also PL-FUT
   'we≥3 will too.’

(14) Hopi: status of -ya?

a. can be agent-oriented

(i) Taataq- t taaavo- t niina- ya.
   man.RED-PL cottontail-ACC kill.NPL-PL
   ‘The men≥3 killed a cottontail.’

(ii) Taataq taatap- tu- y qöya.
    man cottontail.RED-PL-ACC kill.PL
    ‘The man killed cottontails≥3.’

(iii) Taataq- t taatap- tu- y qöqa.
    man.RED-PL cottontail.RED-PL-ACC kill.PL.RED
    ‘The men≥3 killed cottontails≥3.’

b. can permit multiple occurrences of plural marking

(i) 'Itam yu’tu- k- ya.
    1NSG run.PL-K-PL
    ‘We≥3 ran.’

(ii) *öki- ya
    arrive.PL-PL
    ‘arrive’

(15) Kawaiisu: intransitives (and objects of transitives?)

a. “Although there are no lexically dual verbs, a dual subject is ex-
expressed by using a morphologically plural subject noun phrases . . .
with a singular intransitive verb stem”.

b. Si’imi wini- di- mi.
   they stand.SG-NMR-PL
   ‘They≥2 are standing.’


a. Ike sō.
   2SG fall.NPL
   ‘You1 fall.’

b. Kimi- ōe sō.
   2NSG-DL fall.NPL
   ‘You2 fall.’
c. *Kimi* iw.
   2NSG fall.PL
   ‘You ≥3 fall.’

(17) Hiw: object pronouns SG–NSG; verbs NPL–PL
a. *not* mat OBJ-(e)
   hit.NPL dead.NPL 3SG
b. *Ne temët not mat i- se.*
   ART ghost hit.NPL dead.NPL OBJ-3NSG
   ‘The ghost killed them₂.’
c. *rëote qët se*
   hit.PL die.PL 3NSG

(18) Zuni: pronouns vs number prefix on verb
   1SG NPL-go-PST
   ‘I went.’
b. *Hon 0- ?ā-kya.*
   1NSG NPL-go-PST
   ‘We₁ went.’
c. *Hon ?āw-?ā-kya.*
   1NSG PL-go-PST
   ‘We ≥3 went.’

(19) Ranmo: agreement vs suppletion
a. *Tëu- lan- 0.*
   1SG-hit.NPL-2/3.SG
   ‘You/(s)he hit me.’
b. *Niën- lan- 0.*
   1NSG-hit.NPL-2/3.SG
   ‘You/(s)he hit us₂.’
c. *Ngg- w-fëk- 0.*
   1NSG-W-hit.PL-SG
   ‘You/(s)he hit us ≥3.’

(20) Ranmo: agreement vs partial suppletion
a. Ke t- a- \underline{faklam-} 0
   1SG MID-DETTR-SIT ON TOP.NPL-SG.
   ‘I sat on top.’

b. Ni t- a- \underline{faklam-} e.
   1NSG MID-DETTR-SIT ON TOP.NPL-1NSG
   ‘We sat on top.’

c. Ni k- w-a- \underline{faklak-} e.
   1NSG MID-W-DETTR-sit on top.PL-1NSG
   ‘We sat on top.’

(21) Marori: transitive subjects (person agreement vs phi-sensitive tense)

a. Ka Maria-na bosik eyew \underline{nda-} m.
   2SG Maria-for pig see AUX-2/3.NPL.PST
   ‘You\textsubscript{1} hunted a pig for Maria.’

b. Kie tamba Maria-na bosik eyew \underline{n-} nda- m.
   2NSG PF Maria-for pig see 2NSG-AUX-2/3.NPL.PST
   ‘You\textsubscript{2} hunted a pig for Maria.’

   \(n\text{-nda\textsubscript{1}}\text{-m} \mapsto \text{nadam}\)

c. Kie usindu Maria-na bosik eyew \underline{n-} nda- im.
   2NSG all Maria-for pig see 2NSG-AUX-PL.PST
   ‘You\textsubscript{1} hunted a pig for Maria.’

   \(n\text{-ndi\textsubscript{1}}\text{-m} \mapsto \text{nedim}\)

(22) Marori: transitive subjects (auxiliary suppletion vs phi-sensitive tense)

a. Nie purfam Jayapura di \underline{kuye-} den.
   1NSG person Jayapura soon be-1DU.PRS
   ‘We\textsubscript{2} are in Jayapura soon.’

b. \underline{kuye-}  d- u \underline{kuye-} m- en
   sit.NPL.NFUT-PRS-1SG.NPST sit.NPL.NFUT-PST-1NPL.NPST

   \underline{kuye-}  d- en \underline{kuye-} m- en
   sit.NPL.NFUT-PRS-1DL.NPST sit.NPL.NFUT-PST-1NPL.NPST

   mingge- men mingge- men
   sit.PL.NFUT-1PL sit.PL.NFUT-1PL

   ‘I/we sit’
   ‘I/we sat’

(23) Chamorro: subjects of intransitive

a. \underline{H(um)an\textsubscript{1}} ao gue’ para Saipan.
   {\langle \text{NPL.SBJ}\rangle} go 3PL.ABS to Saipan
   ‘(S)he went to Saipan.’
b. $H(um)anao$ $siha$ $para$ $Saipan$.  
\(\text{NPL.SBJ}\)\text{go} $3\text{NSG.ABS}$ to $Saipan$  
‘They$_2$ went to Saipan.’

c. $\text{Man- hanao}\ siha\ para\ Saipan$.  
\(\text{PL.SBJ}\text{-go} \ 3\text{NSG.ABS}\text{ to} \ Saipan\)  
‘They$_{\geq 3}$ went to Saipan.’

(24) Chamorro: antipassive (because of indefinite object)

a. $\emptyset\ - \text{Man-li’e’ yo’ guma’}$.  
\(\text{NPL.SBJ-DTR-see} \ 1\text{SG.ABS} \text{ house}\)  
‘I saw a house.’

b. $\emptyset\ - \text{Man-li’e’ ham guma’}$.  
\(\text{NPL.SBJ-DTR-see} \ 1\text{EX.NSG.ABS} \text{ house}\)  
‘We.EX$_2$ saw a house.’

c. $\text{Man- man-li’e’ ham guma’}$.  
\(\text{PL.SBJ-DTR-see} \ 1\text{EX.NSG.ABS} \text{ house}\)  
‘We.EX$_{\geq 3}$ saw a house.’

(25) Chamorro: nonfocused agents of goal-focused verbs

a. $L(in)i’e’ i ma’estro ni patgon$.  
\(\text{GFOC.SG.SBJ}\)\text{see} \ \text{DEF}\text{ teacher} \ \text{DEF.NFOC}\text{ child.SG}\)  
‘The child saw the teacher.’

b. $L(in)i’e’ i ma’estro ni famagu’on$.  
\(\text{GFOC.SG.SBJ}\)\text{see} \ \text{DEF}\text{ teacher} \ \text{DEF.NFOC}\text{ child.NSG}\)  
‘The children saw the teacher.’

c. $Ma\ li’e’ i ma’estro ni famagu’on$.  
\(\text{GFOC.PL.SBJ see} \ \text{DEF}\text{ teacher} \ \text{DEF.NFOC}\text{ child.NSG}\)  
‘The children$_{\geq 3}$ saw the teacher.’

(26) Chamorro: future nonthird person

a. $\text{Para un saga giya Yigo}$.  
\(\text{FUT} \ 2\text{SG.ERG} \text{ stay in} \ Yigo\)  
‘You$_1$ will stay in Yigo.’

b. $\text{Para en saga giya Yigo}$.  
\(\text{FUT} \ 2\text{NSG.ERG} \text{ stay in} \ Yigo\)  
‘You$_2$ will stay in Yigo.’
c. Para en fañaga giya Yigo. fañaga = fan-saga
FUT 2NSG.ERG PL-stay in Yigo PL-stay
‘You ≥ 3 (PL) will stay in Yigo.’

(27) Range of suppletive and semisuppletive systems

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(28) Conclusion

a. The range of behaviours for composed duals within Hopi is mirrored in composed duals of other languages.

b. The pattern is always marginal, both typologically and within languages where it is attested.

c. Cautious reading: the pattern is crosslinguistically systematic (in a way that conspiracies of silence do not capture) and that verb-encoded number makes a semantic contribution.

d. If so, then, when verbal number is expressed by suppletion rather than by an independent morpheme, it is not a case of conditioned allomorphy but one of fusion, realising both the root and a number head.

(29) \[ IV = II^{II} \]
\[ \therefore \sqrt[IV]{IV} = II \]