An implicational hierarchy on the exponence of heterogeneous plurals.

Overview. This talk establishes a new implicational hierarchy regarding heterogenous plurals. Two types of heterogenous plural—associative (APL) and similative (SPL)—have been the subject of much linguistic inquiry (e.g. Corbett 2000, Moravcsik 2003, Cinque 2018, Smith 2020, Mauri and Sansò 2019, 2021, 2023). Associative plurals attach to a noun 'X' to generate 'X and X's associates' (1a). Similative plurals attach to a noun 'X' to generate 'X and things like X' (1b).

(1) a. Simon *nang* (Sawila; Kratochvíl 2014) b. mi *kadek* (Ma Manda; Pennington 2016)
    Simon APL   water SPL
    'Simon with his friends'   'water and such'

The APL and SPL in (1) involve dedicated plural morphology. However, it is also possible that a language uses regular plural morphology as the associative or similative plural.

(2) a. John *kkaa* / keel *kkaa*   b. sumoo-*domo* / togi-*domo*
    John PL   / boy PL   Sumo-PL   / friend-PL

    'John and his family' / 'boys'   'Sumo wresting and suchlike' / 'friends'
              (Koyukon; Thompson 1989)   (Shiiba; Shimoji & Hirosawa 2022)

If a language has both APL and SPL (many languages have only one), there are four logical possible combinations for the exponence of the heterogenous plural: (i) the APL and the SPL are the same as the regular plural, (ii) the APL and the SPL use dedicated morphology, (iii) the APL is the same as the regular plural & the SPL uses dedicated morphology, (iv) the APL uses dedicated morphology & the SPL is the same as the regular plural. I show that only (i)–(iii) are actually attested: **there is no language that uses dedicated morphology for the APL and regular plural morphology for the SPL.**

Data. I have found 8 languages that have the pattern combination in (i): Shiiba, Chintang, Eastern Dan, Ese-Ejja, Nepali, Cavieña, Dogon and Kharia. This is illustrated in (3) with Chintang.

(3) Mankumar-*ce* / phuŋ-*ce* / cha-*ce*   (Chintang; Paudyal 2013)
    Mankumar-PL / flower-PL / child-PL

    'Mankumar and friends' / 'flowers and so' / 'children'

The pattern combination in (ii)—both APL and SPL use dedicated morphology—is found in Kuuk Thaayorre (4). The APL is the suffix *-mangka* (possibly from 'low down by') and the SPL is =*yuk* ('stuff'). It is also found in Goemai, but this time both the APL and SPL are *gwén* (homophonous with the 2PL pronoun) (5).

(4) Dan *mangka* / wuuc=*yuk*   (5) *gwén* Shalyen / *gwén* dask'oom
    Dan APL   / dance=SPL   APL Shalyen / SPL elders.PL

    'Dan and his associates' / 'dances and things'   'Shalyen and his people' / 'those kinds of elders'
              (Kuuk Thaayorre; Gaby 2018)   (Goemai; Hellwig 2011)

Pattern combination (iii) is found in Turkish, Japanese, Gooniyandi and Manambu. For example, the Japanese APL is the regular plural -*tachi*, but the SPL suffixes are -*toka*/-*tari*.

(6) Taro-*tachi* / Taro-*toka* / gakusei-*tachi*
    Taro-PL   / Taro-SPL / student-PL

    'Taro and his associates' / 'Taro and someone like him' / 'students'   (Smith 2020)

Interestingly, no language shows pattern combination (iv): the APL uses dedicated morphology and the SPL is the same as the regular plural (the inverse of pattern (iii)). No cross-linguistic survey focuses on languages where the SPL is identical to the regular plural (Mauri & Sansò are concerned only with SPLs that use dedicated morphology). Instead, we have to look for SPLs in languages that are known to use dedicated APL morphology, and see which pattern shows up. To do this, I took 87 languages from Daniel and Moravcsik (2013) that are listed as having either a unique affixal or unique periphrastic associative plural (8 languages were removed because they actually use the regular plural as the APL). I added to this 29 languages from Mauri and Sansò (2023) for a total of 116. I was able to examine 49 languages with dedicated APL morphology in relevant detail (7).

(7) Abkhaz, Abui, Afrikaans, Arapesh, Barasano, **Bargam**, **Belep**, **Bengali**, Buwal, Central Pomo, Chechen, Dargwa, **Goemai**, Greenlandic West, Hausa, **Iatmul**, **Ingush**, Inuktitut, Kambaata, Karardild, **Kayah Li**, **Kuche**, **Kuuk Thaayorre**, **Lao**, **Ma Manda**, Maltese, Mangarrayi, Mauwake, Meithei, Mian, Muna, Mwotlap, **Nama**, **Nork'k**, **Nungon**, **Persian**, Rapanui, **Sandawe**, Sawila, Sheko, **Shughni**, Slave, Toqabaqita, Tuvaluan, **Wardaman**, Wolof, Yagua, Yidiny, Yukaghir (Kolyma).

18 of these languages (in bold) are described in the literature as having a SPL (for the rest no mention was made). Importantly, all 18 form their SPL using dedicated morphology. (8) illustrates this for Bargam.

(8) Anna *nen* / buluk *nagah* / ami-*gniz*
    Anna APL / lizard SPL / daugher-PL

    'Anna and those with her' / 'lizards and things' / 'daughters'   (Hepner 2006, pp.31, 58, 144)

One language, Kambaata, looks at first like a counterexample. It has a dedicated APL (-*'VV*) and Treis (2014) has an example *buur-aakk*, (butter-PL) 'butter and other things'. However, Treis notes that this meaning of the plural is only found on mass nouns and may be a 'type' plural, i.e. *types of butter*. Since SPLs aren't restricted to mass nouns, this is a more likely analysis of the data. We then have a new implicational hierarchy on the exponence of heterogenous plurals: if the SPL is the same as the regular plural, the APL is too.

Analysis. One way to account for this implicational hierarchy is as a morphological restriction on syncretism. In pattern (i), all three plurals are syncretic. In pattern (ii), either APL and SPL are syncretic and regular plural is distinct, or there is no syncretism. In pattern (iii), regular plural and APL are syncretic, and SPL is distinct. What is disallowed, pattern (iv), is syncretism between the regular plural and the SPL, with the APL having a distinct form. Another way of stating it is that the disallowed pattern is an ABA one.

	PL	APL	SPL		PL	APL	SPL		PL	APL	SPL		PL	APL	SPL
(i)	a	a	a	(ii)	a	b	b/c	(iii)	a	a	b	*(iv)	a	b	a

*ABA is a morphological pattern whereby the first and third elements in a sequence may only share a property if the middle element does too. *ABA patterns have been observed for case syncretism (Caha 2009), suppletion in degree adjectives (Bobaljik 2012), case and number suppletion in pronouns (Smith et al. 2019), among other things. For example, Bobaljik (2012) shows that no language shows the (ABA) adjectival suppletion pattern *good–better–goodest*. It is argued that *ABA arises due to feature containment, e.g., [[[ADJ]COMP]SPRL]. When a spell-out rule contains the middle feature ([COMP]), this rule must also apply to [[COMP]SPRL] because it is more specific than a rule for only [ADJ]. I propose that the implicational hierarchy I observe in heterogeneous plurals is due to containment of number features. Specifically, I claim that all three plurals (PL, APL, SPL) have the feature [#] (number). APL and SPL have an additional subfeature, call it [Het], that specifies their plurality as heterogenous. I propose that SPL is further specified for [SIM], which specifies that the members of the set share some similarity (8). Note that this containment relation is in line with Smith's (2020) semantic analysis of APLs and SPLs, which says that APLs involve a *relation* ('X' and 'X's associates') and SPLs involve a *similarity relation* (i.e., a more specific relation).

(9) a. PL = [#]   b. APL = [[#] Het]   c. SPL = [[[#] Het] SIM]

The talk shows that patterns (i)–(iii) are predicted to be attested given the containment relations in (8). Pattern (iv)—the SPL is the same as the regular plural, but the APL is distinct—is ruled out because it would require a spell-out rule [#][Het] → /b/ that is ignored by SPL in favor of the less specific rule [#] → /a/.

Summing up. I have observed a new implicational hierarchy within within heterogenous plurals: if the SPL is the same as the regular plural, the APL is too. While APLs and SPLs have separately received a lot of attention (see *Overview*), their interaction in individual languages has not been studied. This talk is the first cross-linguistic investigation into the patterns of exponence found concurrently in APLs and SPLs.

Sel.Refs. Mauri & Sansò (2023). Heterogeneous sets. *Linguistic Typology*. **Smith** (2020). Similative plurals and the nature of alternatives. *Arizona PhD Dissertation.* **Bobaljik** (2012). *Universals in comparative morphology.* MIT Press. **Cinque** (2018). On the merge position of additive and associative plurals. *From sounds to structures*. **Corbett** (2000). *Number*. CUP.