

Some notes on coordination in head-final languages

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1. Introduction

In a structuralist tradition going back to at least De Groot (1949:112), and recently revived by Kayne (1994:12), coordinated constituents are taken to be headed by the conjunction, which takes the second coordinand as its complement. This makes it possible to classify conjunctions as initial (A [& B]) or final (A [B &]), and to consider the question whether the use of initial/final conjunctions correlates with headedness (the typological distinction between head-initial and head-final languages). This question is addressed by Stassen (2003: 775), who finds that final conjunctions occur in verb-final languages only. This statement, however, glosses over the fact that final conjunction is rare even in head-final languages.

This article presents a survey of the phenomena of noun phrase coordination in head-final languages, from which it will emerge that head-final languages display a remarkable preference for initial conjunctions. If De Groot and Kayne are right about the structure of the coordination constituent, one is forced to conclude that almost all head-final languages show some head-initial structure.

The survey presented here is based on a sample of 162 languages constructed for studying morphosyntactic variation (see the Appendix). Head-final languages are defined as those in which the verb (V) and adposition (P) — or one of the two in case the position of the other is unclear — follow their complements in the unmarked surface word order. Noun phrase coordination is defined as in (1):

(1) *Noun phrase coordination*

A constituent *x* is a noun phrase coordination iff *x* contains two or more noun phrases realizing a single argument or grammatical relation.

This definition includes cases like (2a) and (2c), but excludes cases like (2b) and (2d):

- (2) a. [John and Mary] went to the store
- b. [John, Mary], they went to the store
- c. [John with Mary] went to the store
- d. [John] went to the store [with Mary]

We will refer to the type of (2b) as involving a *summary strategy*: multiple entities are listed and then followed by an element which summarizes or refers to the list as a single entity. The types in (2c,d) employ the familiar *comitative strategy* (Stassen 2000, 2003); (2c) is potentially a case of coordination, but (2d) is not.¹

Elements like *and* and *with* in (2a,c) will be called *conjunctions*, and elements like *they* in (2b) and *with* in (2d) will be called *summary elements* and *comitative elements*, respectively. Based on the number of conjunctions N (where M = the number of coordinands) we distinguish among asyndetic ($N = 0$), monosyndetic ($N = 1$ or $M - 1$) and polysyndetic ($N = M$) coordination types. We concentrate on the monosyndetic type here, and based on the position of the conjunction, we will distinguish *initial* (3a) and *final* (3b) conjunctions:²

- (3) a. A & B
- b. A B &

This article can only offer a brief survey of the relevant phenomena. It has the following contents. Section 2 shows the distribution of head-initial and head-final languages in the sample used for the survey, as well as the distribution of initial and final conjunctions. Section 3 discusses the status of final conjunctions in monosyndetic noun phrase coordination. Section 4 then presents the data on monosyndetic noun phrase coordination in head-final languages, showing various ways in which these languages converge on the type of (3a). Section 5 adduces relevant phenomena from polysyndetic coordinations. Section 6 concludes.

2. Head-initial and head-final languages

At this stage of the research I have been able to obtain conclusive data concerning the position of V and/or P in 150 out of 162 languages; we have data on both V and P in 124 languages. Of these 124, V and P are consistently initial or final in 119 languages; 52 of those are head-final. For 26 languages, we have

data on either V or P (but not both); 16 of those are head-final, making a total of 68 head-final languages in the sample, vs. 77 head-initial languages.

However, whereas head-initial and head-final construction is more or less evenly distributed across the languages in the sample, this is not the case with initial and final conjunctions. We have conclusive data on monosyndetic noun phrase coordination in 136 languages. In 12 of those we find both initial and final conjunctions, in 4 we find exclusively final conjunctions, and in 119 we find exclusively initial conjunctions.³

This already suggests that final conjunction is rare. This may surprise readers familiar with Latin, which yields in *-que* the textbook example of a final conjunction (*arma virum-que* ‘arms and the man’). However, *-que* is a second position clitic which is suffixed to the first word of the second conjunct, as in *ingenia fecunda totius-que naturae capacia* [minds fertile whole:GEN-and nature:GEN grasping] ‘minds that are fertile and able to grasp the whole of nature’ (Plinius Maior, *Nat. Hist.* 2,190). Such second position conjunctions are not uncommon, and easily give the impression of a final conjunction if the second coordinand consists of a single word. However, since they mark the second conjunct’s left edge, they should be classified as initial conjunctions (*pace* Dik 1968:42). In the sample, second position conjunctions are attested in (at least) Amharic, Evenki, Fon, Hausa, Kalasha-ala, Turkish, Wardaman, and West Greenlandic; they are scored as initial conjunctions here.

3. Final conjunction

The languages in the sample which (when not using simple juxtaposition) employ final conjunction exclusively are Barasano, Ika, Logbara, and Paumari. These are all head-final.⁴ The languages which use both initial and final monosyndetic conjunctions are Baram Kayan, Canela, Hualapai, Kalasha-ala, Ket, Kham, Kolyma Yukaghir, Navaho, Slave, Tubu, Wari’, and Western Desert Language. Most of these are V/P-final, but Baram Kayan and Wari’ are V/P-initial, in apparent violation of Stassen’s generalization.⁵

However, Stassen’s generalization may be upheld if we take into account that languages using final conjunctions (whether exclusively or optionally) almost always employ either the summary or the comitative strategy. For the problematic cases of Baram Kayan and Wari’, this is illustrated in (4)–(5):

- (4) *Baram Kayan, Western Austronesian*
 en na' uvui nah dalo' Anyi' ji Jau ji Uvang ji pah
 PRT he call FOC them Anyi' one Jau one Uvang one also
 'He called them — Anyi, Jau, and Uvang.' (Clayre and Cubit 1974:72)
- (5) *Wari', Chapacura-Wanham*
 Cotem We wata' ca' na ca to wet 'iripain
 CW 1SG thus it was AUX be.at:PRES still 1PL:AUX
 xirim ca' ta (Everett and Kern 1997:163)
 house this EMPH
 'Cotem We and me stayed here at the house.'

Baram Kayan generally uses an initial conjunction strategy (Clayre and Cubit 1974: 72), but it has the option of adding a final element *pah* 'also' or *lahuh* 'in addition, also'. In some constructions, the coordinands are merely listed, and the final element appears to function as a final conjunction. Wari' has as one of its strategies the juxtaposition of the coordinands, followed by the expression *ca' na* 'thus it was' (Everett and Kern 1997: 160, 163).

Both examples illustrate the *summary strategy*: the coordinands are listed (typically asyndetically), and a summary element is added to signal the completion of the list or to refer to the listed elements via a pronoun in a canonical argument or grammatical relation position (as in (2b)). In the sample, I have found various elements employed in the summary strategy (see also Stassen 2003:775f): (i) copulas (Hualapai, Paumari, Wari), (ii) numerals or 'together' (Barasano, Daga, Enets, Kham), (iii) pronouns (Amele, Baram Kayan, Baule, Mapudungu), (iv) focus markers, such as 'also' (Amharic, Baram Kayan, Barasano, Kalasha-ala, Kham, Slave, Western Desert Language), (v) 'and so on' (Eastern Kayah Li, Tiri).⁶

The summary strategy is used in two of the four final conjunction languages (Barasano, Paumari) and in seven of the twelve languages using final conjunction as an optional strategy (Baram Kayan, Hualapai, Kalasha-ala, Kham, Slave, Wari', and Western Desert Language). With the exception of Tubu, the remaining final conjunction languages all use a comitative element as the final conjunction, illustrated here for Logbara and Ket:⁷

- (6) *Logbara, Nilo-Saharan*
 ètɔɔ pĩ mù dí a'ú-â bε
 hare and/PL⁸ go then fowl-DIM with/also⁹
 'the hare and a small fowl went together.' (Crazzolara 1960:101)

(7) *Ket, Yenisei Ostyak*

ba:t ba:m-as' dɔl'i:n'
 old man old woman-COM live:3PL.PAST

'The old man and the old woman lived.' (Werner 1997:321 fn 2)

As can be seen, the Logbara example (6) is of the type (2d), with the comitative PP nonadjacent to the initial conjunct. The example from Ket (7) is of the type (2c), where the plural agreement suggests that the comitative element (COM) has developed into a final conjunction.

As discussed in Mithun (1988), conjunctions are often grammaticalized focus markers (a type of summary element) or comitative markers. Mithun (1988:336f) argues that noun phrase coordination is an innovative feature, noting that it is disfavored in spontaneous discourse: "speakers typically introduce only one major piece of information into discourse at a time (...). Once they have been introduced individually, sets of entities can be referred to collectively by plural pronouns, so the need for conjoined noun phrases is bypassed." (Mithun 1988:337) This suggests that summary elements are not conjunctions, but elements featuring in a strategy that seeks to *avoid* coordination. Likewise, Mithun notes that the comitative construction is "originally used to circumvent coordinate noun phrases" (1988: 339), and she describes in detail how the summary and comitative strategy may develop into a noun phrase coordination strategy (see also Stassen 2003:785).

As we will see in Section 4, final focus markers and comitative elements very often develop into *initial* conjunctions. For now, the relevant point is that there is reason to believe that the summary and comitative strategies do not instantiate noun phrase coordination, but strategies that seek to avoid coordination. As a number of examples bear out, the two noun phrases conjoined in the summary and comitative strategies regularly fail to occupy a single argument or grammatical relation position: for instance, in (4) the internal argument/object is *dalo* 'them', and in (6) one of the noun phrases is contained in what looks like a dislocated PP.

These observations suggest that the proportion of languages featuring final conjunctions (obligatorily or optionally) is even lower than indicated in Section 2.

4. Initial conjunction in head-final languages

The sample on which this survey was based contains many head-final languages using initial conjunctions with monosyndetic noun phrase coordination.

Some examples featuring final verbs or adpositions and initial conjunctions are given below:

(8) *Basque, isolate*

lagun *eta* ahaide-ei agur egi-n die
 friend and relative-PL:DAT salute make-PERF AUX
 'He has greeted his friends and family.' (Saltarelli 1988:90)

(9) *Canela, Macro Ge*

capi *me* kryt ma tẽ
 Capi and Kryt away go
 'Capi and Kryt go away.' (Popjes and Popjes 1986:150)

(10) *Ket, Yenisei Ostyak*

ætna hissi-j-diŋta ɔn' qĩ:n, s'ɛʔn *haj* qo'n duɣi'n
 our forest-in many elks reindeer and bears live:3PL
 'In our forest live many elks, reindeer and bears.' (Werner 1997:321)

The data from the languages in the sample provide ample illustration of the developments sketched in Mithun (1988), where conjunctions are grammaticalized focus markers ('also') or comitative markers. Remarkably, the source of the initial conjunction is often a *final* focus or comitative marker.¹⁰ This can be seen in the following examples:

(11) *Monguor, Altaic*

mori *da* rdžigeni χulōx
 horse and donkey hitch up
 'Hitch up the horse and the donkey.' (De Smedt and Mostaert 1964:163)
 cf. mori nige *da* [horse one also] 'even one horse' (*op.cit.*: 51)

(12) *Lezgian, North Caucasian*

Isa-di-*ni* Ali-di sada-sada-w ğil-er wuga-na
 Isa-ERG-CONJ Ali-ERG one-one-ADESS hand-PL give-AOR
 'Isa and Ali shook hands.' (Haspelmath 1993:327)
 cf. zun-*ni* [I:ABS-also] 'I also.' (*op.cit.*: 328)

(13) *Slave, Na-Dene* (Rice 1989:1067)

hĩnĩ tsá *hé* tehkái kwik'ĩ t'áh kagenĩwe
 past beaver with muskrat gun with 3PL:hunted
 'In the past, people hunted beaver and muskrat with guns.'
 cf. bee *hé* [knife with] 'with a knife' (*op.cit.*: 1073)

- (14) *Mikir, Sino-Tibetan*
 notbuk, kitap *pen* penchil
 notebook book and pencil (Jeyapaul 1987:135)
 cf. *la-pen* [3SG-ASS] 'with him' (*op.cit.*: 76)

In (11) and (12), the initial conjunction is also used as a final focus marker; in (13) and (14), the initial conjunction is a comitative/associative (ASS) postposition or suffix.

We also find a number of other cases where the initial conjunction is derived from a final (postpositional or suffixed) element: a verb in (15), a same-subject (ss) switch-reference suffix in (16), a non-comitative postposition in (17):

- (15) *Suppire, Niger Congo*
 Mu *bàrà* mii na, wùù sí ñ-kàrè Sukwoo na
 you add me on we FUT FUT-go Sikasso at
 'You and I, we will go to Sikasso.' (Carlson 1994:268)
 cf. Uru na ñ-káágé sà ù kàcìyí *bàrà* Bàmbeme wúyina Sogo Kanha na
 [he PROG was.going go his bones add Bambeme poss Sikasso Town at]
 'He was going to go add his bones to Bambene's in Sikasso.' (*op.cit.*:267)
- (16) *Kiowa, Tanoan*
 mà:yí gò k'yá:hî:
 woman and man (Watkins 1980:288)
 cf. John cán gò hòndé gyát-kôn [John arrived ss something brought]
 'John arrived and brought us gifts' (*op. cit.*: 294)
- (17) *Ainu, isolate*¹²
 otcike huraye *wa* pirpa
 tray wash and wipe
 'Wash and wipe the tray.' (Tamura 2000:149)
 cf. nupuri ka *wa* [hill top.of from] 'from the hill' (*op. cit.*: 133)

Finally, the sample contains (at least) three head-final languages employing borrowed initial conjunctions, illustrated in (18) for Djingili (*an* < English *and*).¹³

- (18) *Djingili, Australian*
 ñargu'lii an ñuilaimbirgari
 Tommy and Ned (Chadwick 1975:97)

Borrowing of conjunctions is quite common, for reasons discussed in Mithun (1988:351–352). However, I know of no language, head-initial or head-final, that has adopted a foreign element as a final conjunction.

5. A note on polysyndetic conjunction

A number of head-final languages in the sample show polysyndetic noun phrase coordination of the type *A & B &*.¹⁴ While this falls outside the scope of this article, it is perhaps significant that in all cases where polysyndetic coordination alternates with monosyndetic coordination, initial conjunction monosyndetic coordination appears to present the unmarked case. This is illustrated in (19), where we take complex numerals to reflect the unmarked coordination strategy:

- (19) *Marind, Trans New Guinea*
- a. nok namèk *a* nok namùk *a*
 1SG brother and 1SG sister and
 ‘my brother and my sister’ (Drabbe 1955:135)
 - b. inah *a* izakod
 two and one
 ‘three’ (*op. cit.*: 26)

Another observation is that where the two conjunctions used in polysyndetic coordination are not identical, the final conjunction is a summary or comitative element:

- (20) *Daga, Trans New Guinea*
- nenip Bure *ge* nenip Dukuik *dere*
 bird Bure and bird Dukuik two
 ‘the Bure bird and the Dukuik bird’ (Murane 1974:94)

If the summary/comitative elements are not true conjunctions, these cases actually instantiate initial conjunction coordinations.

6. Conclusion

Head-final languages overwhelmingly employ initial conjunctions. The few cases of final conjunctions found in the sample are suspect, in that they represent strategies (the summary strategy and the comitative strategy) which Mithun

(1988) identifies as alternatives to coordination. The summary strategy is also found in head-initial languages and in combination with initial conjunctions. There appears to be a universal developmental path from final pseudo-conjunctions (summary or comitative elements) to genuine initial conjunctions. Moreover, the sample does not appear to contain a single language that uses a pure conjunction (i.e. not a comitative or summary element) in monosyndetic noun phrase coordinations of the type (3b). The findings suggest that (3a) is the universal type of monosyndetic noun phrase coordination.¹⁵

Appendix

The sample used for this survey is a 162 language variety sample, intended to obtain with minimal means maximal coverage of the morphosyntactic variation across the world's languages. The data are taken from published reference grammars. The sample includes the following languages, listed alphabetically (data from languages in brackets not yet fully incorporated): !Kung, Abelam, Abujhmara, Abun, Acehnese, Ainu, Albanian, Aleut, Amele, [American Sign Language], Amharic, Arapesh, Barasano, Baram Kayan, Basque, Baule, Bhumij, Birom, Brahui, Breton, Burmese, Burushaski, Cakchiquel, Canela, Cantonese, Cape Verdean Creole, Central Asmat, Chalcatongo Mixtec, Chamorro, Chrau, Chukchi, Coos, Daga, Degema, Digaru, Dilling, Dimli, Djingili, Dogon, Duka, Dutch, Dyirbal, East Makian, Eastern Kayah Li, Eastern Ojibway, Eipo, Enets, Evenki, Ewondo, Fijian, Fon, Georgian, Gojri, Gooniyandi, Grebo, Guaraní, Gulf Arabic, Haida, Hausa, Hiligaynon, Hixkaryana, [Hmong], Hualapai, Hungarian, Iaa, Ibibio, Igbo, Ika, Iraqw, Ivatan, Japanese, Jukun, Kabardian, Kabyle, Kadiwéu, Kafa, Kalabari, Kalasha-ala, Kam, Kambera, Kayardild, Ket, Kham, Khmer, Kikuyu, Kilivila, Kinnauri, Kiowa, Kobon, Kokborok, Kolyma Yukaghir, [Krongo], Kwaio, Ladakhi, Lango, Lavukaleve, Lele, Lezgian, Limbum, Logbara, Loni, Lusi, Malagasy, Mao Naga, Mapudungu, Margi, Marind, Mauricien, Mikir, Mongondow, Monguor, Muna, Mundang, Nabak, Naga Pidgin, Nateni, Navaho, Ndyuka, Ngbaka, [Nimboran], Nivkh, Nkore-Kiga, Nootka, North Efate, Northern Qiang, Paumotu, Ponapean, Portuguese, Pulaar, Roti, Russian, Saija, Sama, Samoan, Sie, Slave, Songhai, Soninke, Suppire, Tagalog, Tamil, Tauya, Temiar, Temne, Tikar, Tiri, Tiv, Tlingit, Toba Batak, Tsou, Tubu, Turkish, Tuscarora, Vietnamese, Wardaman, Wari, West Greenlandic, Western Desert Language, Yaqui, Yimas, Yokuts, Yoruba.

Notes

1. This is in line with Stassen (2003), who distinguishes between *coordination* and *conjunction*, the latter including (2b,d).
2. (3a) is also referred to as 'medial' conjunction, but a true initial type & A B is never found (Stassen 2003, Haspelmath 2000).

3. Note that the numbers in the text are based on a first inspection, without considering whether what is described as noun phrase coordination meets the definition in (1).
4. Barasano and Ika are V/P-final; Logbara is P-final, with the status of V unclear; Paumari is reported to be P-final and V-initial (one of the 5 inconsistent languages), but it is possible that Paumari has generalized an object demoting strategy yielding a basic SVO order (see Chapman and Derbyshire 1991:165f, 250f).
5. Hualapai and Kham are V-final with P unclear, and Western Desert Language is reported to have no clear basic word order.
6. As can be seen, not all of the relevant languages feature monosyndetic final conjunction: the summary strategy is combined with polysyndetic conjunction in Amele and Enets, and with monosyndetic initial conjunction in Amharic, Baule, Daga, Eastern Kayah Li, Mapudungu and Tiri.
7. In some dialects of Tubu, final conjunction appears to function as a variant of the polysyndetic conjunction type **A & B &** (Lukas 1953:66). Another case is Kalasha-ala, where (3a) is the default, but (3b) can be found where the coordinands form a fixed expression, as in *sos-brā-y* [sister-brother-and] 'sisters and brothers' (Degener 1998:166). In Canela, Popjes & Popjes (1986:150) report that a (3b) variant of (3a) (=9)) "puts the idea of accompaniment in focus", while there is no indication that the relevant conjunction, *me*, is a comitative marker. Slave uses both summary and comitative final conjunctions, the latter also used initial and polysyndetically (Rice 1989:1067).
8. There is reason to believe that the element *pĩ* in (6) is not a conjunction but a pluralizer (suffixed to a noun it means 'cum suis', Crazzolara 1960:101). A common phenomenon in the comitative strategy is the 'inclusory effect', where the first member has to be formally plural (so that *we go with him* expresses 'I go with him'; cf. Payne 1985:30, Haspelmath 2000: Section 6.2, Lichtenberk 2000).
9. Note that the comitative element doubles as a focus marker, suggesting a connection with the summary strategy.
10. The sample includes 59 postpositional languages, of which 25 employ the comitative strategy. In 15 of those 25 languages, the comitative marker has developed into an initial conjunction: Burmese, Dogon, Haida, Japanese, Kinnauri, Kokborok, Ladakhi, Lavukaleve, Mikir, Navaho, Northern Qiang, Slave, Suppire, Turkish, West Greenlandic. The remaining languages are those discussed in Section 3, or use polysyndetic coordination. (A special case is Songhai, which is postpositional, but the comitative element, also used as a conjunction, is a preposition; Heath 1999:108, 113.)
11. A possibility not contemplated here is that initial conjunctions developing out of final elements form a constituent with the first coordinand, yielding **[A&] B** (cf. Johannessen 1998:109). That this analysis applies is not apparent from the description of the relevant constructions in the grammars, but further study would be needed to exclude it in each case.
12. *Wa* is not used for noun phrase coordination (Hidetoshi Shiraishi, p.c.).

13. The other two cases are Lezgian *wa* and Turkish *ve*, both < Arabic *wa*.
14. This group includes Amele, Burmese, Central Asmat, Digaru, Dilling, Eipo, Enets, Evenki, Japanese, Kabardian, Kafa, Kham, Kobon, Logbara, Marind, Nivkh, Tamil, Tauya, Tubu, and Yimas.
15. With disjunction, adversatives, and clause coordination the proportion of final conjunctions appears to be lower still (cf. Haspelmath 2000: sect. 2.2).

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