

Coordination strategies in Australian languages

Rachel Nordlinger and Louisa Sadler

University of Melbourne and University of Essex

1 Introduction

- Increasing amount of work on coordination in the typological and theoretical (especially LFG) literature in recent years (e.g. Stassen 2000, Haspelmath (ed) 2004, Dalrymple and Kaplan 2000, Sadler 2003, King and Dalrymple 2004, Peterson 2004, etc.).
- However, very little of this has focussed on Australian languages. Stassen (2000) includes some Australian language data in his sample, but Haspelmath (ed) (2004) contains no paper on Australian languages (except for some limited discussion of Nunggubuyu in Heath's contribution).
- Our project aims to rectify this by investigating the range of coordination strategies and their properties in Australian languages and in the context of the broader crosslinguistic literature.
- This paper is not intended to be an exhaustive list of properties of coordination in Australian languages. This project is in its very early stages (in fact this paper constitutes the beginning!), and our purpose here is to map out the potentially interesting properties of coordination in Australian languages as we have determined so far, and to hopefully elicit some further data and/or suggestions through discussion, and to stimulate further research on these issues.
- For reasons of space (and time!) we focus here particularly on NP coordination.

2 Defining Coordination

According to Stassen (2000:4), a sentence contains an instance of NP-conjunction if:

- (a) it describes a single occurrence of an event (action, state, process, etc.) and if
- (b) this event is predicated simultaneously of two participant references, which are conceived of as separate individuals¹

¹For practical purposes, Stassen (2000) restricts his study to coordination of two NPs only, which is why this restriction is built into his definition.

This definition will adequately distinguish NP-coordination from appositive constructions, generic-specific constructions and part-whole constructions. We further assume that the coordinated structure must be symmetrical in that the various parts must have the same syntactic status, with neither being subordinate to the other. This enables us to distinguish coordination from comitative constructions (since one element is clearly the head in these constructions); and from inclusory constructions (since one element refers to the whole construction):

- (1) *kake ilderne*
 elder.brother 1DU
 ‘elder brother and I’ (Mparntwe Arrernte, Wilkins 1989, cited in Haspelmath 2004:25)

Of course, there are many interesting issues in distinguishing these constructions from each other in individual languages for another paper!

3 NP Coordination Structures

3.1 Basic Patterns

There are three basic patterns for coordination cross-linguistically: (i) asyndetic coordination (simple juxtaposition) (2); (ii) monosyndetic coordination (3); and (iii) bisyndetic coordination (4). The following examples illustrate each of these three types from Australian languages:

- (2) *Gaj-ba ngurru manganyma yangaji.*
 eat-FUT 1PL.INC(NP) tucker.III(ACC) meat.I(ACC)
 ‘Let’s eat the bread and meat.’ (Wambaya, Nordlinger 1998: 257)
- (3) *Kanku ya mankada-li wima wangka-yi.*
 boy and girl-ERG song-ABS sing-PRES
 ‘The boys and girls are singing a song.’ (Diyari, Austin 1981: 231)
- (4) *Kuwarri kurrngal ngalyun-pa pirirri-pa partany-karrangu-pa.*
 now many woman-CONJ man-CONJ child-PL-CONJ
 ‘Now there is a big mob of women, men and children.’ (Nyangumarta, Sharp 2004: 156)

Stassen (2000: 7) reports that cross-linguistically, obligatory use of juxtaposition for NP coordination is very rare. Interestingly, however, it appears to be the most common strategy amongst Australian languages (Blake 1989:91), and many languages (such as Wambaya) have this as the only possible (and therefore obligatory) strategy for NP coordination.

With respect to monosyndetic coordination, there are four logically possible types, which Haspelmath (2004) finds in the following descending order of frequency, with type 3 being very rare and type 4 unattested in his sample.

- [A] [co B]
- [A co] [B]
- [A] [B co]
- [co A] [B]

There are a number of examples of type 3 among Australian languages:

- (5) *Henry-ku mama ngunytju puru*
Henry-GEN mother father and
'Henry's father and mother' (Pitjantjatjara, Glass and Hackett 1970: 66)
- (6) *nalija miyha-ngana*
tea meat-LINK
'tea and meat' (Bunuba, Rumsey 2000: 115)
- (7) *ngunha marlpa ngatharntu-ku karnku-lku kurrjarta-ku*
that man 1sgGEN-ACC keep-PRES spear-ACC
warrkunti-muntu-ku.
boomerang-CONJ-ACC
'That man is keeping my spear, and boomerang.' (Panyjima, Dench 1991: 153)
- (8) ... *gu-yapan? gu-wangginy?, barrgu-yo-ngana, rni-ki-?, rna-ki-?*
... GU-two GU-one 3PL/GU-put.on-PR here there
gu-rawarra, rni-ki-? rlurrungga?, rna-ki-? ngarni, gu-wolo-pula-yung
GU-EAST here middle there west GU-that-and-ABS
'... Three of them— one they put here, there on the east side; another here in the middle; another there on the west side, that also' (Ngandi, Heath 1978: 207)

Both Panyjima and Ngandi have an alternative bisyndetic option whereby the coordinator appears on each conjunct, as predicted by Stassen (2000: 14) who says that these constructions are usually best seen as a variant of the bisyndetic type with one coordinator optionally deleted. Heath (1978: 128) however, claims that [X Y *pula*] is the usual structure for NP coordination in Ngandi. Moreover, there is no bisyndetic alternative reported for Bunuba.

One example from Tiwi is suggestive of a type 4 construction, but without further information it's hard to tell whether it is to be analysed as a true coordinated structure or not:²

²This example is given by Stassen (2000: 16) as an example of a pronoun grammaticalising into a coordinator. Yet elsewhere (p. 15) he states that there are no languages that conform

- (9) *wuta Thapara Waijai*
 3PL Tapara Waijai
 ‘Tapara and Waijai’ (Osborne 1974: 72)

3.2 Distinctions between strategies

3.2.1 Natural vs. accidental coordination

Many languages exhibit a syntactic distinction between *natural* and *accidental* coordination (Haspelmath 2004, Dalrymple and Nikolaeva 2005, Wälchli 2005). In natural coordination the conjuncts of a coordinate phrase form a conceptual unit or are closely related in meaning (e.g. husband and wife, knife and fork, brother and sister, etc.), whereas accidental coordination involves items which are not expected to co-occur.

In some languages a particular coordination strategy is reserved just for natural coordination. For example, Dalrymple and Nikolaeva (2005: 6-7) show that in Udihe (Altaic, Siberia) there are distinct coordination markers for natural and accidental coordination, in Eastern Armenian there are different inflectional agreement patterns for each type of coordination, and in German, some cases of natural coordination lack determiners, while this is never possible with accidental coordination (10)-(11):

- (10) *der Mond und ein Sechser*
 the moon and a sixpence
 ‘the moon and a sixpence’ (accidental coordination)
- (11) *Sonne und Mond*
 sun and moon
 ‘the sun and the moon’ (natural coordination)

One observed cross-linguistic generalisation is that strategies for marking natural coordination tend to be less marked formally than those for accidental coordination (Haspelmath 2004). Stassen observes (2000:8) that where a language has available both juxtaposition and overt coordinators as coordinating strategies, the juxtaposition option is often used in more restricted functions, such as for natural coordination.

Although many Australian languages report both juxtaposition and overtly marked coordination as alternative possibilities, few report any difference in function. However, Austin (1981:231) reports that, while Diyari NPs are usually coordinated with the conjunctive particle *ya*, juxtaposition is possible

to the AND-NP NP schema. It’s not clear why this wouldn’t constitute a possible example of this schema.

when kin terms or human nouns are coordinated that refer to people of the same generation/age and (usually) different sex. For example *ngandi-yali ngapira-li* (mother-ERG father-ERG) ‘mother and father’; *pinadu wilhapina-li* (old.man old.woman-ERG) ‘old men and old women’.

Interestingly, Evans (2003) reports the opposite for Bininj Gun-wok. The usual way to encode NP coordination in Bininj Gun-wok is through juxtaposition as in (29), in which the coordinands are discontinuous:

- (12) ... *kun-kerri ma-ngi kun-yerrng*
 ... IV-cooking.stone 3/3P.get-PI IV-wood
 ‘... he got cooking stones, and firewood.’ (Evans 2003: 248, ex. 6.64)

However, it is also possible to use a conjunction, such as *dja* ‘and, or’, the use of which is more common with natural coordination involving “elements that in some way form a linked pair rather than simply an accidental grouping.” (Evans 2003:249)

- (13) *Man-bardbard la man-dadjek kabene-djarrk-nguybu-n.*
 III-heliosperma CONJ III-pteridifolia 3ua-together-flower-NP
 ‘The *Grevillea heliosperma* and the *Grevillea pteridifolia* flower together (at the same time).’ (Evans 2003:249, ex. 6.65)
- (14) *Wurdwurd dja teacher kabirri-kuk-djarrangbu-n kabirri-kurrme*
 children CONJ teacher 3a/3-body-sort-NP 3a/3-putNP
na-yahwurd dja na-kimuk.
 MA-small CONJ MA-big
 ‘The children and teacher sort out the fish into big and little (groups).’
 (ibid, ex. 6.66)

Thus, Bininj Gun-wok would seem to provide a possible counter-example to the claim by Dalrymple and Nikolaeva (2005) that there is no language which uses a more marked strategy for natural coordination than for accidental coordination (p. 7).

3.2.2 Animacy

Takia (Oceanic, PNG) has different coordination strategies determined by the animacy (or, to be more precise, the ‘humanness’) of the conjuncts: human nouns are conjoined with the postposition *da* while non-human nouns are conjoined with simple juxtaposition (Haspelmath 2004). Animacy is also a factor in differentiating coordination strategies in other Oceanic languages, such as Nélêmwa (Bril 2004) and Nemi (Moyses-Faurie and Lynch 2004).

We have as yet found no reports of animacy or related semantic factors

governing the choice between alternative coordination strategies in Australian languages, but it doesn't mean they're not out there!

3.2.3 Syntactic factors

Stepping briefly into clausal coordination, in some Western Desert dialects there are separate coordinating conjunctions for same-subject and different subject clauses. The following examples are from Yankunytjatjara (Goddard 1983:264ff):

- (15) *Wati-ngku papa pu-ngu munu mirra-ngu.*
 man-erg dog hit-past and:SS cry:out-past
 The man hit the dog and (he) cried out
- (16) *Wati-ngku papa pu-ngu kaa mirra-ngu.*
 man-erg dog hit-past and:DS cry:out-past
 The man hit the dog and it cried out (cited in Blake 1989:147)

Note that *munu* is also used as a NP coordinator, to which Goddard attributes its same-subject clausal function.

4 Pronouns as coordinators

Australian languages are well-known for the use of 3rd non-singular pronouns as coordinators. Blake (1989:91) lists “the use of a word or clitic meaning ‘they’ or ‘they two’ or simply ‘two’” as one of the three basic coordination strategies in Australian languages. And Stassen (2000:16) finds that a concentration of cases in his sample that involve the grammaticalisation of coordinators from pronouns or other words meaning ‘two’ are found in the Australian-Papuan region.

Languages with this strategy include Arrernte (17), Ngandi (18), Tiwi (19), Kuuk Thaayorre, Kugu Nganhcara.³

- (17) *Augustine therre Duncan therre*
 Augustine two Duncan two
 ‘Augustine and Duncan’ (Wilkins 1989: 371)

³Although Smith and Johnson (2000: 434) provide the following as the basic schema for NP coordination in Kugu Nganhcara (with the pronoun “optionally” added before each conjunct) they provide no actual examples.

- (1) *pula X pula Y*
 3duNOM X 3duNOM Y
 X and Y

- (18) *rni-goyow-pula a-jinma-pula ba-bu-ydhi-ni*
 Ni-croc-and A-shark-and they-fought
 ‘The crocodile and the shark fought.’ (Heath 1978: 128)
- (19) *wuta Thapara Waijai*
 3PL Tapara Waijai
 ‘Tapara and Waijai’ (Osborne 1974: 72)

One issue is whether such grammaticalised coordinators retain their dual number specification – i.e. can they be used when there are more than two conjuncts? This seems to be possible in Ngandi, showing that *pula* has truly grammaticalised beyond its dual pronominal meaning:

- (20) ... *gu-yapan?* *gu-wangginy?*, *barrgu-yo-ngana*, *rni-ki-?*, *rna-ki-?*
 ... GU-two GU-one 3PL/GU-put.on-PR here there
gu-rawarra, *rni-ki-?* *rlurrungga?*, *rna-ki-?* *ngarni*, *gu-wolo-pula-yung*
 GU-EAST here middle there west GU-that-and-ABS
 ‘... Three of them– one they put here, there on the east side; another here in the middle; another there on the west side, that also’ (Ngandi, Heath 1978: 207)

Progressive Pronominal Inclusion

Heath (2004) reports the phenomenon of progressive pronominal inclusion for Nunggubuyu, providing only the following example:

- (21) *nu:-ya-nggi*, *wara-mij-bura:yung*, *F ni-ni* *mari G*
 1EXCL-go-INFL PL-PL-children F we(EX.MA.DU) and G
nu-ru, *nuru-gu-gubadha-ngi*
 we(EX.PL), 1EX.PL-RDP-walkabout-INFL
 ‘We (=men) went, along with (our) children, F and G and me, we went walkabout.’ (Heath 2004: 81)

He describes this constructions as follows: “the gloss ‘F and G and me’, denoting the adult men (F and G are personal names), corresponds to a Nunggubuyu sequence ‘F 1Ex.Ma.Du (= the two of us), *mari G* 1Ex.PL (= the 3+ plurality of us)’. Instead of a running list of the type ‘F&G&me’, the Nungguubuyu sequence is built up piece by piece, the pronominal sum being recomputed at each point (‘F we-Du, moreover G we-Pl’)” (Heath 2004:82)

How common is this phenomenon? We have so far not found it mentioned anywhere else.

5 The Morphosyntax of Coordination

5.1 Interactions with other nominal morphology

For languages with coordinating affixes, an interesting question arises as to how these affixes interact with other nominal morphology, such as case marking. In some languages, coordinating affixes occur outside number and relational case morphology:

- (22) *Kuwarri kurrngal ngalyun-pa pirirri-pa partany-karrangu-pa.*
now many woman-CONJ manCONJ child-PL-CONJ
‘Now there is a big mob of women, men and children.’ (Nyangumarta, Sharp 2004: 156 ex. 4.163)
- (23) *Wanikinyi pulu ngurra-nga, yarrkal ya-nikinyi pulu*
stay-IMPF 3DU.SUB camp-LOC hunting go-IMPF 3DU.SUB
yukurru-pa pala partany kuyi-karti-pa mayi-karti.
dog-CONJ that child meat-ALL-CONJ vegetable.food-ALL
‘Those two stayed at the camp and went hunting; the dog and the child for meat and grain.’ (ex. 4.165)

Whereas, in other languages, coordinating affixes appear inside relational case morphology:

- (24) ... *gu-yapan? gu-wangginy?, barrgu-yo-ngana, rni-ki-?, rna-ki-?*
... GU-two GU-one 3PL/GU-put.on-PR here there
gu-rawarra, rni-ki-? rlurrungga?, rna-ki-? ngarni, gu-wolo-pula-yung
GU-EAST here middle there west GU-that-and-ABS
‘... Three of them– one they put here, there on the east side; another here in the middle; another there on the west side, that also.’ (Ngandi, Heath 1978: 207)
- (25) *yaba-nggu nyumbu-djada-nggu*
brother-ERG father-and-ERG
‘my brother and father’ (Djabugay, Patz 1991)
- (26) *ngunha marlpa ngatharntu-ku karnku-lku kurrjarta-ku*
that man 1sgGEN-ACC keep-PRES spear-ACC
warrkunti-muntu-ku.
boomerang-CONJ-ACC
‘That man is keeping my spear, and boomerang.’ (Panyjima, Dench 1991: 153)

In Martuthunira, the coordinating suffix usually occurs inside relational case morphology (27), but can sometimes follow the case marker (28). There is apparently no semantic or syntactic difference associated with these two possibilities.

- (27) *Ngayu ngawurri-ma-rninyji puwara-thurti-i*
 1SG.NOM mixed-CAUS-FUT charcoal-CONJ-ACC
martarr-thurti-i
 red.ochre-CONJ-ACC
 ‘I’ll mix up charcoal and red ochre.’ (Martuthunira, Dench 1995:199,
 ex. 8.32)
- (28) *Ngayu kampa-lalha thanuwa-ngara-a wuruma-l.yarra*
 1SG.NOM cook.PAST vegetable.food-PL-ACC do.for-CTEMP
pawulu-ngara-a-thurti kanyara-nagara-a-thurti
 child-PL-ACC-CONJ adult-PL-ACC-CONJ
 I cooked food for the children and the adults. (ibid, ex. 8.33)

These various possibilities have potentially interesting implications for syntactic models of case morphology and its interaction with morphosyntactic structure.

5.2 Discontinuous coordination

A number of languages allow discontinuous coordinated NP structures. All of the examples we have found so far involve extraposition of one coordinand to the end of the clause – a possibility that Haspelmath (2004) reports as being relatively common cross-linguistically. It would be interesting to know whether other discontinuous structures are also possible in any of these (or other) languages.

- (29) ... *kun-kerri ma-ngi kun-yerrng*
 ... IV-cooking.stone 3/3P.get-PI IV-wood
 ‘... he got cooking stones, and firewood.’ (Bininj Gun-Wok, Evans 2003:
 248, ex. 6.64)
- (30) *Ma-wurndan? balaka nyarrma-ga-ma-ngi, ma-berge?-bula*
 VEG-black.plum first we.got.it VEG-green.plum-AND
 ‘We got black plums and green plums.’ (Ngandi, Heath 1978: 128)
- (31) *Kintja-(ng)ku=yana intji-mi-ngi-yu ntiya-(ng)ku tjipa-yi*
 female-ERG=and pelt-FUT-me-they.DU stone-ERG this-ERG
kurlayingu-thu.
 male-ERG
 ‘The girl and boy will both pelt me with stones.’ (Kalkatungu, Blake
 2001: 423, ex. 17)

5.3 Coordination and agreement

A lot of recent theoretical work on coordination has focussed on patterns of agreement in coordination structures. Cross-linguistically languages differ in

how they resolve conflicting person, number, and/or gender features in conjuncts. Moreover, a single language may use one strategy for noun-modifier agreement, and another for verb agreement. For example, in English, verbal agreement is with the combined number of the coordinated subject NP (resolution):

(32) A boy and girl *are*/**is* waiting for a bus.

but plural determiner agreement in this context is ungrammatical:

(33) This/*these boy and girl are waiting for a bus.

Resolution is probably the predominant pattern cross-linguistically, especially for verbal agreement, but single conjunct agreement is also well attested. Normally agreement is with the closest conjunct, as in Welsh (Sadler 1999, 2003) and Swahili (Marten 2000):

(34) *Gwelais i a'm brawd ein hunain.*

saw-1S 1S and-1S brother 1PL self

'I and my brother saw ourselves.' (Welsh)

(35) *Roedd Wyn yn siarad amdanat ti a Siôn.*

was.3S Wyn PROG speak about-2S 2S and Siôn

'Wyn was talking about you and Siôn.'

(36) *Mguu wa meza na kiti ki-mevunjika.*

3.leg of table and 7.chair 7-be broken

'The leg of the table and the chair are broken.' (Swahili) (Marten 2000 from Bokamba 1985)

but agreement can also be with the furthest conjunct in some languages:

(37) *Groza in strah je prevzela uso*

horror(FEM.SG) and fear(MASC.SG) has seized(FEM.SG) the-whole
vas.

village

'Horror and fear have seized the whole village.' (Slovene, Corbett 1983: 180)

(38) *knjige in peresa so se poražile.*

book.FEM.PL and pen.NEUT.PL are selves got dear.FEM.PL

'Books and pens have become more expensive.' (Slovene, Corbett 1988: 26)

In some languages, the strategy is dependent on word order. In the following Brazilian Portuguese examples, verbal agreement is determined by resolution in post-subject position (39), and by nearest conjunct agreement in pre-subject position (40 and 41). Note that the second two examples have two verbs – one in each position – each showing a different pattern of agreement.

- (39) *As meninas e eu saímos/*saíram.*
 the girls and I left.1PL/*left.3PL
 ‘The girls and I left.’ (Brazilian Portuguese, Munn 1999: 655)
- (40) *Foram as meninas e eu que compramos as flores*
 were.3PL the girls and I who bought.1PL the flowers
 ‘It was the girls and I who bought the flowers.’ (ibid: 655)
- (41) *Fui eu e as meninas que compramos as flores.*
 was.1SG I and the girls who bought.1PL the flowers
 ‘It was me and the girls who bought the flowers.’ (ibid: 655)

Closest conjunct agreement can also be found NP-internally – in noun-modifier agreement. In Brazilian Portuguese, gender agreement on modifiers is conditioned by the closest conjunct:

- (42) *Os mitos e lendas brasileiras*
 the.MPL myth.MPL and legend.FPL brazilian.FPL
 ‘the brazilian myths and legends’

Note, however, that number agreement is always conditioned by resolution. In the following example, the adjective ‘coloured’ shows resolved plural number, but feminine gender via closest conjunct agreement!!

- (43) *o teto e a parede coloridas*
 the.MS ceiling.MS and the.FS wall.FS coloured.FPL
 the coloured ceiling and wall

These examples show the potential complexity in the interaction between agreement and coordination. However, unfortunately, we have virtually no information of this type for Australian languages. For example, very few grammars give information about number and/or gender agreement patterns of a modifier with conjoined nominals (e.g. ‘my meat and tucker’, ‘your spear and boomerang’, ‘those men and women’). Notable exceptions include Nunggubuyu for which Heath (1978b: 543) lists detailed resolution patterns, and Diyari, for which Austin (1981: 230) reports that definite conjoined NPs are preceded by a pronoun (functioning as determiner) showing resolved number agreement:

- (44) *pula mathari ya wilha ngurra-nhi ngama-yi.*
 3DU.S man(ABS) and woman(ABS) camp-LOC sit-PRES
 ‘The man and the woman are sitting in the camp.’ (Diyari, Austin 1981: 230)

Diyari is thus different to English in this respect, which would have a singular determiner in this context (see above).

The only relevant examples I have from Wambaya are suggestive of nearest conjunct agreement. In the following note the masculine singular agreement on the demonstrative where resolution might have produced dual number.

- (45) *Ini ilirri gagama gurl gaj-ba,*
 this.I.SG.ACC blood.I.ACC guts.III.ACC DU.IMP eat-FUT
 ‘You two eat this blood and guts.’ (Wambaya, Nordlinger 1998: 229)

Without further examples, however, it’s impossible to tell whether the gender agreement here is with the nearest conjunct, or simply the resolved value for masculine plus another gender. It’s also possible that *ilirri gagama* is an example of natural coordination, which may not trigger dual number agreement.

Verbal agreement is conditioned by resolution in Wambaya:

- (46) *Ngarringga wurlu-ngga alaji gambarda wardangarri.*
 take.from 3DU-RR-NF boyI.(ACC) sun.II.(NOM) moon.II.(NOM)
 ‘They took each other’s child, the son and the moon.’ (Nordlinger 1998: 239)

6 Summary of issues to be further explored

- For languages with more than one NP-coordination strategy, is there evidence for distinctions based on natural/accidental coordination, or animacy, or something else?
- Do we find examples of the supposedly unattested [co A] [B] structure (e.g. Tiwi)?
- How are coordination structures to be distinguished from other similar constructions in individual languages (e.g. Singer)
- How widespread is Heath’s ‘progressive pronominal inclusion’?
- What agreement patterns do we find in coordination structures in different languages?
- How do NP-coordination patterns differ from clausal coordination?
- What about disjunction – reported for only a handful of Australian languages?
- and more ...