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A typological study of noun phrase structures in Australian languages

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door

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To my parents

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Abbreviations

Abbreviations used in glosses

1	first person	CONTR	contrastive focus
2	second person	CRD	cardinal pronoun
3	third person	DAT	dative
I-VII	noun classes	DECL	declarative
A	agent-like argument of canonical transitive verb	DEF	definite
		DEM	demonstrative
ABL	ablative	DIST	distal
ABS	absolutive	DISTR	distributive/distributed
ACC	accusative	DM	demonstrative marker
ACT	actual	DO	direct object
ADV	adverbial	DU	dual
AFF	affective	DUB	dubitative
ALL	allative	DYNM	dynamic
AMBIPH	ambiphoric pronoun	EMPH	emphatic
AN	animate	ERG	ergative
ANA	anaphoric	EXCL	exclusive
ANAPH	anaphoric pronoun	F	feminine
ANTIP	antipassive	FOC	focus
ASS	associative	FOC/TENS	focus/tense
AUG	augmented	FUT	future
AUX	auxiliary	GEN	genitive
CAUS	causative	GENRL	general
CL	class marker	GO&	associated motion
CLF	classifier	GO&DO	'go to a place and do verb action'
CTEMP	contemporaneous		
COLL	collective	H	higher object
COM	comitative	HAB	habitual
COMPL	complete / completive	HUM	human
CONJ	conjunction	IDENTIF	identifiable
CONT	continuous / continuative	IMM	immediate clitic
		IMMPST	immediate past

IMP	imperative	P	patient-like argument of canonical transitive verb
INCH	inchoative		
INCL	inclusive	PFV	perfective
INDF	indefinite	PL	plural
INF	infinitive	POSS	possessive
INS	instrumental	POSSD	possessed
INTENS	intensifier	POT	potential
INTENTV	intentive mood	PRED	predicative
IO	indirect object	PRF	perfect
IPFV	imperfective	PRS	present
IRR	irrealis	PRO	prominence clitic
ITER	iterative	PROG	progressive
KIN	kin suffix	PROP	proprietive
KPL	kinship plural	PROX	proximal/proximate
L.ALL	local allative	PST	past
LA	lower animate	PT	potent case inflection
LIG	possessor ligative	PTCP	participle
LK	linker	PUNC	punctual
LL	land gender	PURP	purposive
LOC	locative	QUAL	quality nominalizer
M	masculine	R/A	realis/assertive
M-	modal case	RECPST	recent past
MED	medial	RDP	reduplication
MI	middle	REAL	realis
MIN	minimal	RECP	reciprocal
N	neuter	REF	contextual deictic
Nw	w-class neuter gender	REL	relative / relativiser
N-	non- (e.g. NSG non-singular, NPST non-past)	REM	remote
		REMPST	remote past
NEG	negation / negative	REP	repetition
NMLZR	nominalizer / nominalization	S	single argument of canonical intransitive verb
NOM	nominative		
NVIS	non-visible	SER	serial
OBJ	object	SG	singular
OBL	oblique	SMBL	semblative
ORIG	origin	SP.PROX	speaker proximate

SR	same referent	VBLZR	verbalizer
SS	same subject	VEG	vegetable food
TEL	telic	VE	vegetable noun class
TEXD	text deictic	VSM	verbal stem marker
TOP	topic	^	focal accent
TR	transitive / transitivity morpheme	~	separates reduplicated items
UA	unit augmented	>	X > Y: X is agent-like, Y
UNSP	unspecified tense		is patient-like argument
VCL	verb class marker		of transitive verb

Other labels (esp. in templates and tables):

Parts of speech

art	article
dem	demonstrative
inal.poss	inalienable possessor
indef	indefinite
interr	interrogative
loc	locational nominal
log	logical nominal
num	numeral
poss	possessive pronoun
PR	possessor
pron	personal pronoun
quant	quantifying nominal

Template

G	template provided in grammar
W	word order described in grammar, put in template-format by me
E	template based on examples

Other

NP	noun phrase
NE	nominal expression

Introduction

1. Aims and overview

The aim of this dissertation is to study noun phrase (NP) structures in Australian languages from a typological perspective, using data from a sample of 100 languages. In the domain of NP structure, Australian languages are probably best known in the typological literature for two characteristics: extensive systems of nominal classification, and non-configurationality. The classic reference on nominal classification in Australia is Dixon (1982), who proposed a basic morphosyntactic distinction between two types of classification, viz. noun class systems and classifier systems. Both types mark nominals as belonging to (largely) semantically based classes, but they differ in their morphosyntactic implementation, as well as their degree of semantic motivation. The first type, noun classes or gender systems, was quite well-known from the study of Indo-European and African languages, but the second type, noun classifiers, had not previously been established as a separate category (Dixon 1982: 159-160, 211-212).[1] The two types are illustrated below in examples from Dyirbal and Yidiny, demonstrating some of the features in which the two systems differ. Example (1) from Dyirbal shows that noun classes are marked by bound forms in agreement patterns, in this case on the demonstratives modifying the nouns, which are marked for one of the four classes in the language (glossed with Roman numerals I-IV). Example (2) from Yidiny shows how classifiers are not marked in agreement patterns, but by free forms juxtaposed to nouns, in this case generic nouns like 'vegetable food' and 'person' classifying the following specific nominals 'yam' and 'girl'.

(1)   Dyirbal (Dixon 1982: 161)
        bala   diban   ya-ŋgu-n   yibi-ŋgu   buran
        there.ABS.IV stone.ABS   here-ERG-II woman-ERG   look.at
        'The woman here is looking at the stone there.'

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[1] A third type of classification, viz. numeral classifiers, was again quite well-known from Asian languages (Dixon 1982: 211). This type does not occur in Australian languages.

(2)   Yidiny (Dixon 1982: 185)

mayi   *jimirr*   *bama-al*   *yaburu-ŋgu*   *julaal*
vegetable.ABS   yam.ABS   person-ERG   girl-ERG   dig.PST
'The person girl dug up the vegetable yam.'

Dixon (1982) was followed by a whole range of studies on nominal classification in Australian languages (e.g. Dixon 1986; Blake 1987: 94; Johnson 1988; Sands 1995; Harvey & Reid 1997; Wilkins 2000; Singer 2016). Questions addressed in these studies include the degree of grammaticalisation in the system, the semantics of noun classes, and the syntactic analysis of noun classifiers. Aspects of 'Australian-style' classification, including Dixon's basic distinction, have been picked up in the wider typological literature (e.g. Grinevald 2000; Aikhenvald 2003; Corbett 2007: 253-258; Seifart 2010), and are now part of the standard analysis of classification systems (although obviously the basic distinction has not remained unquestioned, see for instance Singer [2016]).

The other aspect of NP structure for which Australian languages are renowned is syntactic flexibility, with free word order and the availability of discontinuous NPs; the classic references here are Blake (1983), Hale (1983) and Heath (1986). This is illustrated in an often-quoted set of examples from Kalkatungu in (3), which shows how different word orders are allowed in the NP (e.g. 3a, d, f) and how different elements can be 'split off' from the rest of the NP (e.g. 3b, c, e).

(3)   Kalkatungu (Blake 1983: 45; cited in Nordlinger 2014: 229)
        a. ***cipa-yi*** ***ṭuku-yu***   ***yaun-tu***   *yaɲi*   *icayi*
           this-ERG   dog-ERG   big-ERG   white.man   bite
           'This big dog bit/bites the white man.'
        b. ***cipa-yi ṭuku-yu*** *yaɲi icayi* ***yaun-tu***
        c. ***ṭuku-yu cipa-yi*** *icayi yaɲi* ***yaun-tu***
        d. ***yaun-tu cipa-yi ṭuku-yu*** *icayi yaɲi*
        e. ***cipa-yi*** *icayi yaɲi* ***ṭuku-yu yaun-tu***
        f. *yaɲi icayi* ***cipa-yi yaun-tu ṭuku-yu***

Such characteristics have played a prominent role in the development of the theoretical notion of 'non-configurationality', which has also found its way into the general theoretical and typological literature (e.g. Jelinek [1984]; the various papers in Marácz & Muysken [1989]; Austin & Bresnan [1996]; Baker [2001]; Rijkhoff [2002:

19-22]; Pensalfini [2004]; see also Nordlinger [2014: 227-232, 237-241] for an overview). These features have also led to the idea that several Australian languages may lack phrasal structure altogether in the nominal domain (e.g. Blake 1983; Heath 1984, 1986; Harvey 1992; Evans 2003a: 227-234; Rijkhoff 2002: 19-22). However, this idea is quite problematic in several ways. One is that much of the general literature has a relatively limited empirical basis, usually focusing on the same handful of languages. Another is that individual grammars show a more mixed picture: some confirm the absence of 'classic' NP structure (e.g. Evans [2003a: 227-234] on Bininj Gun-wok or Harvey [2001: 112] on Limilngan), while others provide strong evidence in favour of phrasal structure in the nominal domain (e.g. Gaby [2006: 277-278] on Kuuk Thaayorre or Nordlinger [1998: 131] on Wambaya). Additionally, there are studies which provide alternative functional accounts of phenomena that are traditionally used as arguments against constituency, like discontinuity or phrase fracturing (e.g. McGregor 1989, 1990, 1997; Schultze-Berndt & Simard 2012).

Other aspects of NP structure have received less attention in the Australianist literature, although there are some studies on topics like the status of adjectives as a separate word class (e.g. Dixon 1982, Dixon 2002: 67; also discussed in many individual grammars), number marking (e.g. Dixon 2002: 77; McGregor 2004: 153-154), or the architecture of numeral systems (Bowern & Zentz 2012). In addition, there are some topics that have received little attention in general studies, and are not studied in great detail in reference grammars, like quantifiers in the domain of number, or the entire domain of determination, at least in its syntactic aspects. Thus, our current knowledge of NP structures in Australian languages shows quite a few gaps: there is a lot of work on classification, there are many general claims about NP constituency, but these remain largely unsubstantiated, there is some work on number marking and adjectives, and there is little general work on quantifiers and determiners.

This dissertation tries to fill some of the gaps in the literature by presenting a general analysis of NP structure in Australian languages, with a broad empirical basis. I use a sample of 100 Australian languages, which represents about 40% of all Australian languages at first contact and about 65% of all Australian languages for which relatively detailed descriptions are available (see section 2 below for details). I develop this analysis in two main parts, each with a different aim and focus. The first part of the dissertation presents a general survey of NP features (including nominal classification as briefly introduced above). In this survey, I try to develop a synthesis of the available Australianist literature, in which I test some of the ideas from the

literature on the languages of my sample, and show where Australian languages stand in relation to other languages in the world. The organisation of the survey is inspired by functionalist literature on NP structure, most prominently Rijkhoff (2002), and covers the broad functional domains of classification, qualification, quantification and determination, as well as the overarching question of NP constituency. These domains are to be understood in a broad sense; they are a heuristic tool for organising the data in the survey, rather than a theory of NP structure in Australian languages. In practical terms, the survey consists of three chapters, with domains grouped together on the basis of how well they have been described in the literature. Chapter 1 deals with nominal classification, which as mentioned above is the best-described aspect of NP structure for Australian languages. Chapter 2 discusses the domains of qualification and quantification, which have received some attention in the literature, but not to the same extent as classification. The section on qualification includes, for instance, a discussion of the status of adjectives as a separate word class, and some comments on alternative means of modification like compounding, where qualifiers are integrated in the morphological structure of nouns, as illustrated for Bininj Gun-wok in (4). The section on quantification includes an overview of number marking, which is overall relatively limited for head nouns, but is found more often on the modifiers within the NP, as well as outside the NP; this is illustrated in (5) from Dalabon, where the head noun remains unmarked for number, but the demonstrative as well as the verb have number marking.

(4)   Bininj Gun-wok (Evans 2003a: 178)

      Man-wodj-kare   *kani-dorrorrke.*

      VE-log-old   12UA-drag.NPST

      'Let's drag the hollow log.'

(5)   Dalabon (Cutfield 2011: 123)

      [kanh-ngong   *middjinri]*   *njel=**bula**-h-yeni-nj*   *wulad*

      DEM:IDENTIF-all   missionary   1PL=3PL>O-R/A-accompany-PST.IPFV   all

      'all those missionaries used to stay with us'

Chapter 3 introduces the domains of determination and NP constituency, which are most poorly understood, due to a general lack of study in the case of determination, and a lack of testing of general claims in the case of constituency.

The second part of the dissertation then takes up the last two aspects, determination and NP constituency, for more detailed analysis. Chapter 4 deals with

the question of NP constituency, which as discussed above is a rather problematic issue in the available literature. On the basis of my sample, I show that the idea that Australian languages tend to lack clear phrasal structure is over-stated. I suggest an alternative approach to the question of NP constituency, and argue that it is more interesting to typologise languages on the basis of where and how they allow phrasal structure rather than on the basis of a simple yes-no answer to the question of NP constituency. This alternative approach is followed up in an analysis of discontinuous structures. Chapter 5, finally, investigates the domain of NP determination, which is overall the least well-studied aspect of NP structure for Australian languages. Within this domain, I focus on the syntactic status of determining elements. Australian languages generally lack 'classic' determiner features, like obligatory use in particular (e.g. definite) contexts or a restriction to one determiner per NP. In Ungarinyin, for instance, NPs need not include an element that marks definiteness, specificity or the like, as illustrated in (6a), where the noun *ari* 'man' is used without a determiner and can still be interpreted as definite. When determining elements are included, however, they can easily co-occur, as illustrated in (6b), where both an 'ambiphoric' and an anaphoric pronoun modify the head noun.

(6)   Ungarinyin (Spronck 2015: 166)

a. ***ari***   *bern* a_1-y_2i   *arrangu::*   *wuran-ra*
   man   climb.up   3MSG-be   on.top   tree-LOC
   'The man climbs all the way up the tree'

b. ***andu***   ***jirri***   ***yila***   *nongarrij=karra* a_1-*ma*
   M.AMBIPH   M.ANAPH   child   run.away=MAYBE   3MSG-do
   'He, this kid might run away'

I show that there is good evidence to identify a determiner slot in approximately half of the languages of the sample, and I discuss which types of elements tend to occur in these slots.

2. Data and methods

I round off this introduction with some methodological matters. Section 2.1 describes the sample of languages used in this thesis, and provides more details on how the sample was compiled. Section 2.2 deals with the collection of data. It comments on the delineation of the data (section 2.2.1), discusses some difficulties in working with

secondary source materials (section 2.2.2), comments on the use and representation of examples and structural templates, and introduces some terminological conventions (section 2.2.3). Section 2.3 discusses the maps that are used throughout the thesis, including instructions on how to use them, as well as some practical comments on how they were made.

2.1.   Language sample

Research for this thesis is based on a sample of 100 Australian languages, which is partly based on convenience and partly on representativeness. The sample is primarily a convenience sample, in two ways: I included only languages for which I could easily access good-quality grammars and other materials,[2] and whenever there was a choice, I favoured languages with more detailed descriptions. It is also partly a representative sample, however, in the sense that it tries to take into account the genetic and areal diversity of Australian languages, covering as many language families and subgroups as possible, and as many regions as possible. Given that only a bit over half of Australian languages have detailed grammatical descriptions, however, proportions are not based on strict measures like Rijkhoff & Bakker's (1998) Diversity Value, but on the convenience factor of availability of materials.

In the sample, there are 65 languages representing the large Pama-Nyungan family and 35 representing the various so-called 'non-Pama-Nyungan' families. The large proportion of Pama-Nyungan languages is due to the fact that this family not only includes about two thirds of all Australian languages, but also covers almost 90% of the Australian continent (these counts are based on Bowern & Atkinson [2012: 817]). Areally, I have tried to include Pama-Nyungan languages from all over the continent, but the sample contains relatively fewer languages from the regions in the south and southeast that were settled first, for which fewer good descriptions are available (see Dixon 2002: 1-3). Genetically, the internal structure of Pama-Nyungan remains uncertain. There is a consensus on many lower-level groupings, but higher-level groupings are often subject of discussion. The most recent proposal can be found in Bowern & Atkinson (2012). Their highest level of classification shows four main subgroups of Pama-Nyungan, viz. Northern, South-Eastern, Central and Western Pama-Nyungan (these are also mentioned in table 1 below). The sample represents

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[2] This explains, for instance, why there is a proportionally higher representation of Cape York languages in the sample, for which my supervisor provided access to materials.

most of the lower-level groupings, but again this is subject to the constraints of a convenience sample, viz. the availability of good-quality grammatical descriptions. The languages that do not belong to the Pama-Nyungan family are traditionally labelled collectively as non-Pama-Nyungan, but in fact they include about 24 distinct families and isolates (based on the classification of Evans (2003b)).[3] Almost all of these are represented in my sample,[4] and larger families, like Gunwinyguan, are represented by more than one language; as mentioned, this is largely determined by convenience factors rather than strict methods of calculation.

Overall, the sample represents about 40% of all languages spoken at first contact, on conservative counts (like Dixon 2002: 5-7). As already mentioned, however, not all languages have detailed grammars. If we take the number of languages with detailed descriptions available, the sample represents about 65% of available data.[5]

An overview of the sample can be found in table 1, showing the genetic classification and the sources used for each language. General databases like OZBIB (Carrington & Triffitt 1999; Triffitt 2005; OZBIB) and Glottolog (Hammarström et al. 2016) can be consulted for further sources on individual languages.

Language name	Genetic status		References
	Pama-Nyungan (PN)		
	Lower-level subgroup	*Bowern & Atkinson (2012)*	
Kala Lagaw Ya	(unclear)	Northern PN	Ford & Ober (1987, 1991), Stirling (2008)
Uradhi	Northern Paman	Northern PN	Crowley (1983)
Anguthimri	Northern Paman	Northern PN	Crowley (1981)
Umpila/Kuuku Ya'u	Middle Paman	Northern PN	Hill (2015, p.c.), Thompson (1988)
Kugu Nganhcara	Middle Paman	Northern PN	Smith & Johnson (2000)
Umpithamu	Middle Paman	Northern PN	Verstraete (2010, p.c.)

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[3] Enindhilyakwa, which is traditionally analysed as an isolate (Evans 2003b: 2, 13), has recently been reclassified as Gunwinyguan (van Egmond 2012).

[4] The only three which are not represented are Umbugarla/Ngumbur, Larrakiya and Kungarakany. Their genetic status is uncertain (Evans 2003b: 14).

[5] This is based on the number of languages marked as having a 'grammar' in Hammarström's (2014) overview of documentation of Australian languages (i.e. not a 'grammar sketch').

Umbuygamu	Lamalamic	Northern PN	Ogilvie (1994), Sommer (1976, 1998)
Rimanggudinhma	Lamalamic	Northern PN	Godman (1993)
Kuuk Thaayorre	Southwest Paman	Northern PN	Gaby (2006, p.c.)
Oykangand	Southwest Paman	Northern PN	Hamilton (1996), Sommer (1970, 2006)
Yir Yoront	Southwest Paman	Northern PN	Alpher (1973, 1991)
Guugu Yimidhirr	Yimidhirr-Yalanji-Yidinic	Northern PN	Haviland (1979)
Kuku Yalanji	Yimidhirr-Yalanji-Yidinic	Northern PN	Patz (2002)
Yidiny	Yimidhirr-Yalanji-Yidinic	Northern PN	Dixon (1977, 1991)
Djabugay	Yimidhirr-Yalanji-Yidinic	Northern PN	Patz (1991)
Dyirbal	Dyirbal	Northern PN	Dixon (1972)
Warrongo	Maric	Northern PN	Tsunoda (2011, p.c.)
Margany/Gunya	Maric	Northern PN	Breen (1981a)
Biri	Maric	Northern PN	Terrill (1998)
Dharumbal	Dharumbal	Northern PN	Terrill (2002)
Yalarnnga	Kalkatungic	Northern PN	Breen & Blake (2007), Blake (p.c.)
Mayi	Mayi	Northern PN	Breen (1981b)
Duungidjawu	Waka-Kabi	South-Eastern PN	Kite & Wurm (2004)
Gumbaynggir	Gumbaynggir	South-Eastern PN	Eades (1979)
Bundjalung	Bandjalangic	South-Eastern PN	Sharpe (2005), Cunningham (1969)
Yuwaalaraay	Central New South Wales	South-Eastern PN	Williams (1980), Giacon (2014, p.c.)
Ngiyambaa	Central New South Wales	South-Eastern PN	Donaldson (1980)
Muruwari	Muruwari	South-Eastern PN	Oates (1988)
Gathang	Yuin-Kuri	South-Eastern PN	Lissarrague (2010)

Dharrawal/ Dharumba/ Dhurga/ Djirringanj	Yuin-Kuri	South-Eastern PN	Besold (2012)
Wathawurrung	Kulin	South-Eastern PN	Blake (1998 ed.)
Mathi-Mathi /Letyi-Letyi/ Wati-Wati	Kulin	South-Eastern PN	Blake et al. (2011), Morey (p.c.)
Yorta Yorta	Yorta Yorta	South-Eastern PN	Bowe & Morey (1999), Morey (p.c.)
Bunganditj	Bunganditj	South-Eastern PN	Blake (2003, p.c.)
Ngarrindjeri	Lower Murray	South-Eastern PN	Bannister (2004), Yallop (1975)
Arabana/ Wangkangurru	Karnic	Central PN	Hercus (1994)
Pitta-Pitta	Karnic	Central PN	Blake (1979b, p.c.)
Diyari	Karnic	Central PN	Austin (1981, 2011)
Yandruwandha (Innamincka)	Karnic	Central PN	Breen (2004a, b)
Paakantyi	Paakantyi	Central PN	Hercus (1982)
Atynyamathanha	Thura-Yura	Central PN	Schebeck (1974)
Wirangu	Thura-Yura	Central PN	Hercus (1999)
Alyawarra	Arandic	Central PN	Yallop (1977)
Arrernte (Mparntwe)	Arandic	Central PN	Wilkins (1989)
Warumungu	Ngumpin-Yapa	Western PN	Simpson (1998, 2002), Simpson & Heath (ms), Capell (1953)
Warlpiri	Ngumpin-Yapa	Western PN	Hale (1995), Hale et al. (1995), Nash (1980), Simpson (1983), Swartz (1982)
Bilinarra	Ngumpin-Yapa	Western PN	Meakins & Nordlinger (2014, p.c.)

Jaru	Ngumpin-Yapa	Western PN	Tsunoda (1981, p.c.), Blythe (p.c.)
Walmajarri	Ngumpin-Yapa	Western PN	Hudson (1978), Hudson & Richards (1984), Richards (1979)
Nyangumarta	Marrngu	Western PN	Sharp (2004)
Karajarri	Marrngu	Western PN	McKelson (1989), Sands (1989)
Yankunytjatjara	Wati	Western PN	Goddard (1985)
Wangkajunga	Wati	Western PN	Jones (2011)
Martuthunira	Ngayarta	Western PN	Dench (1994)
Yindjibarndi	Ngayarta	Western PN	Wordick (1982)
Panyjima	Ngayarta	Western PN	Dench (1991)
Tharrgari	Mantharta	Western PN	Klokeid (1969)
Wajarri	Kartu	Western PN	Douglas (1981), Marmion (1996)
Yingkarta	Kartu	Western PN	Dench (1998)
Nhanda	Nhanda	Western PN	Blevins (2001)
Nyungar	Nyungar	Western PN	Douglas (1976)
Ritharngu	Yolngu	Western PN	Heath (1980)
Dhuwal (Djapu/ Djambarrpuyngu)	Yolngu	Western PN	Morphy (1983), Wilkinson (1991), Jepson (p.c.)
Djinang/Djinba	Yolngu	Western PN	Waters (1989)
Yanyuwa	Warluwaric	Western PN	Kirton (1971), Kirton & Charlie (1996), Bradley (1992)
	non-Pama-Nyungan		
Kayardild	Tangkic		Evans (1995), Round (2013, p.c.)
Lardil	Tangkic		Klokeid (1976)
Garrwa	Garrwan		Mushin (2012, p.c.)

Marra	Marran	Heath (1981), Dickson (p.c.)
Alawa	Marran	Sharpe (1972)
Mangarrayi	Marran	Merlan (1989)
Wambaya	Mindi	Nordlinger (1998, p.c.)
Jingulu	Mindi	Pensalfini (2003)
Jaminjung	Mindi	Schultze-Berndt (2000, p.c.)
Emmi	Western Daly	Ford (1998)
Marrithiyel	Western Daly	Green (1989, 1997)
Matngele	Eastern Daly	Zandvoort (1999)
Ngan'gityemerri/ Ngan'gikurunggurr	Southern Daly	Reid (1990, 1997)
Malakmalak	Northern Daly	Birk (1976), Tryon (1974), Hoffmann (p.c.)
Wadjiginy (Bachamal)	Anson Bay	Ford (1990), Tryon (1974)
Wardaman	Wardaman/ Wagiman	Merlan (1994)
Gaagudju	Gaagudju	Harvey (2002)
Limilngan	Limilngan	Harvey (2001)
Tiwi	Tiwi	Lee (1987)
Giimbiyu	Giimbiyu	Campbell (2006)
Warray	Gunwinyguan	Harvey (1986, ms)
Rembarrnga	Gunwinyguan	McKay (1975), Saulwick (2003)
Enindhilyakwa	Gunwinyguan	Leeding (1989), van Egmond (2012, p.c.), Bednall (p.c.)
Bininj Gun-wok	Gunwinyguan	Evans (2003a)
Dalabon	Gunwinyguan	Cutfield (2011)
Burarra	Maningrida	Green (1987), Glasgow (1994), Carew (p.c.)
Ndjébbana	Maningrida	McKay (2000)

Mawng	Iwaidjan	Singer (2006, 2016, p.c.), Forrester (2015, p.c.)
Gooniyandi	Bunuban	McGregor (1990, p.c.)
Nyulnyul	Nyulnyulan	McGregor (2011, p.c.)
Bardi	Nyulnyulan	Bowern (2012a, p.c.)
Yawuru	Nyulnyulan	Hosokawa (1991)
Worrorra	Worrorran	Clendon (2000, 2014)
Ungarinyin	Worrorran	Rumsey (1982), Spronck (2015, p.c.)
Miriwung	Jarrakan	Kofod (1978)

Table 1: Overview of the sample

Map 1 below provides a geographic overview of the sample, showing the non-Pama-Nyungan languages in black (as mentioned above, this actually covers 21 different families), and the Pama-Nyungan languages blue.
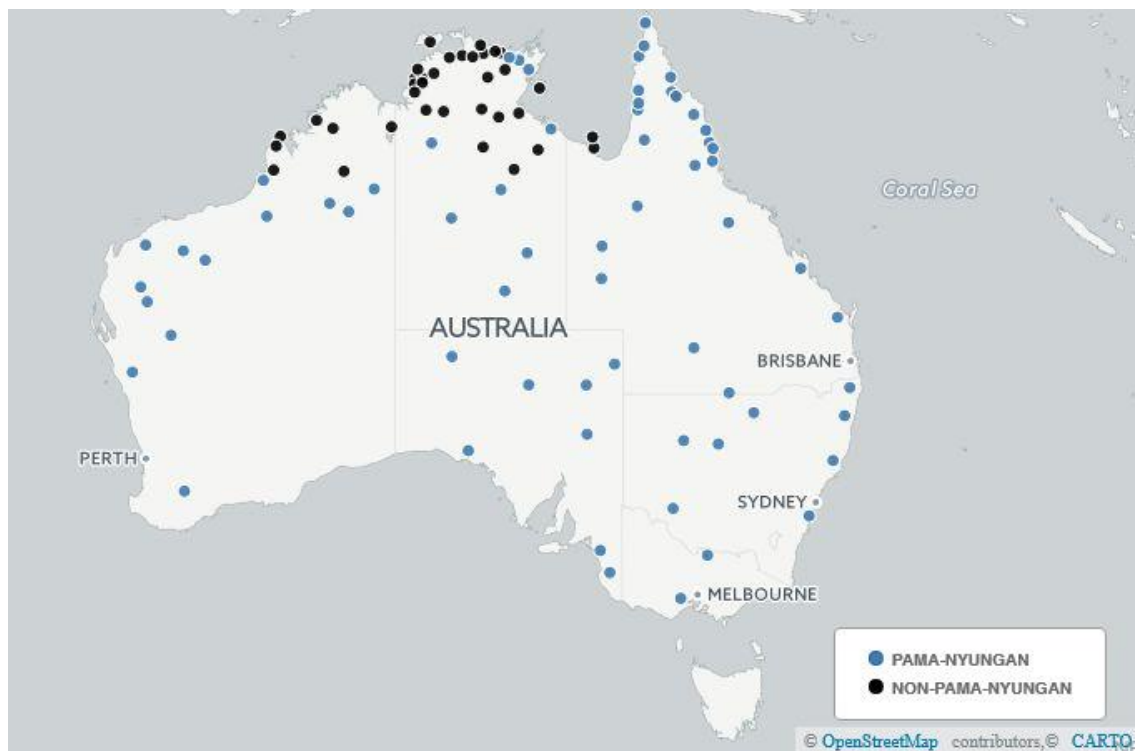
Map 1: Overview of the sample. For an online, dynamic version of this map, see: http://bit.ly/sample-overview.

Some further notes about the sample are in order here. A first note concerns the treatment of language varieties. As can be seen in the table above, some of the labels used for the sample languages consist of different varieties, like Margany/Gunya or Arabana/Wangkangurru. Since these varieties are often treated together in one grammatical description, I do not usually make a distinction between them in my analyses and treat them as one language. The same goes for Dhuwal, even though in this case, the two varieties are described in separate grammars (Djapu in Morphy [1983], and Djambarrpuyngu in Wilkinson [1991]). The situation is different for Yankunytjatjara and Wangkajunga, which are treated as separate languages in this sample, even though they are both varieties of the Western Desert language. This is a well-known case of a dialect continuum, however, and Yankunytjatjara and Wangkajunga represent different dialectal groups, viz. the 'south-eastern' and the 'north-western' group respectively. These show quite a few linguistic differences (e.g. Jones 2011: 9-10, 11-22; Goddard 1985: 6-8), which warrant a treatment as separate languages for my purposes (see for instance chapter 4, tables 5-7 for differences in word order and locus of case marking in the NP; or chapter 1, section 3.1 for differences in generic-specific structures).

A second note concerns the orthography used for language names. Many Australian language names have several spelling variants (see Austlang [AUSTLANG] or Glottolog [Hammarström et al. 2016] for alternative names of individual languages). Where there is a choice, I use the form that is used in the most recent description of the language (e.g. I use *Enindhilyakwa* [van Egmond 2012] rather than *Aninindhilyakwa* [Leeding 1989]) or the one that represents the most recent consensus (e.g. I use *Jaru* instead of *Djaru*, and *Paakantyi* instead of *Bāgandji*). Otherwise, I use the language names as they are best known, and have not made any orthographic adjustments, except by replacing *ŋ* and *ɲ* with the more keyboard-friendly *ng* and *ny* respectively. Thus, I use *Dyirbal* instead of *Dyirrbal*, and *Gumbaynggir* instead of *Gumbaynggirr*. The orthography of examples is equally left as it is. More information about the orthographic conventions for individual languages can be found in their respective grammars.

2.2.   Data

2.2.1.   Delineation

The focus of this dissertation is on simple NPs with nominal heads, like the two NPs in (7), the first one with an adjective, demonstrative and third person pronoun modifying a head noun ('man'), and the second one with a combination of a generic ('game') and a specific noun ('kangaroo').

(7)   Arrernte (Mparntwe) (Wilkins 1989: 111)
        [Artwe   kngerre   nhenhe   re]   [kere   aherre]   tyerre-ke.
        man   big   this   3SG.A game   kangaroo shoot-PST.CONT
        'This big man shot a kangaroo.'

   In other words, there is a whole range of structures that I do not include in my analysis. For instance, I do not include NPs with pronominal heads. Complex NPs are also excluded, like NPs with other NPs embedded in them, as in (8), or inclusory constructions, as in (9), which consists of a non-singular pronoun and an element referring to a member of the group identified by this pronoun. For studies of these types of NPs, see, for instance, Dench & Evans (1988) and Singer (2001).

(8)   Yingkarta (Dench 1979; cited in Dench & Evans 1988: 8)
        ngatha   *mapara-nma-rni*   *kunta*   ***kartu-wu***   ***japurta-parri-yu.***
        1SG.NOM   bring-PST-HENCE   water   man-DAT   beard-PROP-DAT
        'I brought water for the man with a beard.'

(9)   Guugu Yimidhirr (Haviland 1979: 105; cited in Singer 2001: 35)
        Ngaliinh   ***Dyaagi-ngun***   *gambarr*   *balga-y*
        1DU.EXCL(NOM) <name>-ERG   pitch(ABS) make-PST
        'Jack and I made the pitch' (literally: we two, including Jack [DL])

2.2.2.   Data collection

The main source of data for this study is of course the grammatical descriptions available, as listed in the right-hand column in table 1 above. This has some well-known limitations, which are typical of any typological study. The most important limitation is the indirect approach, viz. the need to rely on other people's analyses and

on the information provided in the grammar. I have tried to make up for this in two ways. First, in addition to studying grammars I have also had the chance to discuss some questions with fieldworkers who have first-hand experience with some languages (see table 1 above and the Acknowledgements for more details). This has enriched the data as well as my interpretation of grammars in general. Second, I have always used both the description itself and any texts or other examples that accompany the description. Especially for grammars where the description of the NP is less detailed or seems to be based mostly on elicitation materials, I have browsed the texts and examples to add to the available information (though of course I have not done any detailed discourse analysis). Whenever I have done this, this is mentioned explicitly in the relevant tables that summarise my analysis of the sources. It should also be noted here that part of the examples in grammars are the result of elicitation work, which yield a different type of data than narratives or other types of natural speech. In several languages, for instance, the use of longer NPs (i.e. more than two or three words) is reported to be rare in natural speech (e.g. Cutfield [2011: 56] on Dalabon; Reid [1997: 167] on Ngan'gityemerri), and examples of longer NPs often seem to be more artificial. In general, I have tried to use all information available in the grammars, but whenever there is an issue with the quality of the data, I try to address this explicitly.

One of the consequences of this indirect approach is that not all languages can be categorised for all of the features studied, as some grammars provide limited information – or none at all – on a specific feature. When information is based solely on examples, this of course also has its limitations: it is especially difficult to prove that something is *not* there (e.g. an alternative word order or a type of number marking). This means that counts of the type 'X languages show number marking of type X' are often only approximate. This is especially the case for the counts in Part I of this thesis (the survey), for which the analysis is less detailed than in Part II.

2.2.3. Terminological and other conventions

In most of this dissertation, I use the term 'noun phrase' (NP) in a general functional sense, and not a syntactically precise one, except where constituency is itself the subject of the discussion. This is the case particularly in chapter 4, where I distinguish between NPs as nominal expressions that show evidence for constituency, and NEs (nominal expressions) as the general term for nominal elements that belong together

semantically, regardless of whether they show evidence for constituency. In this, I follow the terminological conventions used in Himmelmann (1997). Similarly, terms for word classes (like noun and adjective) are to be understood as comparative concepts (Haspelmath 2010) throughout the dissertation, except where they are the subject of discussion themselves (as in chapter 2, section 1).

Finally, a short comment is required on the representation of examples and templates of NP structures in the rest of this thesis. Examples are given in their original orthography, but glossing is mostly unified according to the Leipzig Glossing Rules (Comrie et al. [2015]; see Abbreviations for more details). In what follows, I occasionally also present templates for NP structures (especially in chapters 4 and 5). For this, I use the following conventions: (G) indicates that the template is provided as such in the grammar; (W) indicates that the grammar does not provide a template, but word orders are described explicitly in the grammar, and put in template format by me; (E) indicates that the template is based on examples throughout the grammar and texts. A combination of these is also possible, e.g. (W+E) indicates that the template is partly based on what is specified in the grammar and partly on examples (for instance, when the order of a particular modifier is not given by the author, I have checked the examples for this).

2.3. Maps

2.3.1. Using the maps

Throughout this thesis, I use maps to visualise the data and corresponding analyses. These maps basically include a data-point for each language of the sample, and further show how languages are categorised according to a particular feature.

The purpose of the maps is slightly different for the different parts of the thesis. The maps in the survey chapters (Part I) are mostly intended as a practical and efficient way to present data. In line with the set-up of these chapters, they are not meant to be exhaustive: they represent data that was available fairly directly in the grammars, without too much interference of my own analysis (see also above). The maps in Part II, by contrast, are a representation and visualisation of my own analysis, and they add significantly to the information found in the text and the corresponding tables. They are more exhaustive than the survey maps, and as such they can also be used to investigate areal and genetic patterns.

In practical terms, each map has two versions, an online and an offline one. The offline version is just an image inserted in the text. The online version is the more interesting one, as it is dynamic and allows the user to zoom in and to see extra information. Hovering over a language point reveals the language name, while clicking on a language point gives more information on certain features. For example, in the case of map 1 above, the information window shows more details about the genetic status of the language in question. All maps used in this thesis can be found via this webpage: http://dlouagie.carto.com/maps. Individual (shortened) links are provided with each map as well. All maps are publicly available.

2.3.2. Making the maps

The maps in this thesis have been created with the online mapmaking tool Carto, inspired by Gawne & Ring (2016). In Carto, I use Open Street Map ('Positron') as my basemap.[6]

Information on the location of the languages is based on Bowern's (2011) data set 'Centroid Coordinates for Australian languages'. For a few languages in the sample some additional choices had to be made. First, the data set consists of coordinates at the level of language varieties or dialects, while my sample is situated at the level of languages (see section 2.1). In other words, some languages of my sample have more than one set of coordinates (viz. one for each variety) in the data set. In such cases, I have used the coordinates of one variety only, so as to have one data-point per language. For example, Margany and Gunya are two dialects of the same language (Breen 1981a: 275), and are treated together in the grammatical description and in my analysis (see section 2.1). They are, however, represented by separate coordinates for each dialect in Bowern's file. I have only represented them by one set of coordinates on my maps, viz. those of Margany. Such choices do not pose a problem for the interpretation of the maps, as the aim is to provide a general visualisation of data and analyses, and multiple data-points would only create confusion. (Besides, the locations of the varieties are often very close to each other.) A second comment concerns two languages in the sample (Giimbiyu and Matngele) which do not have 'point' locations in the file, but 'area' locations (Bowern 2011: 'Polygon Coordinates for Australian languages'). This was resolved by taking the coordinates of a random point roughly

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[6] See https://carto.com.
Open Street Map is open data (see http://www.openstreetmap.org/copyright for more details).

in the middle of these areas. Finally, there are two languages in the sample, Rimanggudinhma and Umbuygamu, that do not seem to have coordinates available at all in the files. For these languages, I have used coordinates provided by Verstraete (p.c.), based on his fieldwork and archival work in the region.

Part I: Survey of NP features

Part I of this dissertation provides a survey of what we know about NPs and related expressions in Australian languages. My starting point is the available literature on Australian languages, but I try to further contextualise this in two ways. On the one hand, I link it back to the broader typological literature, so as to give an idea where Australian languages stand in relation to other languages in the world. On the other hand, I also test some of the ideas in the literature on the languages of my sample, so as to give an idea of the spread of specific features and constructions discussed in the literature. The aim of this part of the dissertation is to develop a consolidated account of the literature. This lays the groundwork for more detailed analysis in Part II, where I take up what I consider to be the most urgent questions to come out of the survey, viz. the question of NP constituency and the status of determining elements. Beyond this dissertation, I hope that the survey provided here can also stand on its own, to be used as a basis for further work by typologists and fieldworkers dealing with Australian languages.

The chapters in Part I are set up along basic functional lines, covering four broad functional domains, viz. classification, qualification, quantification and determination, as well as the overarching question of NP constituency. This organisation is inspired by a wide range of functionalist work on NP structure, most prominently Rijkhoff (2002), but also McGregor (1997b) and Van Valin (2005: 21-30). The same basic domains have also been singled out in general typological surveys, e.g. Corbett (1991) and Aikhenvald (2003) on classification, Riessler (2016) on qualification, Corbett (2000) on number, and Himmelmann (1997) and Lyons (1999) on determination. The question of NP constituency has its origins in the Australianist literature (e.g. Hale 1983; Blake 1983; Heath 1986), but has also been discussed in other typological studies (e.g. Rijkhoff 2002: 19-22; Krasnoukhova 2012: 167-191). In any case, the domains used here should be understood in a broad sense, as a heuristic tool for organising issues and data in this survey, and not as a theory of how NPs are structured in Australian languages.

The discussion of these five domains is organised in terms of three chapters, with domains grouped together on the basis of how well they have been described in the literature. Chapter 1 starts with classification, which without any doubt is the best-

described aspect of NP structure in Australian languages, both in individual grammars and in broader studies. Chapter 2 deals with qualification and quantification, both of which are reasonably well analysed, but not to the degree found for classification. Chapter 3 discusses the two domains that are most poorly understood, viz. determination and NP constituency, which are taken up for more detailed analysis in Part II of this dissertation. As I will argue, the two domains are poorly understood for very different reasons: determination is really under-described in the literature, with relatively limited descriptions in many grammars, and very few generalisations in the broader literature, while NP constituency (or rather, the lack of it) is very frequently mentioned in individual grammars and survey studies, but not really studied in sufficient depth. Each chapter also contains a number of maps (see also section 2.2 in the Introduction), to give the reader an idea of the spread of particular features in the sample. In the spirit of this chapter, the maps are intended to give a first overview based on the available data, but not to present an exhaustive analysis of certain features, or to discern areal patterns. In this respect, they are different from the maps used in Part II of this dissertation, which are meant to be as exhaustive and precise as possible.

Chapter 1: Nominal classification

Nominal classification is the first functional domain I discuss in this survey, in a chapter of its own, because it is the domain that has been studied in most detail in the literature. In the first section (§1), I discuss how nominal classification is defined in the typological literature, specifically which types of nominal classification can be distinguished. Next (section 2), I give an overview of the available Australianist literature and of the types of classification found in Australian languages. Sections 3-5 then study each of these types of classification in more detail, viz. noun classifiers (section 3), verbal and adjectival classifiers (section 4), and noun classes (section 5). The final sections discuss two peculiar cases, viz. systems that are in between two types of classification (section 6), and languages that have multiple classification systems at once (section 7).

1. Typological background

Nominal classification is a cover term for systems that overtly distinguish subclasses of nouns, and mark them as such with classifying elements that co-occur with the nouns or their dependents. For instance, in Kugu Nganhcara *yampim* 'yam' is classified as a type of vegetable food by co-occurrence with *mayi* in (1-1), and in Ungarinyin *ari* 'man' is classified as masculine by the use of the masculine form of the modifying anaphoric pronoun in (1-2).

(1-1) Kugu Nganhcara (Smith & Johnson 2000: 432)

    ngaya   *thuca-nga*   **_mayi_** **_yampim_**   *wa'i-nhu-wu*

    1SG.NOM   bend.over-1SG VEG   yam   dig-INF-DAT

    'I'm bending over to dig up yams.'

(1-2) Ungarinyin (Spronck 2016: 27)

    ari   *jirri*

    man   M.ANAPH

    'man'

Several authors have argued that a more precise set of criteria is needed to define classification systems, in order to distinguish them from other structures with related

functions, like compound structures (McGregor 2002: 4-22; Seifart 2010). For instance, to speak of a classification system, a large part of the nouns needs to be classified, by combination with a smaller number of classificatory elements, and only in well-defined grammatical contexts. Thus, in Ungarinyin, all nouns are classified into four or five classes, including the masculine class illustrated in (1-2) above, and this is indicated by patterns of agreement throughout the NP (i.e. in a clear grammatical context). By contrast, compound structures like *blueberry* and *strawberry* in English are somewhat similar in that they name different types of berries, but it is not true that a large part of the English nouns is classified in this way, or that this is tied to certain grammatical contexts (it is rather a matter of lexicon). These criteria have been put together in a definition of nominal classification by Seifart (2010: 719; in an adaptation of McGregor 2002: 16-22):

(i) "Nouns collocate in well-defined grammatical environments with classificatory elements (these may be free forms, clitics, affixes, etc., and these may also occur elsewhere).

(ii) The number of classificatory elements is larger than 1 but significantly smaller than the number of nouns.

(iii) Classificatory elements show different patterns of collocation with nouns, i.e. they impose a classification (some overlap is allowed; prototypically, there is a relatively equal division of the nominal lexicon by classificatory elements).

(iv) At least a substantial subpart of nouns are classified in this way."
(Seifart 2010: 719)

Within the domain of nominal classification, much of the typological work shows a consensus on a basic distinction between noun class or gender systems on the one hand and classifier systems on the other hand (e.g. Dixon 1982a, b, c; Grinevald 2000: 55-62; Aikhenvald 2003; Corbett 2007: 253-258; Seifart 2010). Both types are functionally systems of classification as defined above, but the major difference relates to whether the system is mainly grammatical, i.e. a closed system with clear morphosyntactic implications beyond the classifying element, or more lexical, i.e. a fairly open system with few morphosyntactic implications. The two types have been linked in terms of a process of grammaticalisation (Grinevald 2000; Seifart 2010), with some cases in between (Corbett 2007: 254-255). A table summarising the main

differences between the two types can be found below, taken from Grinevald (2000: 62), based on Dixon (1982c; 1986).

	Noun class – gender systems	**Classifier systems**
1.	classify *all* nouns	do not classify all nouns
2.	into a smallish number of classes	into largish number
3.	of a *closed* system	of an open system
4.	fused with other grammatical categories (Def, Nb, Case)	independent constituent
5.	can be marked on noun	not affixed to noun
6.	realised in agreement patterns	marked once
7.	N uniquely assigned to a class with no speaker variation	N possibly assigned to various classes at speaker's will
8.	no variation in register	formal/informal uses

Table 2: noun class vs. classifier

Noun classes are typically a relatively small and closed set, and they are defined mainly in terms of their morphosyntactic implications, e.g. the patterns of agreement they trigger. A straightforward example is French (Corbett 2007: 244). French has two noun classes, masculine and feminine, which are marked in the agreement patterns of the noun modifiers ('agreement targets') with the head noun ('agreement controller'). This is shown in (1-3), where the adjective and indefinite article inflect for the masculine class in (1-3a) and for the feminine class in (1-3b). Noun classes are widespread in the languages of the world: they occur, amongst others, in most Indo-European and most African languages, many Papuan languages, some Australian languages (mainly non-Pama-Nyungan), and some North, Central and South American languages (Aikhenvald 2003: 77-80; Corbett 2013: §2).

(1-3) French (Indo-European; Corbett 2007: 244-245)

    a. *un grand   garçon* (compare: *une grande garçon*)

        a big   boy

        'a big boy'

    b. *une grande femme* (compare: *un grand femme*)

        a   big   woman

        'a big woman'

Noun class systems are also known as gender systems in some grammatical traditions, especially when relatively few classes are distinguished, as in French, while the term noun class is often reserved for systems with a larger number of classes, as in African languages (Grinevald 2000: 57; Dixon 2002: 452; Seifart 2010: 731). It seems to me that this distinction has no solid morphosyntactic basis, so I treat these systems as one. I have chosen to use the term 'noun class' as a cover term, following the Australianist tradition (see further below).

Unlike noun classes, classifiers usually do not have morphosyntactic implications like agreement, they are often a relatively open set, and they tend to be more flexible in their use. They can be subdivided in terms of the specific grammatical construction that requires their use, viz. numeral classifiers, genitive classifiers, verbal classifiers, and - the most general type - noun classifiers, in addition to some minor types like locative or demonstrative classifiers (cf. e.g. Grinevald 2000; Seifart 2010). I briefly exemplify each of the major types.

Numeral classifiers are classifiers that are obligatorily used in constructions with numerals (and not outside these contexts). They can be free or bound forms, they are always adjacent to the numeral and they can also occur on demonstratives and sometimes on adjectives (Grinevald 2000: 63-64; Seifart 2010: 721). An example from Japanese is given in (1-4), where the presence of a numeral in the NP requires the use of a classifier. Numeral classifiers are mainly found in East and Southeast Asia, but also in West Africa, the Pacific Northwest, Mesoamerica, and the Amazon basin (Aikhenvald 2003: 121-124; Gil 2013: §3).

(1-4)   Japanese (Japanese; Matsumoto 1993; cited in Grinevald 2000: 63)
   a.   *enpitsu ni-hon*
        pencil   two-CLF
        'two pencils'
   b.   *hon   ni-satsu*
        book   two-CLF
        'two books'

Genitive classifiers occur in possessive constructions (Grinevald 2000: 66; Seifart 2010: 723). An example from Kosraen can be found in (1-5), where the presence of a possessive pronoun in the NP requires the use of a classifier. Genitive classifiers are a less common type; they are found, amongst others, in Oceanic languages, and in

some North and South American languages (Aikhenvald 2003: 147-148; Seifart 2010: 723).

(1-5) Kosraen (Austronesian; Lee et al. 1975: 110-118; cited in Seifart 2010: 723).

    a. *sikuthur* *okuh-k*
       scooter CLF:TRANSPORT-my
       'my scooter'

    b. *mos* *suhuh-k*
       breadfruit CLF:PLANT-my
       'my breadfruit tree'

    c. *mohm* *sih-k*
       house CLF:SHELTER-my
       'my house'

Verbal classifiers are morphologically part of the verb, but they classify nouns that are arguments of this verb. The classifier can take the form of an incorporated element (which can also be used as a root), as in (1-6), or of an affix (which cannot be used as a root), as in (1-7) (Grinevald 2000: 67; Seifart 2010: 722-723). Verbal classifiers are found in some North American languages, in Lowland Amazonian languages, in a few Australian languages and in several Papuan languages (Aikhenvald 2003: 169-171).

(1-6) Caddo (Caddoan; Mithun 1984: 865)

    a. *-'ič'ah-*
       'eye' (noun root)

    b. *ka'ás* *háh-'**ič'ah**-'í'-sa'*
       plum PROG-eye-grow-PROG
       'Plums are growing.'

(1-7) Cherokee (Iroquoian; Blankenship 1997: 92; cited in Seifart 2010: 723)

    a. *wèésa* *gà-**káà**-nèè'a*
       cat 3SG.A>3SG.P-**CLF:LIVING**-give.PRS
       'She is giving him a cat.'

    b. *àma* *gà-**nèèh**-néé'a*
       water 3SG.A>3SG.P-**CLF:LIQUID**-give.PRS
   'She is giving him water.'

Finally, there is also a subtype known as noun classifiers, which are not triggered by a specific grammatical construction but generally occur with nouns. They are normally free forms (Grinevald 2000: 64-65; Seifart 2010: 722). An example can be found in (1-8), from Jacaltec, where the two nouns in the structure are accompanied by noun classifiers. Noun classifiers are found in many Australian languages, in Mesoamerican and some South American languages, and in some Western Austronesian, Oceanic, Tai-Kadai and Austroasiatic languages (Aikhenvald 2003: 96-97).

(1-8)   Jacaltec (Mayan; Craig 1986b: 264; found in Seifart 2010: 722)
    xil   *naj*   *xuwan*   *no7*   *lab'a*
    saw   CLF   John   CLF   snake
    'John saw the snake'

Some general issues for all of these types are the boundaries between the various systems, their degree of grammaticalisation, the specific motivation for the assignment of a noun to a class (e.g. semantic, morphological and/or phonological), and how dynamic the system is (e.g. are classifiers still being created; are introduced objects or loanwords incorporated into the system). I now discuss these questions for the Australian context, to see where Australian languages belong in the general typological picture sketched above.

2. Nominal classification in Australian languages

Of the types of classification discussed above, Australian languages have noun classes, (incipient) noun classifiers, and (in a small minority of languages) verbal classifiers. There is one language, Enindhilyakwa, that can be said to have 'adjectival classifiers'. In total, about 64 languages, or almost two thirds of the sample, have some form of nominal classification. This count is approximate, because it is not always straightforward to determine whether a language truly has a classification system, especially in the case of nominal classifiers (traditionally known as generic-specific structures in the Australian literature; more on this in section 3 below). An overview map showing the languages which I analyse as having a system of nominal classification can be found below (map 2).
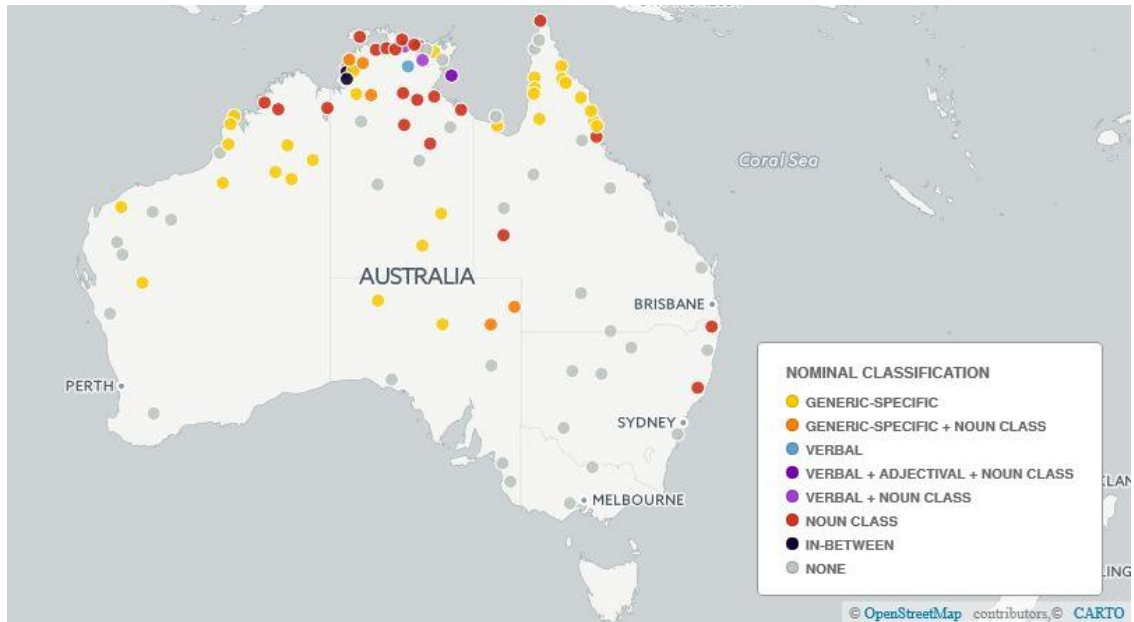
Map 2: Nominal classification: overview. For an online, dynamic version of the map, see: http://bit.ly/clf-overview.

There is quite a bit of literature on nominal classification in Australia, which is the best studied aspect of NP structure overall for Australian languages. Sands (1995) provides a good cross-linguistic study, discussing the types of classification that can be found in Australian languages, as well as proposing reconstructions for some classifier forms. Dixon (2002: 449-514) focuses on the distinction between types of classification, and devotes special attention to the distribution of the different types across the continent and the motivation for the assignment of nouns to classes. Apart from these two continent-wide surveys, there are many studies of classification in individual languages or regions, especially for noun class systems. For instance, the contributions in Harvey and Reid (1997) focus on classification in northern Australia, with studies on noun class assignment, the function of nominal classification, systems in between noun classes and classifiers, and the distinction between classifiers and generic-specific constructions. McGregor (2004: 146-150) discusses noun classes in the languages of the Kimberley. Singer (2016) presents an in-depth study of noun classes in Mawng, showing how a noun class system is not always purely grammatical in all respects. Most of these studies mainly deal with noun classes, while noun classifiers have received less attention in the general literature. However, there is one particularly influential study of noun classifiers, viz. Wilkins (2000), which is discussed in more detail below.

In the following sections, I outline the main issues raised in the literature, and summarise the findings from my data. I first discuss the different types of classifier

systems (sections 3-4), then move on to noun classes (section 5), and in-between systems (section 6), and I finish with a discussion of some languages that have multiple nominal classification systems (section 7). In the spirit of a survey chapter, this is an overview of the main tendencies in my data, but not an exhaustive analysis in any way.

3. Noun classifiers and generic-specific constructions

In this section I discuss noun classifiers and related structures. In fact, the most common name used in Australian languages is simply 'generic-specific constructions'. This partly reflects tradition,[7] and partly the reluctance of some grammarians to analyse the generic noun as a genuine noun classifier, which may also relate to questions about the headedness of these structures. Before going into these questions, I give a general overview of the distribution of these structures in the sample and in Australian languages in general.

There are about[8] 37 languages in the sample that have some sort of generic-specific structures, 25 of which are Pama-Nyungan and 12 non-Pama-Nyungan. I use a slightly broader definition here than the one given in section 1, as in some of these languages the structures are infrequent and not a 'substantial subset' of nouns is classified in this way. I include these borderline cases precisely to allow discussion on the delineation of classification systems (see further in section 3.1.2). The proportions here are different from the ones posited in Sands (1995: 257), which can be explained by her stricter counts, including only 'true' noun classifiers (although she too admits to problems of delineation [1995: 270]). Map 3 below gives an overview of the spread of generic-specific structures across Australia (this corresponds to the yellow and orange dots in map 2 above). They are especially common in Cape York Peninsula, central Australia and north-western Australia, as well as in the Daly River area and neighbouring languages. The online version of this map provides more information on the morphosyntax of these structures in the individual languages (clicking on a language point reveals an extra information window).

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[7] Johnson (1988: 199) attributes this terminological choice to Dixon (1972; 1977).
[8] As explained in the Introduction, counts in this part of the thesis are approximate. When a particular feature (like the availability of generic-specific structures) is not described in a grammar, it is often unclear whether it is truly absent in the language or merely left undescribed. However, as nominal classification is one of the best-described domains for Australian languages, it is likely that, if it is present in an individual language, it will also have been described in the grammar.

Map 3: Generic-specific structures. For an online, dynamic version of this map containing more details on morphosyntax, see: http://bit.ly/generic-specific.

In the rest of this section, I first discuss the syntax of these structures (section 3.1), starting with some general morphosyntactic features, but mainly focusing on the status of the generic elements. Following this, I give an overview of the semantics and use of these structures (section 3.2), covering the number of classifiers, principles of assignment and variability in use, and frequency and discourse functions.

3.1.   Morphosyntax

Morphosyntactically, generics are usually free forms, although in a few languages they are analysed as prefixes or as part of compounds (see below in section 3.1.1). The order is fixed to generic-specific in most languages, as in (1-9) from Alyawarra. There are 9 languages in which the opposite order is also possible, either regularly (e.g. Gooniyandi, McGregor [1990: 261]) or rarely (e.g. Yidiny, Dixon [1977: 247]). An example of variable order is given in (1-10) from Wangkajunga, showing generic-specific order in (1-10a) and specific-generic order in (1-10b). Languages with variable order have a specific geographic distribution, with six out of nine concentrated in the

west/north-west of Australia (the other three are Djapu, Kayardild and Yidiny). In addition, in at least 6 of these languages, the use of generic-specific structures seems to be relatively infrequent overall (see also section 3.1.2).

(1-9)　Alyawarra (Yallop 1977: 119)

　　　　arula　　akarliy-ika　　　　utnthiyla

　　　　wood　　wild.orange-DAT　search.PRS.CONT

　　　　'(We're) looking for wild orange wood.'

(1-10)　Wangkajunga (Jones 2011: 240)

　　　a.　*Jipari-rni　　　　yunga-ma,　　**warta jipari***

　　　　　plant-1SG.OBJ　give-PST.IPFV　tree　　type

　　　　　'She used to give me *jipari*, the plant *jipari*.'

　　　b.　*Ngaa-n-pa-janampa　　ngarri-rra wana-nin　　　　　**Warrangkarli　　mayi**.*

　　　　　DEM-PL-*pa*-3PL.DAT　lie-SER　　accompany-PRS　plant.name　　　plant.food

　　　　　'These lined up [along the bottom of an illustration] are '*warrangkarli*' fruits

　　　　　for them.'

The main syntactic issue for these structures does not concern word order, however, but two related questions that are discussed time and again in the literature: (i) Are generic nouns really classifiers, and (ii) What is the internal structure of generic-specific combinations in terms of headedness? I first give an overview of how the grammars in the sample deal with these questions, and then discuss a constructional analysis by Wilkins (2000), originally proposed for Arrernte and some neighbouring languages, but which I believe can help to solve many of the outstanding questions in this domain. To round off, I also discuss a small number of languages where generic-specific constructions seem to behave a bit differently from the rest of the sample.

3.1.1.　Headedness and syntactic analysis

The question of headedness is answered in a range of ways in the sample. For the 37 languages that I analyse as having generic-specific structures, there are at least four different analyses (see the online version of map 3 for information on the analysis proposed for individual languages). For 4 languages it is argued that the generic is the head of the NP, for 5 others the specific is regarded as the head, for 12 languages it is argued that the generic and the specific co-head the NP (in 6 of these the structure is analysed as one word, i.e. a compound or affixed noun), and for 3 the two nouns

are analysed as being in apposition (apposition within the NP for two languages, and between NPs for the third). Another 3 languages have variable analyses depending on the order of the generic and specific, and for 10 languages it is unclear, or the grammar does not make any specific claim. The analysis may of course be different for different languages, but the decisions are probably also influenced by the weight given to certain types of evidence by individual authors.

The types of evidence used in the grammars are quite diverse. Arguments in favour of positing the generic as head include, for instance:

(i)   Word order: the position of the generic follows a general tendency for the ordering of heads in the language (e.g. Gaby [2006: 282] on Kuuk Thaayorre).

(ii)   Independent use: the generic can be used on its own, without a specific, and this structure "do[es] not appear elliptical" (e.g. Gaby [2006: 283] on Kuuk Thaayorre; Hill [2015] on Umpila).

(iii)   Semantics: the use of the generic-specific structure is more similar to the use of the generic alone, and the specific restricts the reference of the generic (e.g. Goddard [1985: 47] on Yankunytjatjara).

Arguments in favour of analysing the specific as head are:

(i)   Independent use: the specific can be used on its own, without a generic (e.g. Hill [2015] on Umpila)

(ii)   Semantics: the generic-specific structure as a whole functions as a specific noun would (e.g. Gaby [2006: 283] on Kuuk Thaayorre; Johnson [1988: 201] on Kugu Nganhcara)

Arguments given in favour of co-headedness (also called 'complex head') often include a combination of the ones mentioned above, such as the fact that either element can occur as sole head of the NP (e.g. Hill [2015] on Umpila). The hypothesis of co-headedness has been further developed by Sadler & Nordlinger (2010), who propose a syntactic account in the LFG framework, covering not only generic-specific structures but also part-whole expressions, inclusory constructions, coordination marked by juxtaposition, and other nominal-nominal expressions. Some authors go one step further and analyse the generic-specific combination as a compound; this is further discussed below (section 3.1.2, esp. fn. 10).

Some of the argument listed above may be language-specific, but for the most part, the issue of headedness really boils down to the question whether the generic is a 'true' classifier (and therefore a dependent) or not. Some indications for this can be found in Wilkins (2000), Grinevald (2000) and Dixon (2002: 449-450), all of whom suggest that generic-specific structures are less grammaticalised than 'classic' noun classifiers. Thus, Grinevald (2000: 65) argues that "noun classifiers appear to exist also in Australia, although in a more incipient, less grammaticalized stage (…)", and Dixon (2002: 450) argues that Australian languages originally had a "generic noun/specifier" system (i.e. where the generic noun is the head) which in some languages further developed to a "classifier/specific noun" system (i.e. where the specific noun is the head). The main argument for such distinctions seems to be obligatoriness: generic-specific combinations are optional, whereas noun classifiers occur "in *each* noun phrase with a specific noun" (Wilkins 2000: 165-166, referring to Sands 1995). However, there is no language in the sample that actually meets this requirement, nor is this the case even for the presumably 'prototypical' noun classifier language Jacaltec (Craig 1986a: 263; Grinevald 2000: 80). In fact, strict obligatoriness seems to be a feature of further grammaticalisation towards noun classes (cf. also Seifart 2010). There is a relative difference between languages, though: in a language like Jacaltec, there is only a small number of nouns that occur without a classifier (Craig 1986a: 263), and classifiers are used "overwhelmingly" in definite contexts and never in non-referential NPs (Wilkins 2000: 156), whereas in a language like Arrernte, generic-specific structures can occur in any type of context, but are nevertheless quite restricted in their use for other reasons (Wilkins 2000: 157, 178). A second argument that is used to set apart generic-specific systems is that in the typical classifier system some of the elements may be specialised in a classifier function. Again, however, even in Jacaltec, most classifiers can also be used in another function, e.g. as sole head of the NP (Wilkins 2000: 160, referring to Craig 1986b: 290). A final argument, mentioned by Grinevald (2000: 80), relates to whether the set of generics/classifiers is an open or closed class (the latter is true for Jacaltec [Craig 1986a: 261]). However, as noted in table 2, a closed set of classes is really a feature of noun class systems, while classifiers typically form a (semi-)open set. So even if generic-specific structures are less grammaticalised, the arguments against analysing them as classifiers are not very strong.

There is, in fact, another way to look at these questions. All of the arguments in the debate focus on features of the classifier itself; an alternative may be to focus on

the construction as the source of the classifying function. Thus, Wilkins (2000) argues for Arrernte (and in a preliminary way for Yankunytjatjara and Warlpiri) that the generic-specific structure is a 'classifying construction', where the classifier effect for the generic noun is constructional, i.e. it arises from the use of the noun in the whole construction. This would explain the independent use of generic nouns, as well as the difficulties encountered in delineating a clear set of classifiers; in this regard, Wilkins (2000: 155) even hypothesises that "any lexicalized superordinate term which has identifiable lexicalized hyponyms can indeed occur as the generic in a 'generic-specific' construction." Wilkins does not apply this analysis beyond the languages in his study, but I expect that it can be applied more broadly, given that it can deal with many of the contradictory arguments given above, and at first sight fits the information I have on the other languages of the sample.[9]

3.1.2.   A different type of structure?

There is at least one set of languages where Wilkins' constructional analysis may be less successful, viz. the nine languages where a generic and specific can be combined in either order (see above). It is unclear how flexible elements can fit a constructional configuration like the generic-specific one proposed by Wilkins (let alone a dedicated classifier analysis) – this is argued explicitly, for instance, by Wilkinson (1991: 481) for Djambarrpuyngu. Interestingly, moreover, in six of these languages generic-specific combinations are also said to be infrequent.

   Features like variable order and infrequent use have invited alternative accounts, in which the relevant structures are not analysed as separate generic-specific constructions, but instead integrated in other constructional configurations posited for the language. This is the case for four languages, viz. Gooniyandi (McGregor 1990: 260-264), Martuthunira (Dench 1994: 194-195), Nyangumarta (Sharp 2004: 311), and Nyulnyul (McGregor 2011: 406).

   The other configurations with which these structures are associated are of two types. The first type is found, for instance, in Gooniyandi (McGregor 1990: 260-264), where a Classifier slot is identified in the position immediately before the Entity slot

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[9] Wilkins does make a distinction between languages like Arrernte in Central Australia and languages in 'north-eastern Australia' in terms of the (discourse) function of the classification system, but it is unclear whether he would also characterise the generic-specific structures in the second group of languages as classifying constructions or as genuine classifier-noun structures (2000: 162).

in the NP (see chapter 4, section 3.1 for more details). In spite of the terminology used, the 'Classifier' slot is broader than just nominal classification: the examples in (1-11) illustrate how a Classifier-Entity NP can involve a variety of things. In the case of a generic-specific structure, the element in the Classifier role can indicate "the generic type of which the Entity is a specific example" (as in 1-11a), or "the purpose or use of the object" (as in 1-11b). Conversely, in the case of a specific-generic structure, as in (1-11c), the element in the Classifier slot "distinguish[es] the specific type of a more general Entity". In other instances the Classifier element classifies a person by "'race' or cultural group", as in (1-11d), or a thing by "its typical location in space or time" as in (1-11e).

(1-11) Gooniyandi (McGregor 1990: 261-262)

      a. *gamba   yiwindi   jigjigji*
         water   rain   it:spotted
         'Rain spotted the ground.'

      b. *maa   thiddoo*
         meat   kangaroo
         'the edible animal kangaroo'

      c. *yiwindi   gamba   bagiri*
         rain   water   it:lies
         'Rain water is lying about.'

      d. *gardiya   Colin*
         white:person <name>
         'the white man Colin'

      e. *gaddwaroo   warda*
         afternoon   star
         'evening star, Venus'

The second type of configuration can be illustrated with McGregor's analysis of Nyulnyul (2011: 406). The Nyulnyul NP only includes a Qualifier slot (immediately before the Entity), and not a separate Classifier slot like in Gooniyandi. This is because the functions of "quality and category specification" are "treated as the same" in this language (McGregor 2011: 406). A Qualifier-Entity NP can thus involve both the attribution of a quality to the referent, as in (1-12a), and the subcategorisation of the referent, for instance in the form of a generic-specific (1-12b) or specific-generic structure (1-12c).

(1-12) Nyulnyul (McGregor 2011: 407, 408, 409)

    a. *maank   mungkan*
       black   hair
       'black hair'

    b. *bin   bardangk karnbalm*
       that   tree   tree:type
       'that *karnbalm* tree'

    c. *kinyingk larrkird bardangk*
       DEF   boab   tree
       'this boab tree'

Note that Dench's analysis of Martuthunira (1994: 194-195) involves a combination of the two types illustrated above: he analyses specific-generic structures as Classifier-Entity constructions, and generic-specific structures as Entity-Qualifier constructions.

It is unclear whether the other five languages with flexible order of generic and specific (or even other languages for that matter) could also be analysed in a similar way. One way to look at this may be in terms of grammaticalisation (as hinted at by Dixon [2002: 449-451], see above in section 3.1.1). If noun classifiers are a further grammaticalisation of generic-specific constructions, then perhaps generic-specific constructions are a further grammaticalisation (or constructionalisation) of the types of structures described in this section (which are more flexible and even less specialised). Obviously, this remains speculative in the absence of more detailed discourse-based and diachronic work on these languages.

To round off this section, I want to mention one other language that does not fit Wilkins' analysis, but for a different reason. In Bardi, potential generic-specific structures like (1-13a-b) are analysed as compounds (Bowern 2012: 254), because they have a different locus of case marking than NPs (i.e. following the whole structure, rather than following the first element as in NPs), and show a distinct stress pattern.[10]

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[10] Compound analyses have also been suggested for other languages, for instance Oykangand (Hamilton 1996: 5) and Rimanggudinhma (Godman 1993: 38), but apart from distinct stress patterns in the latter, the evidence is not convincing (for instance, the fact that elements that have a fixed order and cannot be separated are also characteristics of (some) types of noun phrases). Additionally, some counter-arguments for a compound analysis can be found in Johnson (1988) for Kugu Nganhcara, and in Kilham (1974) for Wik-Munkan (not in the sample). Syntactically, the deletion of the classifier is possible, whereas no part of the compound can be left out without changing the meaning significantly; semantically, the classifier is superordinate to the whole construction and the classified element has the same sense as the entire construction, while this does not (necessarily) hold

Nothing more is said about generic-specific structures, so presumably they are not very frequent.

(1-13) Bardi (Bowern 2012: 259)

    a. *oorany-baawa;*   *miida-baawa*
       woman-child   male-child
       'girl; male child, boy'

    b. ***[Mayala gooljoo-yoon]***   *i-ng-oorr-oo-moogar-na-na=rr*
       mayala   grass-SOURCE   3-PST-AUG-TR-make-CONT-REMPST=3A.DO
       ngirray   *milon*
       huts   long.ago
       'Long ago, they used to make huts from spinifex grass (*mayala* grass).'

3.2.   Meaning and use

In this section, I discuss the meaning and use of generics. It is often difficult to give the exact number of classifiers/generics in a language, for the reasons mentioned above. Nevertheless, most grammars at least give an approximation, if not an exact figure. The number of generics in the languages of the sample ranges from 2 or 3 to 32. An overview is given in map 4 below. In several languages, there are only a handful of generics that are regularly used, and a range of others that are attested less frequently. In such cases, the frequently used ones usually[11] include at least those for vegetable food and meat food/animals, cf. also Dixon (2002: 455) and Sands (1995: 270).

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for compounds. An in-depth study of the general issue of delimitation of compounds and other 'complex nominal heads' in Australian languages can be found in Lesage (2014). See also Harvey (1992) (and McGregor's reply on this), on a potential compound analysis of Classifier-Entity structures.

[11] Languages lacking both of these are languages in which generic-specific structures are infrequent (e.g. Patz [1991: 290] for Djabugay) and/or for which an alternative analysis has been proposed (e.g. Bowern [2012: 169, 259-260] for Bardi; see above). If only one of the two is lacking, then it is the plant food generic (as in Arabana/Wangkangurru, Kayardild, Lardil, Wajarri, Walmajarri, Yandruwandha). For Kayardild, Evans (1995: 17) attributes this to the "low proportion of plant food in the diet" of Kayardild (and presumably also Lardil) speakers.

Map 4: Number of generics. For an online, dynamic version of this map, see: http://bit.ly/generics-number.

3.2.1. Semantic range

The semantic range of the generics across the languages is broad, and seems to categorise the natural environment as well as culturally important objects. To illustrate this broad variety of generics I list some of the main types of generics found in the languages of the sample. Most languages have a generic for vegetable food, i.e. plants that are used as food source. There are also generics for different kinds of flora, like tree/wood,[12] grasses, seeds, paperbark trees and yams, and for landscape features like rock/stone and ground/earth. Generics for fauna include meat food (i.e. animals that are used as food source), fish, birds and bats, edible grubs, insects, frogs, snakes, ants, and dogs/social animals, as well as animal products like honey/sweet food (usually including bees) and termite mounds. Several languages have generics for water and

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[12] Apart from the 'plant food' and 'meat food' generics, the 'tree' generic seems to be the most common generic - almost all languages have one. Exceptions include languages that only have generics for vegetable food and meat food (Emmi, Martuthunira, Wardaman) and languages which are otherwise limited (e.g. with infrequent use of generic-specific structures, as Arabana/Wangkangurru).

fire, and some also for other elements such as wind/air, stars or thunder storms. Different types of generics for humans are also found in at least half of the languages, for instance Aboriginal people, initiated men, women, children, white men, white women and family members. Generics for language/speech and place/camp are also found in several languages. Finally, a whole range of objects can also be categorised by generics, either by the general effects or dynamics of the object (useful, harmful, moveable), or in a more narrow sense (spears, woomeras, bags, canoes, fire sticks, digging sticks).

Within this broad range, there are several suggestions to distinguish large semantic domains of classification, based on what is believed to be the function of classifiers (e.g. Denny 1976; Allan 1977). For Australian languages, the main proposal is that there is a distinction between 'inherent nature' generics (e.g. rock), 'function or use' generics (e.g. edible meat food) and 'social status' generics (e.g. initiated man) (cf. e.g. Wilkins 2000: 152-154; Dixon 2002: 456-457).

3.2.2. Choice of generics

The list of generics mentioned above gives an initial idea of their meaning, but the way they contribute to the semantics of a generic-specific structure comes to the surface most clearly in two types of contexts: with introduced items, and in contexts of choice. The incorporation of introduced items in the classifier system shows both how speakers conceive of the item, and how they conceive of the larger class in which the item is located, as illustrated in (1-14). For instance, the Wangkajunga generic *mangarri* is traditionally used for plant food, like in *mangarri ngarlukurtu* 'bush coconut', but now also includes manufactured plant-based food like breakfast cereals (as in 1-14c) (Jones 2011: 61).

(1-14) a. Umpithamu (Verstraete p.c.)

        mayi   *wurrkan,*   *mayi*   *nani*

        VEG.FOOD   dust/ashes   VEG.FOOD   sand

        'flour, sugar'

    b. Yandruwandha (Breen 2004b: 167)

        wathi   *mutuka*

        WOODEN.OBJECT   motorcar

        'motorcar'

c. Wangkajunga (Jones 2011: 61)

mangarri   *witiz*

PLANT.FOOD   Weeties

'breakfast cereal'

In some languages, some nouns can occur with different generics, as can be expected in a system of noun classifiers. Again, this gives us an interesting perspective on the way the generic contributes to the meaning of the whole structure. One option is that the use of a particular noun with a different generic entails a different reference. In such cases, we usually deal with homonymy, where the two lexemes that formally coincide each take a different generic. An example is the set of Kuuk Thaayorre structures in (1-15), where the specific noun *kermpl* can either be preceded by the 'plant food' generic *may*, or by the 'meat food' generic *minh*. In the former structure it refers to a type of fruit, while in the latter it refers to a type of bird. As it is difficult to reconcile these two senses into one underlying sense,[13] it is necessary to posit two separate lexemes, each occurring with a particular generic (Gaby 2006: 280).

(1-15) Kuuk Thaayorre (Gaby 2006: 280)

    a. *may*   *kermpl*

         VEG.FOOD   large.white.berry

         'large white berry'

    b. *minh*   *kermpl*

         MEAT.FOOD   corella

         'corella'

The second option with variable generics is that one referent may be presented in different ways. A common variant is that a specific noun referring to a type of tree can occur with the 'tree' generic in reference to the tree itself, as in (1-16a), or with the 'vegetable food' generic in reference to the fruit of that tree, as in (1-16b). Another example is when (shell)fish is classified either as food or as an object that is not eaten (e.g. the shells), as in Kugu Nganhcara (Smith & Johnson 2000: 447), or similarly in Kayardild where seaweed can be classified as an object (for humans) or as food (for dugongs) (Evans 1995: 247).

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[13] Some parallel cases in other languages may have a metonymic basis; for instance one term may be used both for a tree and for the bird for who the fruit of the tree is the typical food (Evans 1997).

(1-16) Oykangand (Hamilton 1996: 4)

    a. *uk*   *atulwanych*

       TREE   Leichardt

       'Leichardt tree'

    b. *egng*   *atulwanych*

       FOOD   Leichardt

       'Leichardt tree fruit'

These types of variation have been studied in great detail for Arrernte by Wilkins (2000), who analyses them as highlighting "specified sets of knowledge structures" or "discourse relevant properties of the referent" (2000: 148, 200), and consequently backgrounding others. For instance, the specific noun *arlkerrke* 'meat-ant' can occur in a classifier construction with the generic *yerre* 'ant', where the hearer is expected to think about the referent as an ant (i.e. a kind of living thing that tends to live in nests in the ground, commonly bites people, etc.) or with the generic *awalye* 'traditional medicine', where the hearer is expected to think about the referent as a medicine (i.e. an object which is used to cause a person to be better etc.). *Arlkerrke* can also be construed with the generic *pmere* 'place' to mean 'place associated with the meat-ant totem'.

In some languages, nouns can occur with more than one generic at the same time. In Arrernte, the usual combination is that of a function or use generic followed by an inherent nature generic, as in (1-17), while Yidiny shows the reverse order, as in (1-18a). Another option is that a more general generic is combined with a more specific one, as in (1-18b) from Yidiny. In both of these languages, the use of more than one generic seems to be productive. In other languages, structures that appear to combine generics are actually syntactically different: some generic-specific constructions have become lexicalised, and can then again be used as a specific noun with a generic. This is the case for the lexicalised structure *minh patp* [MEAT hawk] 'hawk' in Kuuk Thaayorre, which when combined with the FISH classifier *ngat* comes to mean 'spotted eagle-ray' (Gaby 2006: 84).

(1-17) Arrernte (Wilkins 2000: 154)

    kere   *thipe*   *nyengke*

    MEAT   BIRD   zebra.finch

    'a zebra finch (edible)'

(1-18) Yidiny (Dixon 1977: 148)

    a. *wira*   *gala*   *biwuɽ*

        MOVEABLE.OBJECT   SPEAR   fish.spear

        'fish spear'

    b. *bama*   *buŋa*   *yabu:ɽ*

        PERSON   WOMAN   pubescent.girl

        'pubescent girl'

3.2.3. Use of generic-specific structures

In many languages in the sample, nouns are often only optionally accompanied by the appropriate generic. Thus, a language can have nouns that never occur with a generic, nouns that sometimes occur with a generic and nouns that virtually always occur with a generic (as discussed for Kuuk Thaayorre in Gaby [2006: 84, 281]). Unfortunately, variation in the (non-)use of generics, or its motivation, is not discussed in much detail for most languages of the sample. In this section, I provide a brief survey of what can be found in the literature.

    Starting with frequency, the use of generic-specific structures[14] appears to be quite infrequent in the languages in the west and north-west of Australia (e.g. Martuthunira [Dench 1994: 194-195], Nyangumarta [Sharp 2004: 310], Wangkajunga [Jones 2011: 239], Yawuru [Hosokawa 1991: 79], Wardaman [Merlan 1994: 239], and Emmi [Ford 1998: 101]). In north-eastern Australia, generic-specific constructions are used quite frequently in the languages on the west coast of Cape York Peninsula (e.g. Kugu Nganhcara [Smith & Johnson 2000: 420; Johnson 1988: 199], Kuuk Thaayorre [Gaby 2006: 84], Oykangand [Sommer 1970: 170; Hamilton 1996: 3]), but they are less frequent on the east coast (e.g. Umpila [Hill 2015], Umpithamu [Verstraete 2010], Kuku Yalanji [Patz 2002: 120], Djabugay [Patz 1991: 290]), except perhaps for the 'plant food' and 'meat food' generics (e.g. Patz [2002: 120] on Kuku Yalanji) or in elicitation (e.g. Verstraete [2010, p.c.] on Umpithamu). Incidentally, there seems to be a correlation between the frequency of use for generic-specific structures and the number of generics/classifiers a language has (see maps 3-4 above).

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[14] A different type of frequency relates to the proportion of nouns that can enter into a generic-specific construction in a particular language. This is probably correlated with the overall frequency of use in discourse, but it is important to keep these two apart analytically.

Turning to their use in discourse, only scattered pieces of information are available, so I can only give a list of uses as they are reported for individual languages. A common practice is that generic-specific structures are used to introduce a referent in the discourse, and reference is then continued by a generic alone (e.g. Ford [1998: 101] for Emmi; Sommer [1970: 185-186] for Oykangand; Hill [2015] for Umpila). Use in discourse also seems to depend on the semantic load of the generics in generic-specific structures. In some languages, like Yidiny, Kugu Nganhcara and Jaru, it seems that the contexts of use of a generic-specific structure and a specific alone are very similar, i.e. the generic does not seem to contribute much in terms of semantic content (e.g. Wilkins 2000: 166-169; Johnson 1988: 201; Tsunoda 1981: 94). In such languages, the use of a generic-specific structure can also be related to aesthetics or speech style. Dixon (1977: 495) for instance, argues that question-answer sequences in Yidiny usually involve an alternation between a generic and a specific, in the sense that (either) one is used in the question and the other in the reply. In other languages, like Arrernte, Yankunytjatjara and Gooniyandi, the generic does seem to have a higher semantic load, and the use of a generic-specific structure is related to how the referent is framed (Wilkins 2000: 169-177; McGregor 1990: 274). For instance, the generic 'animal food' can only be used in contexts of hunting or eating/cooking, as in (1-19a), but not in other contexts, as in (1-19b). Wilkins also notes how the classifying construction in such languages can be used for humourous effects by creating intentional mismatches (2000: 200-206).

(1-19) Arrernte (Wilkins 2000: 172, 173)

    a. *the   imarte arratye **kere**   aherre-Ø   arlkwe-tye.lhe-me-le.*
       1SG.ERG then truly   game/meat kangaroo-ACC eat-GO&DO-NPST.PROG-SS
       'When I got there, I ate some kangaroo meat ["had a good feed of kangaroo meat"]'

    b. *... anwerne   ingke   anteme alhe-ke   Ayampewerne-atheke.*
       ...1PL.NOM   foot   now   go-PST.COMPL Yambah-ALL-wards
       *Iwerre-ke   anwerne **aherre**   **arunthe-Ø**   are-ke.*
       way/path-DAT 1PL.ERG kangaroo many-ACC   see-PST.COMPL
       'Then we (sadly) set out on foot towards Yambah Station. On the way we saw some kangaroos.'

4. Verbal and adjectival classifiers

Verbal classifiers in Australian languages take the form of verb-incorporated generics, which are co-referential with a free-standing or 'external' specific noun. An example is given in (1-20) from Bininj Gun-wok, showing how the generic *rrulk* 'tree' is incorporated in the verb and classifies the free-standing *an-dubang* 'ironwood tree'. This is what Evans (2003a: 234-241) calls a "unification construction", because material from the verb (*rrulk*) and external material (*an-dubang*) are "unified to give full referring expressions" (ibid.: 234).[15] Since verbal classification originates outside the NP in these structures, it falls outside the scope of this study, but I include a short discussion here for the sake of completeness.

(1-20) Bininj Gun-wok (Evans 2003a: 236)

> *Ga-**rrulk**-di*   *an-**dubang**.*
>
> 3-tree-stand.NPST   III-ironwood
>
> 'There's an ironwood tree there.'

Verbal classifiers are found in four languages of the sample: Bininj Gun-wok (Evans 2003a: 236), Dalabon (Cutfield 2011: 105), Rembarrnga (Saulwick 2003: 373, 376-381) and Enindhilyakwa (van Egmond 2012: 237, 247-279). All these languages belong to the Gunwinyguan family and are situated in Arnhem land and nearby Groote Eylandt.[16]

These structures are just as difficult to analyse syntactically as the generic-specific structures discussed above, as also noted by Sands (1995: 272): "the decision on where to draw the line between simple noun incorporation and verb-incorporated classification is hazy." In Bininj Gun-wok and Enindhilyakwa, the incorporated generic is analysed as a true classifier (Saulwick 2003: 371-381; Evans 2003a: 330-335; van Egmond 2012: 248), while this is argued not to be the case for Rembarrnga (see

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[15] Other examples of 'unification constructions' are when the number of the referent(s) of a NP is only expressed on the verb (see further in chapter 2, section 2) or when an incorporated noun can be modified by an external adjective (see chapter 2, section 1.3) or demonstrative. This is one way in which some Australian languages can have 'distributed' nominal expressions (see also chapters 1 and 5).

[16] Sands (1995: 273) claims that Tiwi also has verbal classifiers, but according to Lee (1987: 164) "[t]hese verbal and other types of incorporated forms do not, in general, have a corresponding external form in the clause with which they are cross-referenced." Languages not in the sample that are described as having verbal classifiers are Ngalakgan, Ngandi and Nunggubuyu (see Sands 1995: 273-274; Dixon 2002: 460; Baker 2002; Saulwick 2003: 379). These also belong to the Gunwinyguan family. Warray, the remaining Gunwinyguan language of the sample, does not appear to have verbal classifiers or verb-incorporated generics (Harvey ms: 186).

Saulwick [2003: 371-381] for a detailed discussion). The analysis for Dalabon is unclear.

The number of generics that can be used in this construction is very high: Bininj Gun-wok appears to have 60 incorporating generics (Evans 2003a: 332), and Enindhilyakwa even 80 (van Egmond 2012: 250). The generics in Enindhilyakwa mostly originate in incorporated body parts, which have undergone semantic extension (e.g. *ngarr-* 'ear' > 'items with rough skin', or *lhakbak-* 'leg' > 'short and upright') (ibid.: 251, 260). The same pattern is found in Bininj Gun-wok, but only for a few generics (e.g. *ganj-* 'flesh, muscle' > 'meat') (Evans 2003a: 334).

Interestingly, this same set of generics can also be incorporated in adjectives in Bininj Gun-wok and in Enindhilyakwa. In Bininj Gun-wok, this is only possible when the adjective is used predicatively (Evans 2003a: 126), as in (1-21). In Enindhilyakwa, however, the adjective-with-incorporated-generic can modify a head noun (van Egmond 2012: 237), as in (1-22a-d). Aikhenvald (2003: 151) claims that in such cases, the incorporated generics are numeral classifiers, but van Egmond (2012: 250, fn. 8) shows that this is not a good characterisation, as they can be incorporated in all types of adjectives (including but not limited to numerals). In this sense, we could regard this case as a rare instance of adjectival classifiers. The examples below also show how incorporated generics are combined with noun class marking, and how the choice of the incorporated generic is variable, "emphasising its different features, or providing a different perspective on a noun" (van Egmond 2012: 248).

(1-21) Bininj Gun-wok (Evans 2003a: 453)

    ba-m-bo-re-i,   *ba-bo-lobm-i,*   **an-bo-gimuk**

    3PST-hither-liquid-go-PST.IPFV 3PST-liquid-run-PST.IPFV VE-liquid-big

    'when the floodwaters used to come running high'

(1-22) Enindhilyakwa (van Egmond 2012: 248)

    a. *mi-**lyakv**-babvrvngka*   *mvnhvnga*

        VE-elongated.and.solid-RDP.dry VE.burrawang

        'pile of dry burrawang nuts'

    b. *mi-**lyang**-bvlhvrra*   *mvnhvnga*

        VE-round.and.hard-unfinished VE.burrawang

        'unripe burrawang nuts, not ready to use'

    c. *m-**arrk**-inungkurakba*   *mvnhvnga*
        VE-small.and.round.and.many-old   VE.burrawang
        'many old burrawang nuts'

    d. *m-**embirrk**-ambilyvma*   *mvnhvnga*
        VE-round.and.flat-two   VE.burrawang
        'two crushed burrawang nuts'

5. Noun classes

As already mentioned, noun class systems are different from classifier systems in terms of their morphosyntactic implications, more specifically the fact that they trigger agreement. The noun itself often shows no overt marking, but its modifiers and/or the prefixes cross-referencing it on the verb do show overt marking to agree in noun class. Noun class systems are at the grammatical end of the classification continuum, often having grammaticalised from noun classifiers (e.g. Grinevald 2000: 55-58; Dixon 2002: 450; Seifart 2010: 727-728).

    There are 31 languages in the sample that have noun classes, 23 non-Pama-Nyungan languages and 8 Pama-Nyungan languages.[17] Noun classes in Pama-Nyungan languages are mainly found in systems of free personal pronouns that can be used adnominally (see chapter 5, section 3.3) and thus show agreement with the noun they modify (Pitta-Pitta, Diyari, Yandruwandha, Gathang, Kala Lagaw Ya). This is illustrated in (1-23) from Kala Lagaw Ya, where the personal pronoun shows feminine agreement with the noun *apuwan* 'mother' in (1-23a), and masculine agreement with the personal name *Tomagani* (referring to a male character) in (1-23b). The other Pama-Nyungan cases are Yanyuwa, which shows agreement on all modifiers in the NP (Kirton 1971: 21), Bundjalung, where adjectives agree with the head noun (Sharpe 2005: 42),[18] and Dyirbal, where demonstratives agree with the head noun (Dixon 1982).[19]

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[17] This is proportionally a higher number than given in Sands for Pama-Nyungan languages (2 out of 190), but this can be explained by the fact that she excludes languages that only have a class distinction in free pronouns (Sands 1995: 257, 331).

[18] Third person singular pronouns in Bundjalung also have masculine and feminine forms, but they are not used as modifiers to nouns and thus cannot be said to show agreement.

[19] Sands (1995: 274-275) proposes to analyse the system in Dyirbal as demonstrative classifiers rather than noun classes. Her arguments are (i) that the class of the noun is only marked on the demonstrative and nowhere else, and (ii) that one of the classes has zero realisation, which Sands

(1-23) Kala Lagaw Ya (Stirling 2008: 179, 182)

    a. **Nadh**   **apu-*w*-*an***   *waaku*   *nge*   *uma-n.*
       3SG.F.ERG   mother-*w*-ERG   mat(ACC)   then   make-NFUT
       'The mother was making a mat then.'

    b. **Nuy**   **Tomagani**   *gabudan*   *pathay.*
       3SG.M.NOM   Tomagani(NOM)   slowly   cuts(NFUT)
       'Tomagani cut slowly.'

The non-Pama-Nyungan cases are more classic types of noun class systems, as illustrated for Wambaya in (1-24a-b), where all modifiers agree with the head noun belonging to the first and third class respectively (glossed with Roman numerals). As could be expected, the majority of non-Pama-Nyungan languages in the sample have noun classes (viz. about two thirds of the non-Pama-Nyungan languages in the sample, the same proportion as observed in Dixon [2002: 469]). There are only about 10 non-Pama-Nyungan languages without noun classes:[20] the Tangkic and Garrwan languages on the Gulf of Carpentaria, which are structural outliers in other ways, but also some languages in the southern Kimberley (Bardi, Nyulnyul, Gooniyandi and Yawuru), as well as three other languages (Jaminjung, Matngele, Dalabon).

(1-24) Wambaya (Nordlinger 1998: 132, 115)

    a. *Ayani*   *ngi*   **ninaga**   **galalarrinyi-nka**   **bugayini-nka**
       look.for   1SG.S(PRS)   this.I.SG.DAT   dog.I-DAT   big.I-DAT
       'I'm looking for the big dog.'

    b. **Mama**   **burnaringma**   *ng-a*   *nawu.*
       this.III.SG.ACC   wild.orange.III.ACC   1SG.A-PST   step.on
       'I sat on this orange.'

In the rest of this section, I discuss the morphosyntax of noun classes in the sample (section 5.1), as well as their meaning and use (section 5.2).

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argues is the set of nouns that is unclassifiable. As to the first point, there are several languages that show agreement only in some word classes, which suggests that this argument is not a sufficient reason to dismiss a noun class analysis. The second point may be more valid. In terms of morphosyntactic features, however, e.g. obligatory agreement and number of classes (small), the Dyirbal system clearly fits in the noun class group rather than the classifier one (see table 2 above).

[20] Ford (1998: 97) argues that Emmi does not have noun classes. However, some pronominal suffixes on the verb show a male-female distinction, as do deictics (which can be used adnominally) (ibid.: 125). Two other non-Pama-Nyungan languages of the sample not mentioned here are Ngan'gityemerri/Ngan'gikurunggurr and Marrithiyel, which are discussed in section 6.

5.1. Morphosyntax

Morphosyntactically, noun classes are typically manifested in agreement patterns, on modifiers such as adjectives, numerals/quantifiers, possessive pronouns and demonstratives (as in (1-24) above), in personal pronouns (as in (1-23) above), in the cross-referencing prefixes on the verb, and on prefixed body part nouns or inalienably possessed nouns. Languages differ in this respect: there are several languages, for instance, where a class distinction is only seen in the free personal pronoun, and potentially on the verb. In other languages, the adjectives are the only place where agreement is marked. Several languages have a class of uninflected adjectives, next to a class that is always marked in agreement. A more detailed discussion of each of these agreement targets can be found in Sands (1995). In addition to agreement, noun classes can also be marked on the noun itself. This is found in about one third of the languages and in most of these, only for part of the lexicon. Overt marking on the noun can be lexically determined, or semantically transparent. An example of the latter is when noun class marking distinguishes several different meanings of a stem. This is illustrated in (1-25) from Bininj Gun-wok, where the prefixes on the head noun mark distinct but related meanings (Evans 2003a: 5, 124-125; see also below in sections 5.2 and 7). There is one case where overt class marking on the noun has a more specific function, viz. when it can also be absent. In Wubuy, for instance, the presence of overt class marking on the noun is associated with a 'topic' function, while its absence is associated with a 'non-topic' function (see Baker [2008] for a detailed study, also covering Ngalakgan and Marra).[21]

(1-25) Bininj Gun-wok (Evans 2003a: 5, 186; own glossing)

  a. *na-ngordo*

      I-?

      'male leper, cripple'

  b. *al-ngordo*

      II-?

      'female leper, cripple'

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[21] Sands (1995: 259-260) also discusses a another 'function' of overt class marking, viz. case marking. However, portmanteau marking of class and case is found not only on the head but also in agreement, so it seems to me that an analysis which takes case marking as the main function of head-marking of noun classes is difficult to maintain.

     c. *gun-ngordo*
         IV-?
         'leprosy'

Noun class markers obviously mark class membership, but they can also mark other features, including case and/or number. Number and class in particular are often connected in some way (also typologically, cf. e.g. Corbett 1991: 189-203; Corbett 2014: 98-99; Tsegaye et al. 2014: 191-214). In Alawa, for instance, the masculine and feminine noun class markers alternate with the non-singular number prefix (Sharpe 1972: 64), which can be analysed either as a restriction of class marking to singular forms, or alternatively as a system containing three classes (see below for more discussion). Similarly, in languages where the third person pronoun has a class distinction, it is usually only found in singular forms (e.g. Diyari [Austin 2011: 64]). In other languages, the human classes have separate minimal and dual forms but there is only one augmented form (e.g. Enindhilyakwa [van Egmond 2012: 95-96]), or there is a separate 'collective' marker for non-human referents (e.g. Enindhilyakwa [ibid.]).

5.2.   Meaning and use

The number of noun classes in the languages of the sample ranges from 2 to 7 in the singular (cf. also Sands 1995: 258). Additionally, for some languages, there are semantically specific number markers, like male and female dual forms or general dual and plural markers for human referents, which alternate with the class markers. In some cases, these number markers behave like class markers, while for other languages there is evidence to keep them separate. An example of the first category is Ungarinyin, which has a masculine class, a feminine class, two distinct neuter classes, as well as a neuter collective/human plural class (Rumsey 1982: 37-41). The plural class can either be analysed as a separate class or as a pure number prefix which alternates with class prefixes (Spronck p.c.). Since the number prefix alternates with the (singular) class prefixes and occurs in the same environments (e.g. on the same agreement targets), however, there is no morphosyntactic reason not to include them in the set of class prefixes, only (arguably) a semantic one. By contrast, in a language like Worrorra (Clendon 2014: 67-70), class prefixes are also morphologically integrated with person/number markers on the verb (1SG, 2SG, 1PL.INCL, 1PL.EXCL, 2PL), but in that paradigm the class markers are both syntactically and semantically

different from person and number markers, which implies that number really is separate. In the map below, I provide the number of singular/minimal classes in the sample, followed by the number of non-singular classes if appropriate (e.g. Ungarinyin: 4+1). This number is always the maximal number of classes displayed by a language (e.g. when a language shows neutralisation in some word classes, this is not represented on the map).
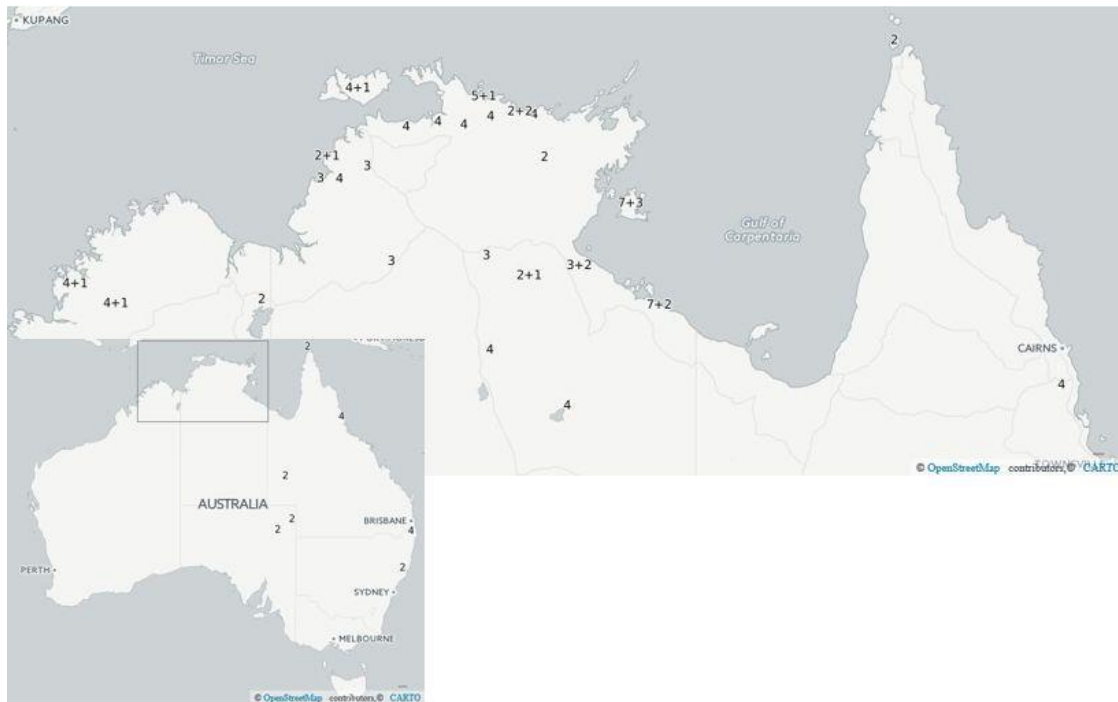
Map 5: Number of noun classes. For an online, dynamic version, see: http://bit.ly/nc-number.

5.2.1. Semantic range

If there are only two classes, they are usually called masculine and feminine (or non-feminine and feminine), and cover at least human male and female referents respectively. A third and fourth class are often called 'vegetable' and 'neuter' or 'residue', and in Mawng a fifth class is called the 'land' class (Singer 2006: 164). In addition, some languages make a distinction between male human and female human, as well as masculine non-human and feminine non-human (see Alpher [1987], Bani & Alpher [2008], and Harvey [1997] on the assignment to masculine and feminine, and the question which is the unmarked class), and Yanyuwa distinguishes a class of non-meat food from an arboreal class (Kirton 1971: 28-29). In Limilngan, there are no

separate masculine and feminine classes, but the distinction is between humans and animates (as well as two other classes) (Harvey 2001: 45).

Unlike with the classifier constructions described in sections 3-4, the assignment of nouns to these classes is overall less semantically transparent, as could be expected in a more grammaticalised system. However, Corbett (2007: 258) maintains that even the most opaque systems have a semantic core to their classes. When there are more than two classes, the masculine and feminine can either be used exclusively for nouns referring to male and female humans respectively (and perhaps some mythological figures or domestic animals) or they can include a variety of other nouns. It is more difficult to generalise over the other classes. The vegetable class typically has a semantic core including plants, but usually also has many other types of noun assigned to it. In Bininj Gun-wok, for instance, the vegetable class contains not only plants and their products, but also sexual and excretory body parts, song, ceremony and custom, fire, (vegetable and other) food, some types of honey, boats, planes and cars, and so on (Evans 2003a: 202). Some grammars suggest a semantic core based on shape for some classes. For instance, the Jingulu masculine class includes inanimates which are round and/or flat, and the vegetable class includes objects that are long and thin or pointed or sharp (Pensalfini 2003: 160-161). Mythological and cultural considerations can also play a role, as in Wambaya (Nordlinger 1998: 60) or in Worrorra (Clendon 2014: 70-72). In Worrorra, for instance, the sun is allocated to the feminine gender because the operation of the sun involves a "mother sun who (…) give[s] birth to daughter suns, each of whom in turn travels through the sky and dies at the end of each day" (Clendon 2014: 71). Another potentially relevant principle is that entities which are exceptional members of their class also have exceptional class assignment (e.g. Dyirbal [Dixon 1972: 308-311]; Mawng [Singer 2006: 165]). For example, in Mawng snakes belong to the masculine class, except for *wulminkaykay* 'file snake', the only snake that is a traditional food source, which belongs to the feminine class (Singer 2006: 165). Phonological features do not seem to play a role in the majority of languages, although Harvey (2002: 149-150) argues that phonological similarity can provide a basis for assignment to a particular class in Gaagudju (similarly in Enindhilyakwa for loanwords [van Egmond 2012: 99], in Jingulu [Pensalfini 2003: 160] and in Limilngan [Harvey 2001: 45]). The underlying principles of class assignment are often also demonstrated in the way in which loan words are integrated in the system. In Tiwi (Lee 1987: 81), for instance, loan words are classified based on the same principles as traditional ones: *pirijirayita* 'refrigerator' is classified as feminine

because it is 'large, round and ample', while *tayipuli* 'table' is classified as masculine because it has legs.

5.2.2. Variable class assignment

As with classifiers, many languages show at least some instances of variable assignment to classes, though perhaps not as frequently. In grammatical descriptions, this is often called 'disagreement', as only the class markers on the agreement targets change while the form of the head noun remains unchanged. Variable assignment is perhaps more unexpected for a more strongly grammaticalised system like noun classes, and the question is in how far this affects the supposedly 'grammatical' status of these systems. There are two main motivations for variable agreement, one relating to natural gender, and another relating to perspectivisation (similar to the variation described for classifiers, see section 3.2.2). In addition, there are also two types of structures that look like variable assignment, but are in fact quite different phenomena.

The first type of variability is agreement according to the natural gender of the referent. Some languages have nouns that do not have an inherent class, but can control masculine or feminine agreement (i.e. "nouns of common gender" [Corbett 2007: 251]). This is the case, for instance, in the Ungarinyin structures in (1-26) (Rumsey 1982: 38). In other cases, the noun does have an inherent or grammatical class, but this can be overruled by natural class. This is possible, for instance, in Wambaya (Nordlinger 1998: 70-71), where the noun *wuwunji* 'honey, sugarbag' is inherently a class I noun (an 'animate' class), but can trigger agreement as class IV, based on the natural 'inanimacy' of the referent, as in (1-27a). In (1-27b) this is 'corrected' in repeated, monitored speech.

(1-26) Ungarinyin (Rumsey 1982: 38)
      a. *yila*   *djiri*
         child   M.ANAPH
         'little boy'
      b. *yila*   *njindi*
         child   F.ANAPH
         'little girl'

(1-27) Wambaya (Nordlinger 1998: 70-71)

    a.   *Aliyulu*   *ng-a*   *bulyungu*   *wawunji.*

        find   1SG.A-PST   little.IV (ACC)   sugarbag.I(ACC)

        'I found a little sugarbag.'

    b.   *Aliyulu*   *ng-a*   *bulyingi*   *wawunji.*

        find   1SG.A-PST   little.I(ACC)   sugarbag.I(ACC)

        'I found a little sugarbag.'

A second motivation for variable assignment is a different representation based on the discourse context. This is, in fact, not unlike the variability we observed for generic-specific constructions, where different generics profile different aspects of the referent in different discourse contexts (see section 3.2.2). For instance, animals can receive masculine or feminine class marking when represented as Dreamtime beings in Mangarrayi (Merlan 1989: 51), Enindhilyakwa (van Egmond 2012: 98) and Ungarinyin (Rumsey 1982: 37). Other examples are found in three further languages of the sample. In Mawng (see Singer [2006, 2016] for detailed accounts), class marking can alternate when an entity undergoes a transformation to serve a human purpose, e.g. when iron (masculine) is used to make a shelter (shelters and houses regularly belonging to the edible noun class). It can also alternate when a Dreamtime being becomes a permanent landscape feature. Other alternations in Mawng are argued to be instances of homonymy (see below), but they may in fact also fall under this type. These are, for instance, alternations based on trees and their products (as in (1-31c-d) below), or the alternation seen for *kurrula* 'sea, seawater', which controls masculine agreement in (1-28a) for reference to "the sea as a body of water or 'force of nature'", and land agreement in (1-28b) for reference to the actual liquid (Singer 2006: 171). Similarly, in Giimbiyu, *wukkuk* 'water' can be classified in the vegetable class when seen as feature of the landscape or in the neuter class when seen as something to drink (Campbell 2006: 42). Finally, in Limilngan, humans can be classified in class II instead of the regular class I, to indicate that the referent is comparatively more powerful (see Harvey [2001: 48] for more details).

(1-28) Mawng (Singer 2006: 171)

    a.   *"Inyi*   *ku-ti-ø*   *wurlupurlup* *nu-latparlangkatja*   *kurrula."*

        NEG.IMP   2PL-STAND-NPST   swim   M-strong   M   sea

        "Don't swim the sea's rough (lit: strong)."

b. *"Tuka   ta   kurrula.   Inyi   kurrun-ta-ø."*
    DEM:PROX.LL   LL   saltwater   NEG   2PL>3LL-drink-NPST

    "This is seawater. Don't drink it."

Such 'perspectivising' uses of noun classes are rarer than in classifier systems (the examples above are the full list in the sample),[22] in line with the fact that noun classes are more grammaticalised systems.

There is another set of alternations in the sample that look similar, but is analysed slightly differently in the literature, because it is not entirely clear that one single lexeme is involved. Examples (1-25) above and (1-29) below from Bininj Gun-wok illustrate how one noun stem can occur with different prefixes, in both cases lexicalised, but with related meanings (e.g. in a relation of metonymy), as argued by Evans (2003a: 183-184, 186-188). Similarly, example (1-30), from Enindhilyakwa, shows the same noun stem meaning 'mouth' in the neutral class and 'cave' in the vegetable class. Van Egmond (2012: 98) argues that these are separate lexemes, though with related meaning, because there is no flexibility in class assignment synchronically. Finally, the examples in (1-31) from Mawng are slightly different in that the form of the nouns is the same, but they control different class agreement. Singer (2006: 168-169) regards these as homonyms. In fact, the borderline between cases like these and variable agreement as discussed above is not always clear: for instance, if the senses are clearly related, as in (1-31c-d), alternations could also be analysed as one referent being treated from different perspectives (the tree in itself vs. the belt made from that tree). The key question is probably whether the different senses are related in a synchronically transparent way and whether there is any indication of lexicalisation.

(1-29) Bininj Gun-wok (Evans 2003a: 5; own glossing)

a. *kun-mim*

    IV-?

    'eye'

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[22] It also, and perhaps more regularly, occurs in Ngalakgan (Baker 2002), which is not in the sample. Baker (2002) focuses on the noun class marker on the verb, which disagrees with the noun it cross-references based on the context: e.g. is the object we are talking about seen as a 'type of spear shaft' or a 'type of tree'?

b. *man-mim*

III-?

'fruit'

(1-30) Enindhilyakwa (van Egmond 2012: 98)

a. *edhvrra* 'mouth' (N)

b. *medhvrra* 'cave' (VE)

(1-31) Mawng (Singer 2006: 168-169)

a. *minyngu*

'dirt and sweat on the body' (VE)

b. *minyngu*

'ceremony' (M)

c. *marriwi*

'tree species used to make string' (VE)

d. *marriwi*

'string belt' (M)

To round off this discussion of variable assignment, I discuss one last phenomenon that looks like it, but should in fact be analysed in terms of class neutralisation, with an unmarked class that can replace regular agreement. This phenomenon is also known as 'superclassing' in the Australianist literature, whereby "an unmarked agreement class (the superclass) may replace the inherent class of the referent noun that would normally appear on the modifier" (Sands 1995: 264). This is found in at least 6 languages of the sample: Bininj Gun-wok (see below), Gaagudju (Harvey 2002: 153-157), Jingulu (Pensalfini 2003: 166-169), Limilngan (Harvey 2001: 46-49), Warray (Harvey ms: 33-34) and Worrorra (Clendon 2014: 90-94; especially in possessives).[23] Superclassing is usually organised in terms of one human/animate superclass (masculine) and one non-human/inanimate superclass (depending on the language, vegetable or neuter), with potentially even one single super-superclass (masculine). For instance, in Bininj Gun-wok, the masculine and vegetable class are the unmarked animate and inanimate classes respectively, while the female and neutral classes are marked. Overall, the inanimate class is more marked than the animate class

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[23] Another candidate is Mangarrayi (Merlan 1989: 110-111). In this language, the demonstrative paradigm is defective in the neuter paradigm, i.e. there is only one neuter form which can be used for nominative and accusative, and not for other cases. When there is no neuter form available, the masculine is used. Interestingly, the masculine form is also sometimes used in nominative and accusative (even though a neuter form is available). This neutralisation seems to be less extensive than in the other languages.

(Evans 2003a: 200). This can be seen in neutralisations like in (1-32a), where the plural context results in masculine agreement, instead of the expected feminine agreement (Evans 2003a: 212-216). This can also be observed in differences between dialects (ibid.: 182): Kunwinjku has the maximum of four classes, but Mayali only has three, where the most marked class (neutral) has disappeared and now shows vegetable agreement; compare (1-32b) from Kunwinjku with (1-32c) from Mayali. Kune has even lost its noun class system altogether and all nouns control masculine 'agreement', as shown in (1-32d).

(1-32) Bininj Gun-wok (Evans 2003a: 214, 182; own glossing for b-d)

      a. *Na-meke   dah-daluk   birri-gih-gimuk.*
          M-that   RDP-woman   3A.PST-RDP-big
          'Those women are big.'

      b. *kun-warrde kun-mak*
          IV-rock   N-good
          'good rock' (Kunwinjku)

      c. *gun-warrde   an-mak*
          IV-rock   VE-good
          'good rock' (Mayali)

      d. *kun-warrde   na-mak*
          IV-rock   M-good
          'good rock' (Kune)

5.2.3. Use of noun class systems

We can round off this section with some comments on how and why noun class systems are used. Unlike with noun classifiers, the use of noun classes is grammatical and thus normally obligatory (but see section 5.1 for an exception). As a grammatical system, its function has mainly been associated with 'reference tracking' (e.g. Corbett 1991; Heath 1983), but Merlan et al. (1997) see a much broader function, which includes both the instantiation and the maintenance of reference (labelled together as "reference management"). Singer (2016: 81; 83-102) adds to this the function of verb sense disambiguation in Mawng: noun class agreement helps in selecting the relevant sense of the verb.[24] For instance, the verb –*la* 'consume' typically takes land gender

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[24] Some of these agreement patterns have even become lexicalised (Singer 2016: 103-172).

object agreement when the sense 'drink' is intended, even if the object noun itself typically has another gender. In (1-33), for example, the speaker is asked to describe a vampire drinking blood and first gives the response in (1-33a), with the verb showing vegetable gender marking, in agreement with the gender of the object ('blood'), but then immediately corrects it with the agreement prefix on the verb in the land gender which is felt to be more natural (1-33b) (Singer 2016: 83). Apart from these general functions, noun class systems can also have more specific discourse functions. One example from the sample concerns (dis)agreement with female nouns in Warray, where agreement is said to correlate with 'new information' and disagreement with 'given information' (Harvey 1986: 55).

(1-33) Mawng (Singer 2016: 83)

    a. *Maningul*   *kamani-la-Ø.*

       blood(VE)   PRS.3M>3VE-consume-NPST

       'He drinks blood.'

    b. *Not*   *kamani-la-Ø!*   *K-ani-la-Ø.*

       (English) PRS.3M>3VE-consume-NPST   PRS-3M>3LL-consume-NPST

       'Not "He consumes it (VE)" but "He drinks it (LL)".'

6. In between classifier and noun class systems

There are two languages in the sample whose systems of classification are in between the two poles of noun class and classifiers: Ngan'gityemerri and Marrithiyel, from the Southern Daly and Western Daly families respectively, genetically unrelated but part of the Daly River Sprachbund (Evans 2003b: 13). Both cases have been discussed extensively in the literature (Reid 1997; Green 1997), and especially Ngan'gityemerri has been cited as evidence of the grammaticalisation pathway towards noun classes in several typological surveys (e.g. Aikhenvald 2003: 92-93; Corbett 2007: 254-255; Seifart 2010: 727-728).

    The classification systems in Ngan'gityemerri (Reid 1997) and Marrithiyel (Green 1997) show features of both noun classifiers and noun classes. As with classifiers systems, there is quite a large number of generics (15 and 13 respectively), (some) generics have free forms (alone or in addition to bound forms), the use of freeform generics is optional, generics can occur by themselves (anaphorically or in reference to a general category), class assignment is semantically quite transparent, and not all

nouns are assigned to a class (although most are). As with noun class systems, however, some generics have bound forms (alone or in addition to free forms), there is agreement in the NP (both for free forms and for bound forms,[25] albeit optionally), and elliptical NPs have to include a generic/class marker to be grammatical (as illustrated in (1-34) for Marrithiyel). The examples from Ngan'gityemerri in (1-35a-c) illustrate the availability (and co-occurrence) of free and bound forms. Variable assignment is possible, both for free forms, as in (1-35d), and for bound forms, as in (1-35e-f). The variation in (1-35e-f) can be explained in the following way: the head noun denotes a tree which has no useful parts apart from its fruit and is thus assigned to the 'vegetable' class, with its modifiers normally showing 'vegetable' agreement, as in (1-35e) where reference is actually made to the fruit, and not the tree. However, when explicit reference is made to the whole tree rather than its fruit, the modifiers 'disagree' with the head noun and receive 'tree' agreement, as in (1-35f). In other words, the variation seems to involve different construals of the referent.

(1-34) Marrithiyel (Green 1997: 244-245)

 a. *watjen sjikim ginidin-a*
  dog black 2SG.S:REAL:see-PST
  'Did you see the black dog?'

 b. *a- sjikim ginidin-a*   c. **sjikim ginidin-a*
  LA- black 2SG.S:REAL:see-PST black 2SG.S:REAL:see-PST
  'Did you see the black creature?'

(1-35) Ngan'gityemerri (Reid 1997: 177, 175, 174, 178, 201)

 a. *(tyin) gan'gun   (tyin) kinyi nganam-garri-fulirr-ngirim*
  WOOMERA fish.spear.woomera WOOMERA this 1SG.S:AUX-leg-rub-1SG.S:sit
  gugarra
  red.ochre
  'I am rubbing ochre into the length of this fish spear-type woomera.'

 b. *(miyi) mi-meli   wurrbun-ba-ket*
  VEG VE-purple.plum 3PL.S.lash-arm-cut
  'They are picking purple plums.'

 c. *wa=tyerrmusye (wa=)mirrisyarra perrety-meny*
  M=old.man   M=blind   die-3SG.S:do
  'That old blind man has died.'

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[25] If there is a choice between free forms and bound forms, the bound forms are used for agreement.

   d. *syiri*   *yawurr -*   *kini*   *yawurr*

       STRIKER   stick   DIGGING.STICK   stick

       'stick for fighting'   'stick for digging'

   e. *mi-menem*   *mi=biny*   *werrmim-ba-ket*

       VE-billygoat.plum   VE=ripe   3PL.S:AUX-arm-cut

       'They are picking ripe billygoat plums.'

   f. *mi-menem*   *yerr=kinyi*   *yerr=syari*   *yubu-ket-Ø*

       VE-billygoat.plum   TREE=this   TREE=dry   2SG.S:AUX-cut-IMP

       'Chop down this withered billygoat plum tree!'

The 'in between' status of these two languages has been analysed as the result of an evolution from a noun classifier system to a noun class system, with agreement as a first step in the grammaticalisation process (see e.g. Dixon 1982c; Reid 1997; Seifart 2010). Green (1997) argues that an alternative approach to this problem is simply to state that agreement is not necessarily a feature of noun class systems, but only typically.

7. Multiple classification systems

To round off this chapter, I briefly comment on those languages in the sample that have more than one classification system. I should first note that there are several languages for which the descriptions posit several concurrent systems, but which I analyse in a different way. For instance, van Egmond in her description of Enindhilyakwa (2012: 94-100, 108-111) distinguishes 'gender' (for human referents) from 'noun class' (for non-human referents). The two sets of markers are in complementary distribution, however, so it is unclear to me why it is necessary to posit separate classification systems (except that the human classes distinguish number and the non-human ones do not, see above). Harvey in his grammar of Gaagudju (2002: 127-128) distinguishes between 'gender' (four classes, marked on adjective, demonstrative and absolutive verb prefixes, and commonly with non-human reference) and 'noun class' (two classes, marked on numerals, ergative verb prefixes, free pronouns, indirect object clitics and number clitics, and rarely having non-human reference). Since there is a regular mapping between the two paradigms (Class I = Masculine gender, Classes II, III, IV = Feminine gender), and a neat correlation with word class and/or case, the smaller paradigm can in fact be analysed

as a neutralisation of the four 'genders' in certain word classes or cases (see also Sands 1995: 248-249). Finally, Evans in his analysis of Bininj Gun-wok (2003a: 181-184), uses 'noun class' for a set of derivational prefixes that are part of nouns (i.e. part of the lexicon), while 'gender' is used for inflectional agreement prefixes on the modifiers of the noun (i.e. the type of nominal classification studied here).

Apart from such apparent cases, there are 10 languages in the sample that genuinely have more than one classification system: seven have both generic-specific structures and noun classes, and three have both verbal classifiers and noun classes (one of which also has adjectival classifiers).

Two languages of the first group, Diyari and Yandruwandha, are situated in central Australia, and have regular, quite well-developed generic-specific structures with 9 and 5 generics/classifiers, respectively. In addition, both also have a feminine – non-feminine distinction in the personal pronouns, which can be used as modifiers to nouns and thus show the noun class of the noun (see also in chapter 5, section 3.3). Class assignment is quite simple: only animates whose reference is "distinctly female" (Austin 2011: 64) belong to the feminine noun class and all others to the non-feminine noun class. The other five languages with both noun classifiers and noun classes are all found in one region in the north of Australia, viz. the three Daly languages Emmi, Malakmalak and Wadjiginy, and nearby Wardaman and Warray. They all have a small number of generics, and for three languages (Emmi, Wardaman and Warray), the use of generic-specific structures seems to be infrequent. The noun classes show limited agreement (e.g. only on bound pronouns and a small set of adjectives in Malakmalak), except in Wardaman, and in Warray they are said to be 'semi-lexicalised' (e.g. some adjectives receive a fixed class prefix, regardless of the noun they modify).

For the languages with both verbal classifiers and noun classes, we can distinguish between Bininj Gun-wok and Enindhilyakwa on the one hand, and Rembarrnga on the other. Rembarrnga has both a limited noun class system, with only a female – non-female distinction in free pronouns in agreement with a head noun, and a limited system of incorporated generics. The other two languages have both a well-developed noun class system and a well-developed verbal classifier system. In addition, Enindhilyakwa has a system of adjectival classifiers (as already discussed in section 4).

In most of the languages where two systems co-occur, it seems that at least one of them is rather limited, in terms of the size of the system or its use. The other system can be better-developed (as in Diyari, Yandruwandha and Wardaman), or both systems can be somewhat limited (as in Emmi, Malakmalak, Wadjiginy, Warray and

Rembarrnga). Bininj Gun-wok and Enindhilyakwa are the exceptions to this generalisation: as just mentioned, they have both well-developed systems of noun classes and of verbal classifiers.

8. Conclusion

This chapter has provided a survey of nominal classification, which is without any doubt the most intensively studied aspect of NP structure for Australian languages. I have tried to synthesise the available literature, and have situated Australian languages in a general typology of nominal classification. The data from the sample are largely in line with the literature: generic-specific structures and noun classes are well-attested, and verbal and adjectival classifiers are somewhat rarer. The survey also highlighted a few issues that remain unresolved. For instance, the syntactic analysis of generic-specific structures remains uncertain. There is some discussion on which element is the head of the structure, and whether the generics in these structures are 'true' noun classifiers (even though, as argued above, the status of these noun classifiers is equally unclear, which makes it difficult to use them as a standard of comparison). I have also suggested that Wilkins' proposal (2000) to take the construction (rather than the individual generic) as the basic classifying unit is perhaps the most interesting lead for future analysis in many languages. Another point that surfaced concerns the distinction between noun classes and noun classifiers, which is not always as clear-cut as suggested in some of the typological literature. For instance, class variation for perspectivisation is not only found with generics, but also in systems with noun classes (see, in particular, the work of Singer [2016]), though to a lesser extent and in fewer languages. A second relevant argument, well-known from the literature, concerns languages that show features of both classifiers and noun classes, and are thus clearly in-between the two, like the two Daly languages Ngan'gityemerri and Marrithiyel.

Chapter 2: Qualification and quantification

The second survey chapter discusses two domains that are reasonably well-analysed in the Australian literature, but not to the extent found for classification. Section 1 discusses qualification, focusing on the question of the class of 'adjectives' and their status in the NP, while section 2 discusses quantification, focusing on the general category of number, as well as different types of semantically more specific quantifiers.

1. Qualification

The first functional domain I discuss in this chapter is qualification, which can broadly be defined as elements which describe a characteristic of the referent of the NP. The prototypical qualifier is an adjective, which consequently receives most of the attention in this section. Other types of qualifying elements, like possessives, are only touched upon in passing, but will be dealt with in more detail in chapter 5.

1.1. Typological background

Qualifiers can be defined functionally as modifiers in the NP which describe a property of the referent, like *tall* in the English structure in (2-1).

(2-1)   English (Indo-European)
          the tall man

In English, an element like *tall* belongs to a word class that is specialised in this function, viz. adjectives, and it can qualify the head of the NP directly, as shown in (2-1). These two issues, viz. word class and syntactic realisation, are in fact the most prominent questions in the literature on the typology of qualification. Not all languages have a specialised word class for qualification (like adjectives in English), and even where it is posited, the existence of such a distinct word class is often debated. Another issue is how qualification is realised syntactically, specifically whether direct qualification of the head noun is possible, and if so, what it looks like. The two questions are, in fact, interrelated, as is shown in the rest of this section.

The question of identifying a word class of adjectives has been tackled in many different ways in the literature, using various combinations of criteria, relating to meaning ('adjectives denote properties'), morphology ('adjectives have distinct morphological potential') and syntax ('adjectives can serve as modifiers in referential phrases') (e.g. Dixon [1982d, 2004, 2010], Hengeveld et al. [2004], Schachter & Shopen [2007] amongst many others; see also Haspelmath [2012] for an overview of the literature). For some languages there is a clear consensus on the existence (or not) of a separate adjective class, whereas for others there is serious debate (many Australian languages belong to the last category, as shown in the following section). The basic typological options appear to be as follows. First, if a language has a class of adjectives, this can either be an open class (as in English [Dixon 1982d: 3]), or a closed class (as in Igbo, which has a set of eight adjectives [Schachter & Shopen 2007: 14]). If a language does not have a distinct class of adjectives, again there seem to be two basic options (following the analysis of Hengeveld et al. [2004: 530-541] and Hengeveld & Rijkhoff [2005: 407]). The first one is that word classes are flexible, which means that lexemes are not specialised in one single syntactic function. In such cases, the typical 'adjectival' function of modification is one of the functions of a broader word class that has other functions as well, e.g. there is a class of 'nominals' that can serve directly, i.e. without any morphological or other changes, as the head and as the modifier of a referential phrase. The alternative is that word classes are rigid, i.e. each lexeme is associated with one specific function. If there is no adjective class, this means that elements from other classes, with other basic functions, will take over the adjectival function using special constructions, e.g. a relative clause in languages that only have a rigid class of verbs (see further below in example (2-3b)).

As already mentioned, the assignment of a language to one of these types is often debated. A recent example from the typological literature is Quechua, traditionally analysed as lacking a noun-adjective distinction (e.g. Weber 1989: 35-36; Hengeveld et al. 2004: 539; Schachter & Shopen 2007: 17), but more recently re-analysed as having one (Floyd 2011). Basically, the discussion boils down to whether nouns and adjectives are separate word classes, or subclasses of one 'nominal' word class. The final decision depends on which criteria are prioritised, and where precisely one draws the line between classes and subclasses (see also Haspelmath 2012).

The second issue in the typology of qualification is how it is realised syntactically. The answer to this question partly depends on the type of word class system a language has. A language which has a separate adjective class (i.e. specialised in serving

as a modifier in a referential phrase) by definition allows direct qualification, as in (2-1) above from English. A language without a separate class of adjectives that is otherwise flexible in its word classes also allows direct qualification, but there is no set of lexemes that is specialised in this function. In Warao, for instance, which only distinguishes between a class of verbs and a class of non-verbs (in the analysis of Hengeveld et al. [2004]), one single non-verb can function both as a referential head (as in (2-2a)) and as a modifier (as in (2-2b)), without any morphological or other modification. A language without a separate class of adjectives that is otherwise rigid in terms of its word classes, does not have lexemes that can be used for direct modification of the referential head, and thus needs other methods for qualification. An example can be found in (2-3) from Garo, a language with only rigid classes of verbs and nouns but no adjectives or adverbs. In this type of language, modification of a referential head can be realised by using relative clause structures headed by lexemes from the verb class. Example (2-3a) shows a simple inflected verb, and (2-3b) shows how the same lexeme is used to modify a referential head: not directly (as a rigid class, verbs can only function as predicates), but through relativisation, which makes predicates available for nominal modification.

(2-2)   Warao (Warao; Romero-Figeroa 1997: 49f.; cited in Hengeveld et al. 2004: 531)

    a.   *yakera*

       beauty

       'beauty'

    b.   **Hiaka   yakera** *auka   saba tai   nisa-n-a-e.*

       garment beauty daughter for   she   buy-SG-PUNC-PST

       'She bought a beautiful dress for her daughter.'

(2-3)   Garo (Sino-Tibetan; Burling 1961: 27, 33; cited in Hengeveld et al. 2004: 531)

    a.   *da'r-aŋ-gen*

       big-ITER-FUT

       'It will get big.'

    b.   *da'r-gipa mande*

       big-REL   man

       'the big man'

The interrelated questions of word class and syntactic realisation are the most important issues to come out of the typological literature, but there are a few other questions that have received some attention. Some of these concern the complexity

of qualifying structures: does an NP allow multiple adjectives, and can adjectives themselves be modified, e.g. by degree modification? Some languages easily allow multiple adjectives, as shown for English in (2-4), where two descriptive adjectives qualify the head noun, and an intensifier *very* modifies the first descriptive adjective. For others, however, it has been suggested that that complex qualifying structures are restricted. In Hup, for instance, if more than one adjective is used, they cannot be used as modifiers; instead, they are nominalised (by adding *tih=* '3sg') and form (appositional) NPs on their own, as shown in (2-5) (as shown by Krasnoukhova 2012: 174, referring to Epps 2008: 332). Another example is Indonesian, where a single adjective may directly modify a noun as in (2-6a), but an adjective which is further modified cannot directly modify the noun, and must be expressed by a relative clause, as in (2-6b) (Dryer 2007a: 173). Where multiple adjectives are permitted, their ordering has only been studied in detail for very few languages (e.g. English, see Bache 1978; Dixon 1982d: 24; Quirk et al. 1985: 437; Adamson 2000; Wulff 2003); cross-linguistically there is much less work on this question (but see Flanagan 2014).

(2-4)   English (Indo-European; Ghesquière 2009: 314)
        very beautiful little flowers

(2-5)   Hup (Nadahup; Epps 2008: 332; cited in Krasnoukhova 2012: 174)

núp=tat	*tɨh=pŏg*	*tɨh=pǎy*	*nɔh-yɨʔ-ɨy*
this=fruit	3SG=big	3SG=bad	fall-TEL-DYNM

'this big ugly fruit fell'

(2-6)   Indonesian (Austronesian; Sneddon 1996; cited in Dryer 2007a: 173)

a. *rumah*   *besar*
    house   big
    'a big house'

b. *jas*   *[yang*   *terlalu*   *besar]*
    jacket   REL   too   big
    'a jacket which is too big'

In the following sections, I discuss the two major typological questions with respect to Australian languages. I start with the issue of word class (section 1.2), followed by some thoughts on the question concerning syntactic qualification (section 1.3).

1.2.   Adjective classes in Australian languages

For Australian languages in general, there are divergent opinions about the existence of a separate class of adjectives. In two major surveys about twenty years apart, for instance, Dixon argues both for and against the idea that Australian languages have a distinct adjective class: Dixon (1980: 274) states that they "have a rich open class of adjectives with some hundreds of members," while Dixon (2002: 67) argues that "[n]ouns and adjectives generally show the same morphological and syntactic possibilities, so that it can be difficult to give criteria for recognising them as distinct classes." Because of this attention in the general Australianist literature, most grammatical descriptions in the sample explicitly discuss the question whether a particular language has distinct classes of nouns and adjectives or one encompassing class of 'nominals'. The arguments in favour of or against a separate adjective class are diverse, and the conclusions can diverge, even if very similar criteria are used.

There are four types of criteria that grammars rely on: semantic, functional, morphological, and syntactic. I list these briefly below; more detailed discussion of each separate criterion follows in the next few sections.

(i)   Semantics: Nouns generally denote things, while adjectives denote properties.

(ii)   Function: Nouns normally function as referential heads, while adjectives normally function as attributive modifiers. If adjectives appear to function as heads, this is only in elliptical contexts. If nouns function as modifiers, this is restricted to particular contexts.

(iii)   Morphological processes:
   a.   Nouns and adjectives have different morphological potential, e.g. they undergo different derivational processes.
   b.   The same lexeme has different forms when functioning as a noun or as an adjective (i.e. one can be derived from the other).

(iv)   (Morpho)syntax:
   a.   There is a difference in word order for nouns and adjectives.
   b.   Nouns normally belong to only one noun class, while adjectives are marked for the class of the noun they modify (and can thus be marked for any class).
   c.   Adjectives can be modified by degree modifiers, while nouns cannot.

Before going into the specifics of each criterion, it may be useful to look at how the criteria are combined in particular languages and what can be concluded from such combinations. To illustrate this, I have organised data for 10 languages in the sample in a table (table 3), showing which criteria are relevant and what is concluded from them in the grammatical descriptions. The numbers (i-iv) in the header of the table refer to the criteria listed above.

As the table shows, the three main options concerning the question of word classes in the sample are (i) a separate adjective class, (ii) no separate adjective class but rather one 'nominal' class, (iii) one 'nominal' class in which several subclasses, like nouns and adjectives, can be distinguished. In terms of the general typology outlined above, this implies that Australian languages either have a rigid class of adjectives, or a flexible class that covers both adjectival and nominal functions; the other options in the general typology are not attested. The relevant classes are usually open, as they are in all of the languages in this table, but there are a handful of languages in the sample that have closed classes, viz. Malakmalak (Birk 1976: 27; Hoffmann p.c.), Nyangumarta (Sharp 2004: 84), Tiwi (Lee 1987: 88), Gaagudju (only for two of the three subclasses of adjectives, Harvey 2002: 129), and possibly[26] Mathi-Mathi (Blake et al. 2011: 78), Paakantyi (Hercus 1982: 53) and Dharumbal (Terrill 2002: 37).

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[26] Adjectives are "few in number" (Blake et al. [2011: 78] on Mathi-Mathi; Hercus [1982: 53] on Paakantyi), but it is unclear whether they are truly a closed class, or that just not many examples of adjectives have been attested. Similarly for Dharumbal, "[t]here are three clear adjectives in the data" (Terrill 2002: 37).

Language	(i)	(ii)	(iii-a)	(iii-b)	(iv-a)	(iv-b)	(iv-c)	Conclusion in the grammar
Anguthimri	yes	?	no	no	yes	n/a	?	separate A class (Crowley 1981: 162)
Arrernte	yes	yes	yes	some	yes	?	yes	separate A class (Wilkins 1989: 104)
Bardi	yes	yes	yes	no	yes	?	yes	distinction between N and A, but not very robust (Bowern 2012: 158)
Garrwa	?	unclear	no	no	no	n/a	?	no separate A class (Mushin 2012: 44)
Gumbaynggir	yes	no	no	no	no	n/a	?	no separate A class (Eades 1979: 271)
Kuuk Thaayorre	yes	no	no	some	yes	yes	yes	'nomen' class includes A, N and quantifiers (Gaby 2006: 78)
Walmajarri	?	no	yes	yes	no	?	?	unclear
Yankunytjatjara	yes	yes	no	?	yes	?	?	nominal class includes open classes of N and A, along with dem, pron and definite marker; distinction between N and A not always clear-cut (Goddard 1985: 17)
Yawuru	yes	yes	yes	some	no	n/a	?	formally one class of 'common nominals' (incl. N, A, indefinite pronoun) (Hosokawa 1991: 20-21)
Yir Yoront	yes	no	no	some	yes	?	yes	substantives and adjectives are subclasses of 'noun' class (Alpher 1973: 50)

Table 3: N vs. A in 10 languages of the sample

Even if the overall profile of Australian languages is clear, however, it is far from straightforward to see what evidence leads to what conclusion about word classes in this domain. As can be seen in the table, evidence is used in different ways in the literature, and the decision often boils down to the weight one gives to each of the criteria and to where one draws the line (if you wish to draw a line at all; see also Haspelmath [2012]). For instance, for both Anguthimri and Arrernte it is argued that there are separate noun and adjective classes, but for Anguthimri this is done on the basis of word order differences and semantic differences only (Crowley 1981: 162), whereas Arrernte also shows morphological differences between nouns and adjectives (Wilkins 1989: 104-105). Conversely, in Yawuru, it is argued there is no separate adjective class, in spite of some morphological and functional differences (Hosokawa 1991: 20-21). In general, many authors decide on a 'compromise' solution in which nouns and adjectives are seen as subclasses of the nominal word class, since there are some differences between them but not enough to posit separate classes (e.g. Meakins & Nordlinger [2014: 80-82] on Bilinarra; Patz [2002: 42] on Kuku Yalanji; Green [1989: 44] on Marrithiyel). Often, there are also other subclasses in the same nominal word class, like demonstratives or pronouns (e.g. Wadjiginy [Ford 1990: 71]; Duungidjawu [Kite & Wurm 2004: 23]; Jaminjung [Schultze-Berndt 2000: 45]). When there are only semantic differences, some authors decide that there is one word class (e.g. Eades 1979: 271-272 on Gumbaynggir), while others regard this as sufficient evidence for separate subclasses (e.g. Haviland [1979: 45-46] on Guugu Yimidhirr). The online version of map 6 below gives information on the criteria used for individual languages and the conclusions drawn in the grammar. Because it is so difficult to obtain a consistent picture from the literature, I will not discuss aggregate decisions in any more detail in this section. Instead, I focus on the different individual criteria listed above, and summarise the specific arguments and conclusions based on the presence or absence of these criteria.

Map 6: Nouns vs. adjectives. For the online, dynamic version of this map, including more information on the criteria, see: http://bit.ly/N-A-criteria.

1.2.1. Semantic criteria

Semantics is probably the most vague criterion in the set, but it is used in the grammars of the sample in a number of ways. Perhaps the most interesting application of this criterion is found in the grammars of Bardi (Bowern 2012: 265) and Yir Yoront (Alpher 1991: 25), where the distinction between nouns and adjectives is linked to the choice of question words. In Bardi, for instance, the answer to a question *nyirra* 'how' or *jana* 'which' is in the form of an adjective, while the answer to a question *anggi* 'what' is in the form of a noun (Bowern 2012: 265). In other grammars, semantics is used in a more general way: there are 47 languages (see map 6) where the grammar mentions a general semantic distinction between nouns, which typically express entities, and adjectives, which typically express properties or qualities (the other grammars simply do not mention this criterion at all). Obviously, it is not possible to make such distinctions in a systematic way, as also argued in Dixon (1982d), who shows how features that are cross-linguistically associated with adjectives are not necessarily all found in the adjective class of one particular language. Several grammars in the sample make related observations. For example, in Diyari, the

adjective class covers, amongst others, the semantic domains of value ('good'), dimension ('big'), and physical properties ('ripe'), whereas other domains like human propensity ('fear'), which could be expected to fall in the same category, are expressed by nouns (Austin 2011: 40-41). Similarly, in Gaagudju: "The adjective class does not conform that well to the corresponding semantically defined classes. The adjective class includes a number of stems which are not prototypically adjectives, and conversely a considerable number of prototypically adjectival stems are not members of the formal adjective class in Gaagudju" (Harvey 2002: 130). Because the semantic differences are very general and not clear-cut, the criterion of semantics by itself in most grammars is considered insufficient to discern a separate class of adjectives.

1.2.2. Functional criteria

The functional criterion can generally be described as follows: nouns function as head of the NP, while adjectives function as attributive modifiers, and usually not the other way around. There are a few issues, however, which make this question less clear-cut than it might seem.

One issue is that a lot depends on the analysis of structures where the 'adjective' is the only element of an NP: is the adjective considered to be the head of an NP, or is it considered to be the modifier of an ellipsed head noun? The former analysis (as posited by Eades [1979: 272] for Gumbaynggir, and Nordlinger [1998: 47] for Wambaya, for instance) could be an argument against separate word class status for nouns and adjectives, as they can both function as the head of a referential phrase. The latter analysis (as argued by Bowern [2012: 158] for Bardi, Smith & Johnson [2000: 387] for Kugu Nganhcara, and Green [1989: 44] for Marrithiyel, for instance) could be an argument in favour of separate word class status, as nouns and adjectives do have different functions.

Another issue is where to draw the line for 'nouns' acting as modifiers in the referential phrase: in some languages, nouns cannot act as modifiers at all (e.g. Alyawarra [Yallop 1977: 116] and Burarra [Carew ms on object nouns]), but in others they can (e.g. in Wambaya, though unusually [Nordlinger 1998: 48]). Can only the first group of languages be seen as having separate noun and adjective classes, or also the second? Unfortunately, for most languages, it is not mentioned whether nouns can function as modifiers, and if so, if there are any limitations or restrictions. Most examples I have encountered in the grammars seem to involve human stage-of-life

terms, as in (2-7), or terms for 'man' or 'woman', as in (2-8b) below, which at least suggests that there may be some restriction. If there really are restrictions on the type and number of modifying nouns (but not of adjectives for instance), the existence of modifying nouns should not necessarily be taken as evidence against separate noun and adjective categories (cf. Dixon 2010: 84-85). A related point, observed for one language in the sample, is that NPs with elided heads can only have adjective modifiers that stand alone, as in (2-8a), while this is not possible with noun modifiers, as in (2-8b) in Bardi (Bowern 2012: 158)

(2-7)   Mathi-Mathi (Blake et al. 2011: 112)

    painggu   *murunhi*

    child   young.woman

    'a little girl'

(2-8)   Bardi (Bowern 2012: 158)

    a. *moorrooloo baawa* 'little child' >   *moorrooloo* 'the little one'

    b. *aamba baawa*   'male child' *>   aamba*   (intended) 'the male one'

Other functional criteria that are cited in favour of a distinct class of adjectives are that it is obligatory to have a noun in the NP but not an adjective (e.g. Uradhi [Crowley 1983: 334]), or that adjectives are more likely to be used as predicates than nouns (e.g. Wardaman [Merlan 1994: 58]).

1.2.3. Morphological criteria

Morphological differences are often seen as one of the major reasons to argue for a separate adjective class, or, in the absence of any, against it. However, once again, much depends on how the other criteria play out and the weight one wishes to give to them: are only small differences enough to consider nouns and adjectives separate classes, or conversely, can classes be distinguished even in the absence of morphological correlates? For instance, Dyirbal is argued to have separate noun and adjective classes based on differences in nominal classification (see section 1.2.4), even if there are no morphological differences (Dixon 1972: 61), while Kayardild is argued not to have separate noun and adjective classes, as they have "identical inflectional and derivational possibilities" (Evans 1995: 85).

In the sample, about two thirds of the languages (68 to be exact) show no morphological distinction between adjectives and nouns (or no information is

provided on this in the grammar), with different conclusions for different languages (see above). For most of the other languages, i.e. those with morphological differences, such differences are rather limited, and they come to the surface only in part of the lexicon, in specific circumstances. There are two types of morphological criteria that crop up: one is that nouns and adjectives have different morphological potential, the other is that nouns can be derived to form adjectives, or the other way around. I discuss these in turn; see also map 6 for more details on individual languages.

First, when nouns and adjectives have different morphological potential, this seems to be good evidence for positing separate word classes. However, even here, a question that comes up regularly in the literature is whether these morphological differences really define morphosyntactic classes, or if they can simply be attributed to semantic differences. A first example of differences in morphological potential is when only adjectives, and not nouns, can be used with inchoative or causative affixes to form a verb. This is found in seven languages. An example is Enindhilyakwa, where "the inchoative and causative verbalising stem formatives are almost always suffixed to an adjective" with one or two exceptions where they are suffixed to nouns (Leeding 1989: 144). Similarly in Wambaya (Nordlinger 1998: 47-48), the suffix –*mi*, which derives a verb meaning 'cause to be X, make X', is only found with adjectives, as in (2-9a), and not with nouns, as in (2-9b). Nordlinger, however, argues that these different derivational possibilities are due to semantic differences rather than a word class distinction.

(2-9)   Wambaya (Nordlinger 1998: 48)
    a.   *gurijbi*   *guriny-mi*
        'good'   'make good, make better'
    b.   *juwa*   **juwa-mi*
        'man'   'make into a man'

A second example concerns differences in the process of reduplication for nouns and adjectives. This is found in at least 14 languages (see also below on the use of reduplication to derive adjectives from nouns). In fact, this is not a purely morphological feature because most differences lie in the semantic value of reduplication and not in its form. Typical effects of reduplication for nouns are plurality, diminution, repetition, and derivation of a new noun (or adjective, cf. below), while reduplication of adjectives typically has an intensifying or attenuative effect, or derives adverbs. For instance, in Emmi (Ford 1998: 99), a reduplicated noun

marks plurality, as in (2-10a), while a reduplicated adjective is intensified, as in (2-10b). Another example is Diyari (Austin 2011: 62), where reduplicated nouns are diminutive, as in (2-11a), while reduplicated adjectives are intensified, as in (2-11b). In one language, viz. Arabana/Wangkangurru, there are also purely morphological factors: nouns reduplicated for a diminutive effect allow a maximal reduplication of two syllables, while adjectives derived by reduplicating nouns ('having a great quantity of X') and reduplicated adjectives have a fully reduplicated form, even if the original is longer than two syllables (Hercus 1994: 96-99).

(2-10) Emmi (Ford 1998: 140)

    a. *perre*   *perreperre*

       'grub'   'grubs'

    b. *dukandji*   *dukduk*

       'big'   'very big'

(2-11) Diyari (Austin 2011: 62)

    a. *kinthala*   *kinthakinthala*

       'dog'   'doggy, puppy, little dog'

    b. *parti*   *partiparti*

       'silly'   'mad, crazy'

The other examples of different morphological potential in the sample are a mixed bunch. For instance, some derivational affixes are only attached to nouns, and not to adjectives (e.g. Kuku Yalanji [Patz 2002: 44-45]; Walmajarri [Richards 1979: 103]). In Arabana/Wangkangurru, adjectives can derive adverbs while most nouns cannot (Hercus 1994: 60), and in Bilinarra, adjectives can be derived from coverbs while nouns cannot (Meakins & Nordlinger 2014: 81). In Biri, case marking appears on the head of the NP and all types of modifiers (demonstratives, numerals, quantifiers), except adjectives (Terrill 1998: 14). Adjectives have an oblique stem in Warray, while nouns do not, and they take different inchoative suffixes (Harvey 1986: 70, 74). In Gaagudju, adjectives inflect for all persons and they usually inflect for number, while nouns do not inflect for person and are only exceptionally marked for number (Harvey 2002: 129). In Kuku Yalanji, finally, comparative and intensity markers *jarra-* 'rather, more' and *-baja(ku)* 'very' can only occur on adjectives and quantifiers and not on nouns (Patz 2002: 44).

The second type of morphological difference does not involve divergent morphological potential for the two categories; instead, there are languages where an

item from one category can be derived to form an item from the other. In other words, the same lexeme can have different forms when used as a noun or as an adjective. This is found in 16 languages of the sample; in all of them, only a small part of the lexicon seems to be involved in the process, however. In several languages it is possible to form an adjective by reduplicating the noun, as shown in the examples in (2-12). In the other languages, affixes are used to derive adjectives from nouns, as for instance in (2-13a), or conversely, to derive nouns from adjectives, as in (2-13b).[27] It is unclear if this really provides good evidence for separate categories. The need for derivation does suggest that there is not one flexible class of nominals which can be used as head or modifier without morphological adaptation, but even if this argument is accepted, only a small number of elements is involved, which implies that the evidence remains really minor.

(2-12) a. Warray (Harvey ms: 27)

      muya   *-muya-muya*

      'tucker'   'greedy for tucker'

    b. Yuwaalaraay (Giacon 2014: 15)

      buya   *buyabuya*

      'bone'   'thin, boney'

(2-13) a. Yir Yoront (Alpher 1973: 374)

      ṯuma (stem)   *ṯumuy*

      'fire'   'hot'

    b. Enindhilyakwa (Leeding 1989: 183)

      aningapwa   *ni-ngkw{i}-aningapwi*

      good   3>3M-NMLZ-good

      'good'   'show-off'

1.2.4. Syntactic criteria

Turning now to syntactic criteria, the first feature that is often mentioned in the grammars concerns word order. There are 30 languages for which nouns and adjectives occur in a strict order. For 10 of these, the grammar uses this as an argument to distinguish the categories. For instance, in Arrernte, adjectives always

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[27] But see van Egmond (2012: 125) for a critical analysis of Leeding's (1989: 194-199) analysis of the nominaliser and adjectiviser prefixes.

follow nouns in NPs (Wilkins 1989: 104). In a few cases, one form can have both an adjective sense and a noun sense, e.g. *iperte* 'hole' (noun) or 'deep' (adjective); when used together in the NP, speakers always identify the first occurrence as the head noun and the second as adjective, as in (2-14) (Wilkins 1989: 104). Other examples are Anguthimri (Crowley 1981: 162), Emmi (Ford 1998: 138), and Kugu Nganhcara (Smith & Johnson 2000: 386). For a further 20 languages, ordering principles are mentioned (or they can be derived from examples) but they are not used as evidence for the question of word class (e.g. Kuuk Thaayorre [Gaby 2006: 297-298], Uradhi [Crowley 1983: 371]). A slightly different implementation of this criterion is found for Bardi: when an adjective acts as modifier, the order of head and modifier is flexible, but if a noun acts as modifier, the order is fixed to modifier-head (Bowern 2012: 264).

(2-14)   Arrernte (Wilkins 1989: 104)

>   *iperte   iperte*
>   hole   deep
>   'deep hole'

In Bininj Gun-wok, adjectives can be distinguished in compound formation, where they are always the second element, as in (2-15), and never the first (Evans 2003a: 127).[28]

(2-15)   Bininj Gun-wok (Evans 2003a: 127)

>   *Yi-geb-gimuk.*
>   2-nose-big
>   'You have a big nose' or 'Your nose is big.'

A second syntactic criterion, involves nominal classification, which is used as distinguishing feature for 24 languages. Nouns normally occur in only one noun class or with one generic noun (with some flexibility allowed,[29] cf. chapter 1), whereas

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[28] Another way to identify adjectives in Kune (one of the Bininj Gun-wok variants) is that their prefix *na-* is dropped when used in compounds. This prefix is a remnant of nominal classification, the formal marking of masculine gender, which is generalised to all nouns in this language variety, and is normally attached to adjectives to agree with the head noun of the NP (Evans 2003a: 126) (see also chapter 1, section 5.2.2).

[29] The fact that some nouns may belong to more than one noun class (for instance in the case of superclassing) is exactly why Nordlinger (2014: 238) argues this is not always a solid criterion for distinguishing nouns from adjectives. Conversely, for Ungarinyin it is said that not all semantic adjectives agree with the head noun in class marking, which again suggests that this is not necessarily a solid criterion for distinguishing nouns from adjectives (Spronck 2015: 18).

adjectives can occur in all classes or with all generics, since they simply agree with the head noun (see also Dixon 2002: 67-68; Dixon 2010: 85-86). For instance, Nordlinger argues for Wambaya: "while nouns inherently belong to only one gender (…), an adjective has no inherent gender; but potentially can be marked for any of the four genders in agreement with the noun that it modifies (…)" (1998: 47). A variant of this criterion is mentioned for two languages: an explicit noun class marker is found on adjectives, but not on nouns (Gaagudju [Harvey 2002: 128, 151]; Bundjalung [Sharpe 2005: 23]). As already mentioned in chapter 1 (section 5.1), class marking on nouns is rare in any case, but if it is really absent on one set of elements and present on the other, this is a good argument to recognise different word classes.

Essentially the same type of argument, but in a different form, is found for Kuku Yalanji and Dhuwal, which have two different sets of case marking ('neutral' vs. 'potent' in the former, and 'human' vs. 'non-human' in the latter). Many nouns inherently take one type of case marker,[30] while any modifying adjectives agree with their head noun in the type of case marker they take (Patz 2002: 125; Wilkinson 1991: 114).

A third syntactic criterion relates to degree modification; this is mentioned as a distinguishing criterion for nine languages, and occurs in three forms. First, it is observed in some grammars that adjectives can be modified by degree adverbs or intensifying particles or the like, while nouns cannot. For instance, in Bardi, *giija* 'very' can only modify adjectives, but not nouns, as in (2-16) (Bowern 2012: 265). The same is true for six more languages (Dhuwal [Wilkinson 1991: 146, 682-684], Kuuk Thaayorre [Gaby 2006: 79], Mathi-Mathi/Wati-Wati [Blake et al. 2011: 191], Umpila [Hill p.c.], Wajarri [Douglas 1981: 244], and Yir Yoront [Alpher 1991: 23]). This is usually seen as good evidence for distinct categories. However, there are also authors (e.g. Wilkinson [1991: 682-683]) who attribute this difference to semantic differences (e.g. entity-denoting nominals are not gradable and can therefore not be modified by degree modifiers), and suggest that it cannot be used as evidence for distinct categories (cf. also section 1.2.1).

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[30] However, there are some nouns that can show either type of case marking, depending on construal, which weakens this argument as evidence for separate word class status.

(2-16) Bardi (Bowern 2012: 265)

    a. *boordiji   giija*

       big   very

       'very big'

    b. **iila   giija*

       dog   very

       'very dog'

Secondly, in some languages the same degree modifier can be used to modify nouns and adjectives, but with a different semantic result. In Yir Yoront, when *morr* follows a noun, it means 'real, actual', as in (2-17a), whereas if it follows an adjective, it means 'very', as in (2-17b) (Alpher 1991: 23). Similarly in Arrernte, *nthurre* following a noun means 'a real X', following an adjective 'very X', as in (2-18a-b) (Wilkins 1989: 105). A final phenomenon related to degree modification is that nouns and adjectives can both be intensified, but with different elements. In Diyari, there are different intensifiers for nouns (*pirna*) and adjectives (*marla*) (Austin 2011: 40).

(2-17) Yir Yoront (Alpher 1991: 23)

    a. *warrchuwrr   morr*

       woman   real, actual

       'a real woman (not one in a dream)'

    b. *wil   morr*

       bitter very

       'very bitter'

(2-18) Arrernte (Wilkins 1989: 105)

    a. *artwe   nthurre*

       man   INTENS

       'a real man [one who has been initiated]'

    b. *kngerre   nthurre*

       big   INTENS

       'very big'

There is a range of other syntactic criteria, mentioned for just one or two languages in the sample, which I briefly mention here. In Alawa, (some) adjectives can be used to modify verbs, while nouns never can (Sharpe 1972: 60). In Bundjalung and Mangarrayi, adjectives can take complements, while nouns cannot (Sharpe 2005: 23,

referring to Crowley 1978: 29-30; Merlan 1989: 27-28). Finally, in Jingulu, nouns and adjectives can both function as predicates, but their arguments (in bold in the examples) differ in the case marking they take: ergative for the former, as in (2-19a), and absolutive (unmarked) for the latter, as in (2-19b) (Pensalfini 2003: 57-58).

(2-19) Jingulu (Pensalfini 2003: 57)

    a. ***Jama-rni-rni***   *jawularri-nama.*
        that-ERG-FOC   young.man-time
        'He's still a young man.'

    b. ***Miringmi***   *bardakurru-mi.*
        gum   good-VE
        'Gum is good.'

1.3.   Direct qualification in Australian languages

The second major question in the typology of qualification is whether there is a functional qualifier slot in the NP, and what this looks like internally. A first point to notice in the sample is that direct qualification is possible in all languages of the sample, although some authors argue for appositional structures instead of 'integrated' NP structures (see chapter 3, section 2, and chapter 4, where this is discussed in more detail). Apart from that, adjectives or nominals can modify head nouns directly – in line with the basic Australian repertoire of rigid adjectives and/or flexible nominals, as discussed in the previous section. However, in some languages, this option is used infrequently. For instance, Malakmalak only has a small class of adjectives, so it needs to resort to other strategies, like the use of coverbs, to express qualities not covered by these adjectives (Hoffmann p.c.). In some other languages with open classes of adjectives or nominals, the use of direct qualification is not the preferred strategy either: in Ungarinyin, for example, adjectives are avoided and rarely occur in natural speech (Spronck p.c.), and in Yalarnnga, "there are very few attributive adjectives in the corpus" (Breen & Blake 2007: 54). Such languages often also prefer other strategies to express qualification of nouns, such as secondary predication in Yalarnnga (Breen & Blake 2007: 54), or in Bininj Gun-wok compounding for a closed set of nouns[31] (as in 2-20a) and external modification of

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[31] In some dialects, compounding is even the only option to express modification of one of these nouns (Evans 2003a: 177). Similar noun-adjective compounds are also found in other Gunwinyguan

incorporated nouns (as in 2-20b) (Evans 2003a: 172-173, 176-180, 235-237; see also chapter 1, section 4, and section 2.2 in this chapter on other unification constructions). Incidentally, the incorporated noun may be modified by a modifying compound (repeating the noun), i.e. both 'alternative' strategies may be combined in Bininj Gun-wok (as in 2-20c).

(2-20) Bininj Gun-wok (Evans 2003a: 178, 235, 236)

    a. *man-ngorl-kimuk*

       VE-cloud-big

       'big clouds'

    b. **An-*biya***   *garri-**yerrng**-ma-ng, bu garri-worrhm-i, an-dehne*

       VE-different 12A-wood-get-NPST REL 12A-light-NPST VE-this

       an-geb-warre.

       VE-flame-bad

       'We'll get some different wood when we make the fire, this (kind of) wood produces a poor flame.'

    c. *Ngaye Nicholas ngani-ngime-ng   ngani-**rurrk**-na-ng*

       me   <name> 1UA-enter-PST.PFV 1UA-shelter-see-PST.PFV

       ngan-rurrk-makkaigen.

       VE-shelter-beautiful

       'Nicholas and I went in and had a look at the beautiful (new amenities) building.'

Returning now to direct qualification in the NP, while most languages allow direct qualification for adjectives, adjectives are not necessarily restricted to this function within the NP, and conversely, other types of elements may also take up this function. An example of the first phenomenon is that adjectives can also be used in a quantifying function, most clearly when numerals are part of the adjective class, but also, for instance, when size adjectives are used as quantifiers (see section 2.3 for an example). The opposite pattern is nicely illustrated in (2-21) from Gooniyandi, where number words or possessive pronouns can be used as qualifiers (which have a distinct distribution; qualifiers follow the head and other modifiers precede the head)

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languages; see Baker & Nordlinger (2008) for a discussion of these structures in the LFG framework, who argue that the nouns in these constructions are generic nouns (or classifiers). This links back to the verbal and adjectival classifiers I discussed in chapter 1, section 4, where a similar structure is argued to be a generic/classifier incorporated in an adjective. It is unclear whether this concerns the same phenomenon or not, and if so, where the differences lie.

(McGregor 1990: 264-267). The relation between word class and function is discussed in more detail in chapters 5 and 6.

(2-21) Gooniyandi (McGregor 1990: 265, 266)

    a. *yoowooloo garndiwa*
       man   many
       'many people'

    b. *thadda   ngaddagi*
       dog   my
       'my dog'

Turning to the internal structure of qualification, several grammars mention that more than one adjective can modify the nominal head simultaneously, and that adjectives can themselves be modified.[32] First, the use of multiple adjectives (or modifying nominals) in one NP is allowed in at least 20 languages, as shown in some examples in (2-22), although for several languages it is noted that this is marked and rare in natural speech (e.g. Kuuk Thaayorre [Gaby 2006: 293]; Mangarrayi [Merlan 1989: 51]; Yindjibarndi [Wordick 1982: 141]). Usually, there is no information on ordering restrictions, but Douglas (1981: 240) notes for Wajarri that multiple adjectives tend to occur in the order colour-size-state. In addition, the same adjective can sometimes be repeated for emphasis, for instance in Muruwari (2-23) (Oates 1988: 87).

(2-22) a. Kayardild (Round 2013: 136-137)

      mudinkiya   jungarrbaya bardanguya kurday
      tied.together.INS big.INS   large.INS   coolamon.INS
      'in the great big, bound coolamon'

    b. Mawng (Singer 2006: 95)

      "Ma-pa,   annga-ma-nyi   [mata ma-lijap   mata ma-rntulyak
      o.k.-EMPH   2SG>3VE-get-IRR   VE   VE-small VE   VE-long
      mata warlk]."
      VE   stick
      "Go and get a small long stick."

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[32] Beyond the domain of qualification, such features can also tell us something about the complexity of the NP structures and the question of NP constituency (see chapter 4).

    c. Nhanda (Blevins 2001: 129)

       indaacu-lu   uthu-nggu wur'ada-lu aja-yi-nha

       big-ERG   dog-ERG   black-ERG   bite-PST.PFV-1SG

       'The big black dog bit me.'

(2-23) Muruwari (Oates 1988: 87)

       kiʀa   yurrun kiʀa

       wide   track wide

       'a wide track'

The opposite pattern, viz. strict restrictions on multiple adjectives in the NP, is also found in the sample. In such cases, other structures (like afterthought or discontinuity, see chapter 4) have to be used to express attributes or qualities instead. For example, in Umpila (Hill 2010; 2015), only one adjective is allowed in the NP, and when several modifiers are used, they need to be split over separate NPs, as in (2-24). Other languages with similar restrictions are Paakantyi (Hercus 1982: 99), Rembarrnga (McKay 1975: 70), and Yuwaalaraay (Giacon 2015: 432).

(2-24) Umpila (Hill p.c.; Hill 2010: 9)

    a. *?kampinu-lu tha'i-na   pu'ala yilamu   mukana*

       man-ERG   hit-NFUT   drum old   big

       'the man hit the big old drum'

    b. *kampinu-lu   tha'i-na   pu'ala yilamu   /mukana*

       man-ERG   hit-NFUT   drum old   big

       'the man hit the big old drum'

About 38 grammars in the sample mention that it is possible to modify the adjectival modifier, either by morphological or by syntactic means. Morphologically, degree modification can be expressed by reduplication of the adjective, or by the addition of an affix. Reduplication for intensification is found in 13 languages (but not productively in all of them), as illustrated in (2-25) for Mangarrayi (Merlan 1989: 166). The use of an affix is found in 16 languages (but is again quite limited in some of these), as illustrated in (2-26) for Walmajarri (Richards 1979: 112). These affixes are not always specialised in adjectives, but can sometimes also be used with other word classes, like nouns or adverbs (e.g. *–idjiyang* 'very' can be used with adjectival nominals (2-27a) and with adverbs (2-27b) in Miriwung [Kofod 1978: 157]). The syntactic expression of degree modification uses a free-standing degree modifier,

resulting in a complex adjectival phrase (see also section 1.2.4 above). This is found in 15 languages, and is illustrated in (2-28) from Kuuk Thaayorre, showing two of the three degree adverbs the language has, with *minc* following the adjective it modifies and *waarr* preceding it (Gaby 2006: 286).

(2-25) Mangarrayi (Merlan 1989: 166)

      guḷañi   *guḷuḷañi*

      'long'   'very long'

(2-26) Walmajarri (Richards 1979: 112)

      wulyu   *wulyu-jinyangu*

      'good'   'very good'

(2-27) Miriwung (Kofod 1978: 157-158)

      a. *ngundenging*   *ngundengi-(i)djiyang*

         'good'   'very good'

      b. *geluwirr*   *geluwirridjiya*

         'up there'   'right up there'

(2-28) Kuuk Thaayorre (Gaby 2006: 613)

      inhul   **ngamal**   **minc,**   *meer.pungk*   **waarr**   **ngamal**

      this.one large   really   eyebrow(NOM) very   large

      'this [crocodile] was really large, [it had] enormous eyebrows'

As conclusions on the status of the word classes are often unclear for individual languages, I will use the term 'adjective' in a broad sense in the rest of this dissertation (compare Haspelmath [2010] on 'comparative concepts'). I use 'adjective' to refer to NP modifiers which describe a property of the referent lexically, regardless of whether they have a separate word class status or are part of a larger 'nominal' word class. In other words, use of the term 'adjective' beyond this section is not to be understood as a statement on word class status in individual languages.

2. Number and quantification

The second domain I discuss in this chapter is quantification, which can be broadly defined as how the number of referents is expressed in the NP. In section 2.1, I discuss some general questions relating to number marking and quantification from a typological perspective. In sections 2.2 and 2.3 I look at how these questions play out in the Australian data.

2.1.   Typological background

The number of referents being referred to can be expressed in largely two ways (e.g. Gil 2015: 710). The first is by means of the grammatical category of number, which is generally associated with more general semantic distinctions (e.g. 'one' as opposed to 'more than one') and is often realised morphologically with bound forms. An example is the suffix –*s* attached the head noun in English, which marks plurality, as in (2-29). The second way is by means of a lexical category expressing quantity, which is generally associated with more specific semantic distinctions (e.g. 'five', 'few', 'most') and often relies on syntactic patterning with freestanding forms. Examples are English quantifiers like *many* and *few*, and numerals like *two*, as in (2-29). This distinction between number marking and quantification is not always clear-cut, as for instance number marking can also be expressed by freestanding forms in some languages (Dryer 2013a; Corbett 2000: 133-159), but I use it as a basic distinction here to go through the literature and data.

(2-29) English (Indo-European)

     two   book-s

     two   book-PL

     'two books'

2.1.1.   Number marking

The major typological questions in the literature on number marking relate to its distribution in the clause, its obligatoriness, and the nature of the distinctions within number paradigms. Number marking can be found in several places in the clause: it can be marked on the head element of a referring expression (nominal as in (2-29) above, or pronominal as in (2-30a)), on its modifiers (as in 2-30b), freely in the NP (as in 2-30c), and beyond the NP, e.g. on the verb (as in 2-30d).

(2-30)   a. English (Indo-European)

     she   -   they

     3SG.F   3PL

    b. Ungarinyin (Spronck 2015: 27)

       ari   ***birri***

       man   PL.ANAPH

       'men'

    c. Hawaiian (Austronesian; Elbert & Pukui 1979: 159; cited in Dryer 2013a)

       'elua   *a'u*   ***mau***   *i'a*

       two   my   PL   fish

       'my two fish'

    d. Tsafiki (Barbacoan; Dickinson 2002: 57; cited in Krasnoukhova 2012: 103)

       tsan-ke-to=bi,   ***unila*** *mantiminni jelen=chi*   *ji-**la**-i-e*

       SMBL-do:VCL-SR=LOC man   EMPH   jungle=LOC go-PL-become:VCL-DECL

       'When they had done this the men went to the jungle.'

Cross-linguistically, it is more common to have number marking on pronouns and on verbs, while it is less likely to occur on other parts of speech such as nouns (Bickel & Nichols 2007: 227-228). In nouns, moreover, it is more likely to appear on kinship terms and nouns denoting humans than on nouns denoting inanimates (Haspelmath 2013). This is captured in the well-known Animacy Hierarchy, presented in (2-31) (Corbett 2000: 55-66; Haspelmath 2013; see also Silverstein [1976] for uses in the domain of case marking and agreement).

(2-31) *Likelihood of number marking: Animacy Hierarchy*

      speaker > addressee > 3rd person > kinship terms > other humans > "higher" animals > "lower" animals > discrete inanimates > non-discrete inanimates

Languages also vary with respect to the obligatoriness of number marking. The survey in Haspelmath (2013) suggests that number marking can be obligatory for all nouns, as in western and northern Eurasia and most parts of Africa, whereas it is often optional for all or some nouns in East and Southeast Asia and Australia, and even completely absent on nouns in some languages of Australia and New Guinea. Optionality of number marking can also be captured in terms of the hierarchy in (2-31): if a particular element marks number optionally, elements lower on the hierarchy will never mark number obligatorily (Corbett 2000: 70-75, 87).

If number is marked, the paradigm distinguishes at least between singular and plural (or non-singular);[33] additionally, it can distinguish dual (two referents), trial (three referents), paucal (a few referents) or 'greater plural' (an excessive number or referents) (e.g. Corbett 2000: 19-38; Bickel & Nichols 2007: 227). Such distinctions are sometimes analysed in terms of a Number Hierarchy (predicting possible number systems: singular > plural > dual > trial), but there are several problems with this (see Corbett 2000: 38- 50 for an extensive discussion). The number of distinctions need not be the same for all elements that mark number. For instance, it may be the case that pronouns involve a three-way distinction, while nouns in the same language only make a two-way distinction (Corbett 2000: 120-124). In some languages, number markers do not express plurality as such when used in certain contexts (e.g. with kin terms or names), but rather an 'associative' meaning of 'X and his/her group'. An example is given in (2-32), where the non-singular suffix on 'mother' does not indicate that there is more than one mother, but rather refers to 'mother and the people associated with her' (Bickel & Nichols 2007: 228). Alternatively, some languages have a dedicated associative marker (Corbett 2000: 83-84, 101-111; Bickel & Nichols 2007: 228). Other markers also occur, expressing for instance collectivity or distribution. Both mark a group of referents, but collectives (as in (2-33)) consider the members of the group together as a unit, while distributives (as in (2-34)) consider them separately (Corbett 2000: 118).

(2-32) Belhare (Sino-Tibetan; Bickel & Nichols 2007: 228)

  ama-chi

  mother-NSG

  'my mother and her people' (e.g. sisters, friends, etc., depending on the situation)

(2-33) Sierra Popoluca (Mixe-Zoquean; Elson 1960: 219; cited in Corbett 2000: 118)

  a. *tɨg-áŋhoh*   b. *tóʔˑd-áŋhoh*

    house-COLL   paper-COLL

    'many houses together, a village'   'much paper in a pile'

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[33] Alternatively, some systems distinguish minimal vs. augmented (and sometimes unit augmented). As argued by Corbett (2000: 168-169), this is not to be seen as an additional set of number values but rather as an "alternative means of expression."

(2-34) Mohawk (Iroquoian; Corbett 2000: 113)

    a. *o-nenia'-shon'a*   b.   *o-tsikhe'ta'-shon'a*

       N-rock-DISTR   N-candy-DISTR

       'various rocks' (different sorts)   'various candies' (different sorts)

2.1.2. Quantification

The domain of quantification concerns lexical elements that express quantity (usually quite specifically), including numerals and quantifiers like English *many*, *few*, *most*, and so on. These elements may occur within the NP (as *two* in (2-29) above) or outside of it, like *all* in (2-35).

(2-35) English (Indo-European)

       The men all *went.*

     Studies on quantification often focus on one language, and there are relatively few typological or cross-linguistic studies (but see, for instance, Matthewson [2008]). One interesting issue to come out of the literature concerns the link between quantification and determination and/or definiteness. A commonly found example is the use of the numeral 'one' as an indefinite article (e.g. Dryer 2013c), but there are also more subtle effects, like relative quantifiers (such as *most*) that invoke a reference mass (to which the intended referent is compared) which is identifiable (Davidse 2004; see also several papers in Bach et al. [1995]; Gil [2015]; see further in chapter 5, section 3). Another relevant issue is the structure of numeral systems, i.e. what the architecture of numeral expressions looks like, which is the subject of several broad typological studies (e.g. Greenberg 1978; Hammarström 2010; Comrie 2013). For instance, there are differences in the numeral base, i.e. the value which is multiplied and perhaps added to another number to form higher numerals: in Mandarin, for example, this is 10 (as shown in (2-36)), while in Diola-Fogny this is 20 (as shown in (2-37)) (Comrie 2013). Finally, parts of the literature also carve up quantifiers in broader categories (Gil 2015). For instance, a distinction that is often made with regard to quantifiers is between mass and count quantifiers: the former "constitute expressions which denote an undifferentiated homogeneous mass" (like *much* in English), while the latter "constitute expressions which refer to one or more countable units of characteristic size and shape" (like English *many*) (Gil 2015: 707). Other classifications include

distinctions between existential and universal quantifiers, or between strong or weak quantifiers (see Gil [2015] for more information).

(2-36) Mandarin (Sino-Tibetan; Comrie 2013: §1)

èr-shí-lìu

two-ten-six

'26' (i.e. [2x10]+6)

(2-37) Diola-Fogny (Niger-Congo; Sapir 1965: 84–85; cited in Comrie 2013: §2)

bukan   ku-gaba   di   uɲɛn   di   b-əkɔn

twenty   CLF6-two   and   ten   and   CLF9-one

'51' (i.e. [2x20]+10+1)

The next two sections give an overview of how number and quantity are expressed in Australian languages. As this study is concerned with NPs, I focus on how number is expressed in the NP (morphologically or by a numeral/quantifier). I only provide a few brief comments on how it can be expressed in the rest of the clause.

2.2.   Number marking in Australian languages

Almost all languages in the sample have some form of number marking in the NP (seven only have number marking outside the NP, and for four languages there is no information available). There is great variation, however, in the range of elements for which number marking is possible, the obligatoriness of its use, and the patterns of agreement that are available. The largest group of 74 languages can show number marking both on the head noun (limited to a few nouns for 19 languages) and in agreement (including all types of modifiers and/or beyond the NP). In 6 languages, number can only be marked on the head (for 3 of these, this is limited to a handful of nouns). In 10 languages, number is only available in agreement markers in the NP (in a pronoun or demonstrative modifying the nominal head),[34] and in 9 of these also beyond the NP (e.g. in bound cross-referencing pronouns). An overview can be found in the map below, based on the available information. All types of number marking outside the NP are represented in one category on the map in order to simplify the visualisation, but a distinction between marking on the verb (cross-

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[34] Note that it is not always clear whether a pronoun is truly a modifier, or is to be analysed as appositional to the NP (as for Kuuk Thaayorre). This is further discussed in chapter 5 (section 2.4).

referencing pronominal forms and specific number affixes), marking on pronominal forms (e.g. enclitic in second position or free and appositional to the NP) and other types of number marking can be seen in the online, dynamic version of the map by clicking on the language points.
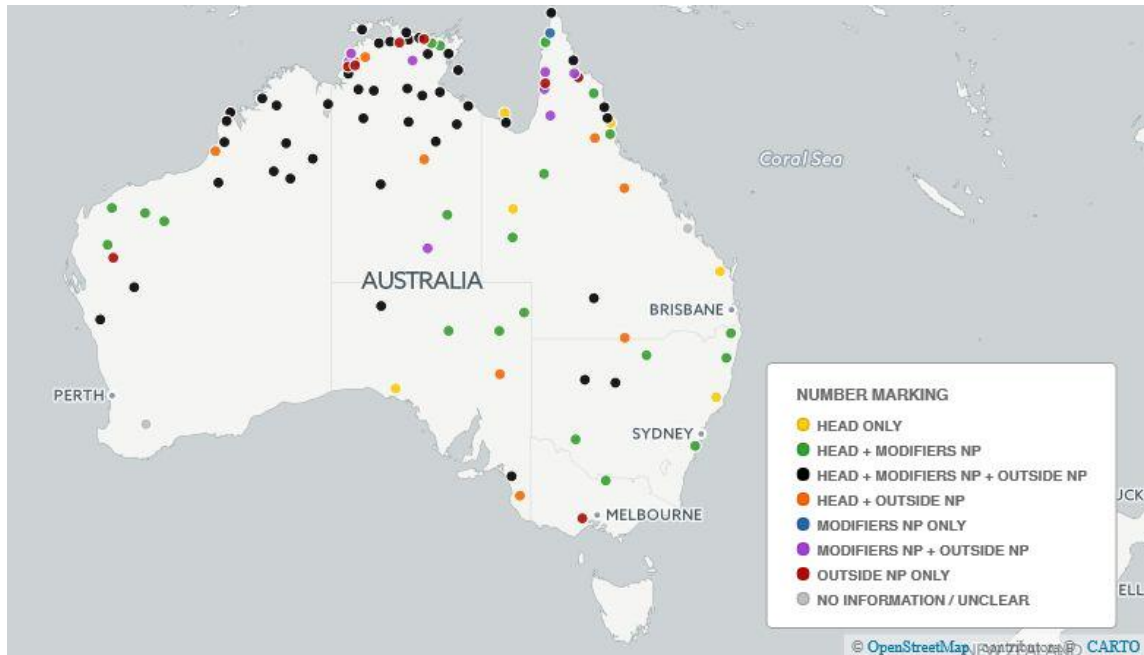
Map 7: Number marking. For an online, dynamic version of this map, see: http://bit.ly/number-overview.

2.2.1. Number marking on the head noun

Number marking on the head noun is found in several forms. Affixation is by far the most common process,[35] mainly in the form of number suffixes. Number prefixes are relatively rare, found only in seven languages of the sample (all non-Pama-Nyungan,[36] except for Yanyuwa), and often alternating with class markers (see chapter 1, section 5.2; in Enindhilyakwa there is also a separate prefix slot for the trial marker [van Egmond 2012: 82]). Reduplication and suppletion are relatively minor ways of marking plural number in the sample. Reduplication is found in many languages (see also section 1.2.3 and section 1.3 on other types of reduplication), but it is almost

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[35] Number clitics are found in a few languages (e.g. Gaagudju [Harvey 2002: 130-131, 268-280, 290-293]; Jaminjung [Schultze-Berndt 2000: 50]), but it is difficult to put them in either the head marking section or the dependent marking section, because they are phrasal in nature. See also section 2.2.2 for some comments on phrasal marking of number.

[36] The other non-Pama-Nyungan languages in the sample with (some) number marking on the head just use one or more of the other morphological means (suffixes, reduplication, suppletion or clitics).

never a productive means of marking plurality. Most typically, it is found for only a few terms; it is my impression from the sample that these usually include some person terms like 'children', 'old people', 'women', as shown in (2-38), kin terms, subsection terms or clan names, as shown in (2-39), as well as geographical features like 'rocks' or 'mountains', as shown in (2-40) (e.g. Bininj Gun-wok [Evans 2003a: 168]; Bunganditj [Blake 2003: 30-31]; Marra [Heath 1981: 77]; Wambaya [Nordlinger 1998: 106-107]; Yalarnnga [Breen & Blake 2007: 52]; and many more). There are only a handful of languages where reduplication seems to be a more productive means for marking plurality, in the sense that a wider range of nouns in covered; these include, for instance, Dyirbal (Dixon 1972: 241) and Kuku Yalanji (Patz 2002: 55). There also is some variation in the number-related semantics of reduplication, which sometimes has an additional effect of vagueness, generality, collectivity or distributiveness instead of mere plurality (e.g. in Gooniyandi, McGregor 1990: 237-238).[37]

(2-38) Jaru (Tsunoda 1981: 234)

maluga   -   *maluga-maluga*

'an old man' or 'old men'   'many old men'

(2-39) Worrorra (Clendon 2014: 96)

abiya   -   *abaabiya*

'elder brother'   'elder brothers'

(2-40) Bunganditj (Blake 2003: 31)

pupitj   -   *pupitj-pupitj*

'hill'   'a range of hills'

Suppletion is only found in a handful of languages, and is always restricted to a few terms, usually person terms ('children', 'women', 'men') or some kinship terms. In Djambarrpuyngu (Wilkinson 1991: 126), for instance, *djamarrkuḻi* 'children' is the plural form of *yothu* 'child'. Finally, there is one language which has free number markers, Dhuwal (Morphy 1983: 47; Wilkinson 1991: 213). These number markers immediately follow the head noun, as illustrated in (2-41), and, as argued in chapter 5 (section 3.3), they can in fact be analysed as grammaticalised third person pronouns.

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[37] In such cases, reduplication occurs in a broader set of nouns, for instance groups of animals like 'fish' or 'dogs', or non-paucal or uncountable collectives like 'dust' or 'pimples' (e.g. Yawuru [Hosokawa 1991: 584]; Ritharngu [Heath 1980: 33]).

(2-41) Dhuwal (Wilkinson 1991: 213)

*yaka yan ŋunhi ŋanapurru-wuy galiwin'ku-wuy   [yolŋu **walal**]*
NEG EMPH TEXD 1PL-EMPH   place.name-ASS person PL(3PL)
'Not only us Galiwin'ku people'

In many languages of the sample, number marking on the head noun is relatively limited, in two ways. One limitation is that in most languages, not all nouns can receive number marking. In general, the likelihood for nouns to take number marking in Australian languages follows the hierarchy as described above in (2-31): for instance, number marking in many languages is limited to nouns referring to humans (e.g. Tiwi [Lee 1987: 80-81]; Yandruwandha with a few exceptions [Breen 2004a: 113]). There are also 22 languages which only allow number marking on a very small set of nouns. An example is Bardi, which has a 'group' suffix occurring on five human terms (as shown in (2-42)), in addition to a few irregular plural forms (Bowern 2012: 174-176).

(2-42) Bardi (Bowern 2012: 174)

nyoongoorl   -   *nyoongoorl-jin*
old.person   old.person-GROUP
'old person'   'group of old people'

The other way in which number marking is limited is that in many languages number marking is optional, i.e. a noun that is not marked for number can refer to one or more referents. It can be optional for all nouns, or optional for some and obligatory for others. If number marking is obligatory only for some nouns, these tend to refer to humans (as could be expected from the animacy hierarchy), as in Ritharngu: "With human nouns (…) the Du and Pl suffixes are almost obligatory when semantically appropriate" (Heath 1980: 33). Obligatoriness of number marking can also depend on the number category that is expressed by the marker, in the sense that dual marking is reported to be more obligatory than plural marking in several languages (e.g. in Ritharngu [Heath 1980: 33], Wambaya [Nordlinger 1998: 73] and Yalarnnga [Blake p.c.]).[38]

The categories distinguished in paradigms of number markers are most frequently dual and plural (or unit augmented and augmented in Gaagudju [Harvey 2002: 268-280]), but some languages also have affixes expressing trial or paucal, and three

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[38] Dual marking also occurs with more types of referents than plural does in some of these languages (e.g. Arabana/Wangkangurru, Hercus 1994: 65).

languages have specifically singular suffixes (viz. Ngarrindjeri [Bannister 2004: 20-21],[39] Ngiyambaa [Donaldson 1980: 99-101], Paakantyi [Hercus 1982: 81]). The plural sometimes has a collective ('group') meaning rather than merely 'more than one', as in Paakantyi [Hercus 1982: 82-83], illustrated in (2-43).There can also be a separate 'distributed plural' form, "describ[ing] a group of things taken together but considered individually" (Dench 1994: 96) (as in Martuthunira [ibid.], illustrated in (2-44)). In a few languages, there are separate affixes for different animacy categories. Jingulu, for instance, has a dual and plural suffix specifically for animate referents[40] and a 'general' dual and plural suffix for any type of referent (including animate) (Pensalfini 2003: 171).

(2-43) Paakantyi (Hercus 1982: 82-83)

   a. *ḏaḷḏa-**lugu***

       kangaroo-PL

       'a mob of kangaroos'

   b. *yara-yara -ul'-**ug'**-ayi*

       things   -SG[41]-PL-1SG.POSS

       'the whole of my possessions'

(2-44) Martuthunira (Dench 1994: 96)

   *Kanyara-**warntura** nyina-lha pintirrijila, wartawirrinpi-rra ngurra-ngka*

   person-DISTR   be-PST   scattered   wait-CTEMP   camp-LOC

   pirriyarta-la.

   own.camp-LOC

   'People were scattered about, waiting each in their own camp.'

Kin terms have separate number suffixes in 12 languages of the sample.[42] For example, in Kuku Yalanji, there is a 'kinship plural' suffix for kin terms, shown in (2-

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[39] There is some disagreement about whether this is truly a singular suffix or rather part of the stem (Bannister 2004: 20-21).

[40] Intuitively, this could be linked to a noun class system; however, noun class and number are expressed in separate suffix slots on nominals, i.e. when both are marked, the gender suffix precedes the number suffix (Pensalfini 2003: 159).

[41] The singular here is used affectively (Hercus 1982: 83).

[42] Additionally, Guugu Yimidhirr has a collective plural suffix *–garr* which can be used on any noun, but has a different meaning when used on kin terms, viz. it is specifically used for several people that stand "in the same relation to a single other" (e.g. wives of the same man) (Haviland 1979: 55). Several Australian languages also have another formative specialised in kin terms, viz. the kin dyad (often marked by an affix, but also by a juxtaposed free form or by suppletion in a few languages). If it is an affix, it is attached to one kin term (e.g. 'grandfather') and results in reference to two people in a reciprocal kin relation (e.g. 'grandfather and grandson'). This type of affix is found in 27 languages

45), as opposed to productive reduplication for marking plurality in other nouns (Patz 2002: 55-56). Another few languages have suffixes which are tied to size, as in Ngiyambaa (Donaldson 1980: 99-101), which has a set of three singular and three plural suffixes, each including 'diminutive' (small, not because immature), 'immature' (small, because immature) and 'augmentative' (big) forms. In addition to basic number categories, several languages also have affixes with 'quantifying' meanings, for instance 'all', 'a lot of', 'only', or 'one of many' (see section 2.3 below on quantification).

(2-45) Kuku Yalanji (Patz 2002: 56)

*Jana-nda manyarr-**karra**-ngka yalama-ny: "Dunga-y kuyu   mani-nka!"*
3PL-LOC:PT wife-KPL-ERG:PT(A) say-PST   go-IMP fish.ABS(OBJ) get-PURP
'The wives said to them: "Go to get some fish!"'

2.2.2.   Number marking beyond the head noun

Beyond the head noun, number marking can be found on modifiers within the NP, or beyond the NP, for instance on the verb or in co-referential pronouns. Within the NP, number can be available for all types of modifiers, or for only one type. Both options are about equally frequent in the sample, but in cases where only one type of modifier is marked, this is by far more frequent for demonstratives and/or adnominal personal pronouns than for descriptive modifiers. In Arrernte, for instance, the adnominal personal pronoun is the only element in the NP which is marked for number, as shown in (2-46) (see further Wilkins 1989: 108, 129).

(2-46) Arrernte (Wilkins 1989: 129)

artwe   itne   no ahel-irre-ke   artwe mperlkere ikwere
man   3PL.S no angry-INCH-PST.COMPL man   white   3SG.DAT
'The men didn't become aggressive towards the white man.'

In languages where all types of modifiers can be marked, some languages show phrasal marking (e.g. with number marked on whichever element comes in the right position), while others allow agreement throughout the whole NP (e.g. Martuthunira

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of the sample, and usually shows a preference for attachment to either the junior or the senior term; in three more languages the comitative affixed to a kin term results in a kin dyad construction. See also Evans (2006) on this construction.

[Dench 1994: 203-204]). There are also some languages with a choice between phrasal and word marking, as shown in (2-47a-c) for the language group Dharrawal/ Dharumba/ Dhurga/ Djirringanj (Besold 2012: 289-290). (See further in chapter 4 (sections 2.1.1 and 3.2) on the distinction between phrasal and word marking of categories more generally.)

(2-47) Dharrawal (a-b)/ Dhurga (c) (Besold 2012: 290)

    a. *bambu-lali djilawaran-bula buru-lali*

       big-DU   grey-DU   kangaroo-DU

       'two big grey kangaroos'

    b. **bundawari-wulali   yuwinj-dju**   *bulma-ya-wula mirigang*

       tall-DU   man-ERG[43]   hit-PST-3DU   dog

       'two tall men beat the dog'

    c. **yuwinj biraga   garniina-mbaraga** *bayi-na*   *waranj njiinj*

       man   big   bad-PL   beat-NPST child this/here

       'the bad men are beating the child'

Number marking outside the NP can occur on the verb or elsewhere in the clause. On the verb, number marking mostly takes the form of pronominal affixes (typically prefixes in non-Pama-Nyungan languages). Several languages also have other number or quantifying markers which can be attached to verbs. Example (2-48) from Bardi shows both cross-referencing prefixes and a quantificational enclitic =*nidi* 'group' marking the number of the intransitive subject. Elsewhere in the clause, number can be found in personal pronouns that are co-referential with the NP, either bound, as in (2-49) from Ngiyambaa (where the pronoun is co-referential with *bura:y* 'child'), or free, as in (2-50) from Kuuk Thaayorre (where the pronoun is co-referential with *parr_r* 'child').

(2-48) Bardi (Bowern 2012: 398)

    Barnanggarra=gij   *i-**rr**-al-gal=**nidi***   *bigibigi* *ngoorrngool-ondarr.*

    now=VERY   3-AUG-be-RECPST=QUANT   pigs   mangrove-L.ALL

    'Just now all the pigs were in the mangroves.'

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[43] The absence of the number marker on the head noun could also be attributed to the presence of a case marker in this example: case and number marking seem to be in complementary distribution in this language group (Besold 2012: 289).

(2-49) Ngiyambaa (Donaldson 1980: 128)

    *miri-gu=**naŋ-gal**   bura:y   gadhiyi*

    dog-ERG=3ABS-PL   child.ABS   bite.PST

    'The dog bit the children.'

(2-50) Kuuk Thaayorre (Gaby 2006: 298)

    *parr_r   inh   yan   **peln**   school-thak*

    child(NOM)   DEM:SP.PROX   go:NPST   3PL(NOM)   school-DAT

    'these children (nowadays) go to school'

Number marking beyond the head noun is often optional, as shown in (2-51a-b), but not always. For instance, agreement is obligatory when number prefixes are part of the noun class paradigm (see chapter 1, section 5). Number agreement also often follows the Animacy Hierarchy, in the sense that inanimate nouns, for instance, often control singular cross-referencing on the verb. An example is Warray (Harvey 1986: 86), where animate nouns are often cross-referenced with a plural prefix on the verb (2-52a), while inanimate nouns never are (2-52b) (3SG is unmarked on the verb).

(2-51) Nhanda (Blevins 2011: 53, 58)

    a. *kurlayhi-**nu**   marniwirri-**nu**   inda-ba-nhaa   gali-nggalu*

        river.gum-PL   red-PL   big-INCH-NPST   gully-PATH

        'The river red gums along the gully are getting big.

    b. *ngayi   nha-'i   **indaacu**   **wuthada**   **uthu-thada***

        1SG   see-PST   big   two   dog-DU

        'I saw two big dogs'

(2-52) Warray (Harvey 1986: 86)

    a. <u>animate referent</u>

        *wanjlak angilak   pat-**put**-nay-na-y*

        right now   1SG.S.NCOMPL-1SG.S>3PL.OBJ-RDP-see-REAL

        ***a-kupam-u**   pontalpontal*

        CL-lots-OBL   magpie

        'Right now I can see lots of magpies.'

b. <u>inanimate referent</u>

yumpal	***keranglul***	***kenganawu***	*ka-kulu-tj-i*	*pekmara*
tree	two	over.there	NCOMPL-stand-AUX-IRR	between

ka-ni-ni

NCOMPL-RDP-sit

'She is sitting down between those two trees standing over there.'

Finally, number marking also shows links with other functional domains. As mentioned above, it is more likely to occur in adnominal personal pronouns and demonstratives than in other modifiers such as adjectives. In other words, in some cases number is only marked in a modifying pronoun or demonstrative, as in (2-53) below (and (2-46) above). Interestingly, both personal pronouns and demonstratives are good candidates for functioning as determiners, which suggests there may be a link between number and determination. Corbett (2000: 278-280) similarly suggests a link between number and definiteness, one of the functions commonly associated with determination. Another sign of this link is the use of numerals and quantifiers in positions which are typical of determiners, for instance the cross-linguistically common use of the numeral 'one' as indefiniteness marker (e.g. Dryer 2013c; see also below in section 2.3). The link between number and determination is discussed in more detail in chapter 5 (section 3.6).

(2-53) Kugu Nganhcara (Smith & Johnson 2000: 392)

ku'a-m	***thaaranam***	*pukpe*	*uyu*	*agu+ukewi-yin*
dog-ABL	3PL.ABL	child	many	be.born-3PL.PRS

'Dogs have a lot of young.'

2.3.   Quantification in Australian languages

Apart from morphosyntactic marking of number, another way to express the number of referents is by means of a numeral or quantifier, as in example (2-54).

(2-54) Alyawarra (Yallop 1977: 77)

amulya	***akngirra***	*plain-ila*	*atuna*
lizard	many.NOM	plain-LOC	kill.PST.CONT

'(we) killed a lot of lizards on the plain'

Australian languages generally have a relatively small set of numerals and quantifiers. Numerals are discussed in detail in Bowern & Zentz (2012), who show that the set of numerals is usually restricted (the upper limit is '3' or '4' in about three quarters of the languages of their sample), and that it shows limited internal complexity. About half of the languages can combine smaller numerals into larger ones, and such systems almost always use '2' as base, although it is often unclear if this base is additive or multiplicative (ibid.: 54-55). For example, '4' in Gurindji (not in my sample) is formed by juxtaposing two instances of the form '2', as in (2-55).

(2-55) Gurindji (Bowern & Zentz 2012: 139)

    a. *kutyarra*

       'two'

    b. *kutyarra*   *kutyarra*

       two   two

       'four'

As for quantifiers, grammatical descriptions rarely give more than just a list of elements with a quantifying meaning, and usually do not discuss the system in detail. In general, it seems that most or even all languages of the sample have one or more high mid-range quantifiers (esp. 'many', 'much', 'a lot of'), as well as a general interrogative ('how many'). The next most frequent types of elements include a low mid-range quantifier 'a few' (sometimes this meaning can also be expressed by the numeral 'three'), an existential quantifier 'some/other', a collective quantifier 'group/mob of' and a universal quantifier 'all/every/each'. There are also a few less frequent elements like 'none/nothing', 'the rest of', 'enough', 'half' and 'more'. For a handful of languages, it is observed that size adjectives like 'big' or 'small' can be used as quantifiers (e.g. Enindhilyakwa [van Egmond 2012: 126], Umpila [Hill 2015]). This is illustrated for Gooniyandi in (2-56), where the adjective 'big' is used as a quantifier with the non-count noun 'water'.

(2-56) Gooniyandi (McGregor 1990: 260)

    nyamani *gamba*

    big   water

    'a lot of water'

The feature of countability, which is discussed in some of the typological literature (see section 2.1), generally appears to be a relatively unimportant category in

Australian languages, although some languages distinguish between count and non-count quantifiers. In such cases, the distinction is made at the level of the quantifiers and not at the level of the nouns (compare, for instance, McGregor [1990: 260] on Gooniyandi; Patz [2002: 66] on Kuku Yalanji). For example, in Bilinarra, there is one quantifier *jarrwa* 'many' for count nouns and two quantifiers *jarrwalud* and *janggarni* 'much' for non-count nouns (Meakins & Nordlinger 2014: 195). Similarly, Enindhilyakwa has two quantifiers for count nouns and two for non-count nouns (van Egmond 2012: 126). As mentioned above in section 2.2, several languages also have 'quantifying' affixes which attach to nouns.

Syntactically, numerals and other quantifiers can either have the same distribution as adjectives (as shown in the NP template for Yingkarta in (2-57a)), or they occur in their own position (as shown in the NP template for Umpithamu in (2-57b)). For some languages, however, there is evidence that they can also pattern like determining elements. This is the case, for instance, in (2-57c) from Gooniyandi, where the numeral 'one' is used as a determiner. The link between quantifiers/numerals and determiners is studied in more detail in chapter 5 (section 3.6).

(2-57) a. Yingkarta (Dench 1998: 50-51)

NP template (G): (Determiner) (Modifier) Head

with Modifier: quantifiers and adjectives

  b. Umpithamu (Verstraete 2010: 11)

NP template (G):

(Classification) - Head - Modification - Number – Identification

with Number: numerals

  c. Gooniyandi (McGregor 1990: 374)

Yoowarni-ngga / **yoowarni-ngga   gardiya /**   *cherrabun bore /*

one-ERG   one-ERG   white.person   <place name>

warangji /   gamba   bambimnga-widdangi   boorloomani -yoo /

he:sat   water   he:pumped:it-for:them bullocks-DAT

'There was a white man at Cherrabun Bore pumping water for the cattle.'

A second interesting syntactic feature of numerals and quantifiers is that they often seem to be more 'free' than other modifiers. In cases of so-called discontinuous NPs, for instance, they can more easily be 'split off' from the rest of the NP, as in (2-58) from Kayardild. This is discussed in more detail in chapter 4 (esp. section 4).

(2-58) Kayardild (Evans 1995: 250)

ngada	***kiyarrng-ku***	*kala-thu*	***wumburung-ku***	***mirra-wu***
1SG.NOM	two-MPROP	cut-POT	spear-MPROP	good-MPROP

'I want to cut out two good boomerangs.'

Finally, for four languages in the sample the grammars also mention the possibility of a 'quantifier phrase', i.e. where the quantifier itself is modified, as in (2-59a-b). This is the case for Arabana/Wangkangurru (Hercus 1994: 65), Arrernte (Wilkins 1989: 110), Djambarrpuyngu (Wilkinson 1991: 682-685) and Gooniyandi (McGregor 1990: 259-260).

(2-59) a. Arrernte (Wilkins 1989: 110)

kngwelye	*atningke*	*ingkirreke*
dog	many	all

'All of the many dogs'

b. Arabana/Wangkangurru (Hercus 1994: 65; own glossing)

kardipirla	*nhuka*	*katyiwiRi*
star(s)	many	big

'a great number of stars'

3. Conclusion

This chapter has provided a survey of the domains of qualification and quantification in the NP, both of which are reasonably well-studied in Australian languages, but have more open questions than the domain of classification.

In the domain of qualification, the focus of the existing literature mostly lies on the issue of word classes, i.e. whether there is a specialised adjective class or rather one broader 'nominal' class. The literature and the grammars use a great variety of criteria to distinguish nouns and adjectives, but it is still unclear how these criteria relate to each other, and what conclusions can be drawn if a language shows a specific combination of criteria. Apart from word class status, another issue is how word class is linked to function. Adjectives do not always function as qualifiers, but can also function as quantifiers, as illustrated in section 1. Conversely, other elements than adjectives can also have a qualifying function in the NP. The relation between word class and function is discussed to some extent in chapter 5.

In the domain of number marking and quantification, most grammars mention the basic options for number marking, but there is no overall picture of Australian languages available (though see Dixon [2002: 77] for some general comments, and McGregor [2004: 153-154] on Kimberley languages). Similarly, most grammars provide a list of quantifiers, but it is often unclear how they are used syntactically. There is some literature on the architecture of numeral systems (Bowern & Zentz 2012), but overall, the domain of quantification remains under-studied for Australian languages.

This survey chapter has attempted to give a first impression of the domains of qualification and quantification based on the languages in my sample, but more research is needed on several issues, especially on the syntactic distribution of these elements in the NP.

Chapter 3: Determination and NP constituency

The third survey chapter discusses the two domains that are least well-studied in the literature, viz. determination (section 1), and NP constituency (section 2). As already mentioned, these domains remain under-studied for different reasons: determination is simply not discussed very often in the general literature on Australian languages, while the question of NP constituency is mentioned very frequently, but still lacks a broad empirical basis. This chapter gives some typological background on the two domains, and summarises the relatively limited Australianist literature that is available. The following chapters in Part II, then, follow up this chapter to investigate these issues in more detail.

1. Determination

1.1. Typological background

The term 'determiner' is often used as a cover term for word classes like articles and demonstratives, which serve to mark the referent as (non)identifiable (Dryer 2007a: 161; Dryer 2013d: §3). More technically, the prototypical determiner can be defined by a combination of a structural and a functional criterion: (i) it occurs in a specific position in the NP, often at its edges, and (ii) it has a specialised determining function, i.e. it indicates the identifiability status of the referent (e.g. Dryer 2007a: 161; Lyons 1999: 2-7, 20; Himmelmann 1997: 11; McGregor 2004: 125; Davidse 2004; Willemse 2005: 7). An example is the definite article in English (or other Germanic languages), which marks that the speaker presents the referent as identifiable,[44] is specialised in a left-edge determiner slot (or zone, see further below), as shown in (3-1a-b), and is

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[44] Note that definiteness and identifiability do not entirely overlap, in the sense that definiteness is a more narrow term than identifiability. This is argued by Lyons (1999: 253-281), who defines definiteness as a grammatical, rather than a semantic/pragmatic category of 'identifiability'; it prototypically expresses identifiability, but there are also other, non-prototypical uses (like inclusiveness).

obligatory for definite NPs, unless there is another determiner such as a demonstrative, as shown in (3-1c-d).

(3-1) English (Indo-European)
  a. *the heavy book*
  b. * *the*
  c. * *heavy book*
  d. *that heavy book*

For languages like English, the combination of these two criteria results in a relatively clear-cut category of determiners, which covers one specialised word class (articles), as well as a range of word classes that can also be used in other functions (like demonstratives, quantifiers or adjectives, see further below). However, there are many languages across the world that do not seem to have such an obvious determiner category in their grammar. While all languages will have some devices dealing with identifiability, they are often not obligatory or even frequent, and they do not necessarily coalesce in a structural position within the NP. Thus, there are many languages for which identifiability status need not be marked in any way within the NP. For instance, in Cherokee, "noun phrases are generally vague with respect to definiteness" (Dryer 2013b: §1), as illustrated in (3-2).

(3-2) Cherokee (Iroquoian; Scancarelli 1987: 190; cited in Dryer 2013b: §1)
  ki:hli   u:-skala   achu:ca
  dog   3SG-bite.PUNC boy
  'The/a dog bit the/a boy.'

Another issue is that some languages seem to lack a specialised slot: identifiability markers like definite and indefinite articles, possessives and demonstratives may have quite distinct distributions, and they may not be in complementary distribution with each other (Himmelmann 1997: 131-132; Dryer 2007a: 161; Dryer 2013c, d: §3). This is illustrated for Ju|'hoan in (3-3), where the indefinite article follows the head noun *jù* 'person' in (3-3a), while the definite article precedes the head noun *jù* 'person' in (3-3b). The fact that they occur in different positions in the NP suggests that they do not belong to the same category (Dryer 2013c: §3).

(3-3)   Juǀ'hoan (Northern Khoisan; Dickens 1992: 41; cited in Dryer 2013c: §3)

    a. *mí*   *hoa*   ***jù***   ***nǀúí***   *ko*   *ǃaòh*

        1SG   see   person   INDF   OBL   yard

        'I saw a (certain) person in the yard.'

    b. ***ǁ'à***   ***jù-à***   *kú*   *ǃaàh*

        DEF   person-REL.SG   IPFV   run

        'The person was running.'

Even if a slot can be established, there is a great deal of cross-linguistic variation in which elements can go in that slot. Articles and demonstratives are the prime suspects, obviously, but there are many other candidates, like personal and possessive pronouns, or quantifying elements, whose status varies on a language-by-language basis (Himmelmann 1997: 131). Elements that are determiners in one language (because they occur in a determiner position) are not necessarily determiners in another (e.g. Himmelmann 1997: 132). Possessives are an interesting example: they have been shown to occur both as determiners and as other type of modifiers in different languages. Lyons (1999: 24, 130-134), for instance, distinguishes between 'determiner-genitive' (DG) and 'adjectival-genitive' (AG) languages, depending on the function possessives have in a particular language. A language can be both DG and AG: Spanish, for instance, has both *mi casa* 'my house' (determiner) and *la casa mía* 'my house' (adjectival) (Lyons 1999: 133; see also Plank 1992). English and Swedish also allow both uses, with non-determiner possessives having a 'classifying' function in English (Willemse 2007),[45] and functions such as measuring or swearing in Swedish (Koptjevskaja-Tamm 2003). This distinction is illustrated in the English structures in (3-4). In (3-4a), the possessive *friend's* has a determiner function, because it marks the identifiability of the referent (by specifying whose house is meant). In (3-4b), the possessive *widow's* has a classifying function: it does not serve to identify a particular pension, but instead "contributes to the description of a (sub)type: what is being designated is the type of pension" (Willemse 2007: 538).

(3-4)   English (Indo-European; Willemse 2007: 538)

    a. *Matilda was supposed to be sleeping at **a friend's house** but decided to sneak home and play a joke on her family.*

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[45] This is what McGregor (1997b) calls 'subclassification'. See also chapter 1, section 3.1.2 on the Classifier slot in Gooniyandi.

b. *At present the parties to a divorce usually have insufficient financial resources for an ex-wife even to be reasonably compensated for loss of **a widow's pension.***

In the general literature on determiners, the languages with clear-cut determiner categories appear to dominate most of the theorising. Perhaps the clearest example is the argument found in some theories that the determiner category is really the head of the nominal expression; accordingly, they propose a determiner phrase (DP) as the basic syntactic unit instead if the NP (see Lyons 1999: 290-305 for a general discussion). From a typological perspective, this is difficult to maintain. Another issue that is strongly influenced by prototypical determiner languages is the nature of the determiner slot. It has sometimes been suggested that only one element at a time can occupy this position, and that complementary distribution is a requirement for determinerhood. From this perspective, articles and demonstratives can both be regarded as instances of a general determiner category in English because they are in complementary distribution in a single slot, as shown in (3-5), while in a language like Engenni (3-6) they cannot, because they can co-occur (see Dryer 2007a: 161; see also e.g. Van de Velde 2009: 253-256 for a discussion).

(3-5)   English (Indo-European)
        * *the that book*
(3-6)   Engenni (Niger-Congo; Thomas 1978; cited in Dryer 2007a: 161)
        ạni   wọ̀   âka   nà
        wife   2SG.POSS   that   the
        'that wife of yours'

There is an alternative view in the typological literature, however, which recognises the co-occurrence of identifiability markers as a cross-linguistically common pattern, also known as 'overdetermination' (Himmelmann 2001, Plank 2003). In this view, a determiner position can be filled by multiple elements at the same time, which together fulfil the general function of determination. In this scenario, the definite article and the demonstrative in (3-6) (and perhaps the possessive pronoun) can both be analysed as determiners. More recently, similar analyses have also been proposed for prototypical determiner languages like English. Specifically, the recent literature argues in favour of a 'determiner zone', consisting of three elements that can be combined: a predeterminer, a primary determiner and a secondary determiner (e.g. Bache 2000, Breban & Davidse 2003, Breban 2010,

Ghesquière 2009). In this analysis, the secondary determiner position can, for instance, be filled by adjectives like *other* in (3-7), which provide "additional information about the referential status of the instance(s) denoted by the NP" (Breban 2010: 158-159) by linking it to another NP (*this witch*).

(3-7)   English (Indo-European; Breban 2010: 158)

His uncle had said <u>this witch</u> had stood there looking at him and then made some medicine with his hands. His uncle had thought he might be calling to **the other witches** to come out of their cave and help.

Apart from the question of multiple determiners, another feature of determiner slots that has often been noted in the literature is their position: they are often found at the edges.[46] Rijkhoff (2002: 313, see also 218-223) explains this phenomenon in terms of a Principle of Scope, which states that "modifiers tend to occur next to the part of the expression that they have in their scope." As markers of identifiability, determiners have the broadest scope of all nominal categories: classification, qualification and quantification all contribute to the description of the referent, and determiners locate this in discourse. Rijkhoff (2002: 229-331) even argues for a further distinction between two categories of determiners, one of which is within the scope of the other (and accordingly occurs closer to the head). 'Localising' modifiers, like demonstratives and possessives, "specify the location of the referent in the world of discourse" (ibid.: 231). 'Discourse' modifiers, like articles and comparative modifiers (*the former, (the) same* …), specify whether the referent is identifiable or not, and can additionally "relate to the location where the referent was mentioned before in the actual conversation" (ibid.: 231). Discourse modifiers have localising modifiers in their scope, and thus occur at the very edge.

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[46] In some languages, determiners are not at the edges, because another slot can be identified outside the determiner slot. Languages like English or Dutch have 'peripheral modifiers' which occur before determiners (Payne & Huddleston 2002: 436-439, 452; Van de Velde 2009: 256), like *zelfs* 'even' in (i). There is some discussion, however, whether these elements should be analysed as pre-determiners (i.e. part of the determiner zone) or as a separate functional layer in the NP (Van de Velde 2009: 293-297).

    (i)   Dutch (Van de Velde 2009: 294)
        zelfs de   hogere klassen
        even   the   higher classes
        'even the higher classes'

1.2. Determining elements in Australian languages

For Australian languages, determining elements are very much an understudied domain. The relative lack of interest in determination may relate to the fact that these languages generally seem to lack the typical determiner features discussed above, like specialised word classes, obligatory use and competition in a particular position (e.g. Lyons 1999: 49; Blake 2001: 424; Dixon 2002: 66-67; Stirling & Baker 2007; Baker 2008; Stirling 2008). In Yir Yoront, for instance, an NP need not include an element which marks the identifiability status of the referent, as shown in (3-8a). When it does include such elements, moreover, they are not in complementary distribution, as shown in (3-8b), where an adnominal personal pronoun and a demonstrative together modify the head noun.

(3-8)   Yir Yoront (Alpher 1973: 281)

      a. *wârtyuwər*
         woman
         'a woman/ the woman'

      b. *wârtʸuwər*   *+áwər̥*   *+ôlo*
         woman   that   she.NOM
         'she that woman'

In the general Australian literature, there are only a handful of studies that deal with determination. One is Blake (2001), who investigates the use of (personal and demonstrative) pronouns as determiners in Australian languages. On the basis of structures like (3-9), where a third person pronoun (in this example suffixed with a deictic marker) modifies the head noun, he argues that where pronouns occur, they even constitute the head of the NP. The specific issue of personal pronouns used as determiners is further taken up by Louagie & Verstraete (2015), who show that this particular construction is relatively widespread in Australia, and that in some cases determining pronouns show signs of incipient grammaticalisation.

(3-9)   Pitta-Pitta (Blake 2001: 416)

     Nhu-wa-ka   *karna* *yurta-ka.*
     he-NOM-HERE man   swim-PST
     'The man swam.'

Stirling & Baker (2007) and Baker (2008) focus on the semantics of determiners: they use syntactic and discourse-based evidence to argue that Australian languages have a class of 'topic determiners', whose general function is that of "managing topics" (Stirling & Baker 2007: 5, 7). These topic determiners are largely optional and thus allow "speaker management of hearer attention" (ibid.: 7-8). An example is the recognitional determiner *nawu* in Gun-djeihmi (one of the Bininj Gun-wok varieties), which is used for "first mentions or first re-mentions of participants that should be readily identifiable once linguistic identification is made through naming" (Evans 2003a: 297; cited in Stirling & Baker 2007: 3).[47] This is illustrated in (3-10), where the birds introduced earlier in the text with bare nouns are reintroduced at the end of the story with the recognitional determiner.

(3-10) Gun-djeihmi (Evans 2003a: 298; cited in Stirling & Baker 2007: 3)

> *Djirndi* *na-wu* *na-mege* <u>*goddoukgoddouk*</u> <u>*na-wu...*</u>
> quail M-REL M-that bar.shouldered.dove M-REL
> 'That quail and that bar-shouldered dove...'

In individual grammars, determiners are mostly treated at the level of individual elements. Many grammars give a good picture of the semantics and morphology of demonstratives, for example, but a syntactic analysis, for instance investigating the presence or absence of a determiner slot or zone, is often not provided. Several grammars do point out that the marking of definiteness is not obligatory and that bare nouns are unspecified for definiteness or specificity (e.g. Meakins & Nordlinger [2014: 3] on Bilinarra; Cutfield [2011: 44] on Dalabon; Tsunoda [1981: 2] on Jaru; Pensalfini [2003: 201] on Jingulu). Grammars that do present a more detailed syntactic analysis are usually those that generally pay more attention to information structure and discourse, and often also present a detailed analysis of NP structure (like McGregor [1990] on Gooniyandi, Hill [2015] on Umpila/Kuuku Ya'u, or Spronck [2015] on Ungarinyin). Also, for the few Australian languages that do have a specialised determiner word class (like Marra or Pitta-Pitta), this has invited a more detailed analysis (e.g. Baker 2008; Blake 2001 resp.). The relative lack of attention to determination in the Australian literature is the reason why I take up the issue of determiners in Part II of this study. Chapter 5 provides a more detailed study of determiners in the languages of the sample, focusing mainly on the question of

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[47] The *nawu* demonstrative set has another function next to the recognitional one, viz. as relative pronoun. The gloss REL (relativiser) is used in both cases.

syntactic status – the presence of determiner slots – and the types of elements that can go in these slots.

2. NP constituency

2.1. Typological background

The question of noun phrase constituency has been quite prominent in the typological literature, driven in part by data from specific language families and areas (including Australia), and in part by the theoretical notion of non-configurationality. In its most basic sense, the issue boils down to the question whether nominal elements that belong together semantically also form a unit syntactically (i.e. an NP). Some of the classic criteria for unithood include the behaviour of nominal elements under conditions of movement and substitution, the potential for markers to attach at the edges of units, fixed linear order of elements within a nominal expression, and morphological agreement (e.g. noun class) (see Krasnoukhova [2012: 167-168] for a short discussion of several of these criteria). Thus, for instance, the elements *the*, *big* and *dogs* in the English structure in (3-11a) form a syntactic unit because they can only switch positions as one single unit and not separately, as shown in (3-11b), and because they can be replaced by one single element, like the personal pronoun in (3-11c). The Trumai structure in (3-12b) can be said to form a syntactic unit because it shows a fixed order of elements (following the general NP template given in (3-12a)), and because both the special morpheme *(i)yi* and the case marker attach to the right edge of the entire structure (Krasnoukhova 2012: 170). Conversely, the Nunggubuyu structures in (3-13) are not regarded as one single unit because the nominal elements can be split by other elements, as in (3-13a), and because they show flexible word order internally, as in (3-13b-c) (Heath 1984: 499-500; Heath 1986).

(3-11) English (Indo-European; Pavey 2010: 50-51)

    a. ***The big dogs*** *chased the cat in the street.*

    b. *It was **the big dogs** that chased the cat in the street.*

    c. ***They*** *chased the cat in the street.*

(3-12) Trumai (Trumai; Guirardello 1999: 29; cited in Krasnoukhova 2012: 170)

    a. NP structure: dem / num – possessor – N – property word

b. ***[ka'natl   dinoxo yi]=ki***   *chii(in)*   *ha*   *fa*
   DEM:DIST.F girl   *yi*=DAT   FOC/TENS 1SG   beat
   'I beat that girl.'

(3-13) Nunggubuyu (Heath 1984: 502, 499, 500)

a. ***nu:'bagiyunᵍ***   *ni:'maji,*   ***na-wulmur-inʸunᵍ***
   that.SG.M   he:stole   SG.M-bachelor-HUM.SG
   'That one committed theft, the bachelor.'

b. *wurunanʸ,*   *yuwa:gu*   ***wara:-'rawindi***   ***wara-mananunᵍ*** *big-mob*
   they:saw   there(distant) PL-many   PL-women   many
   'Many women saw (found) honey over there'

c. ***nᵍara-mula-maji:***   ***nᵍara:-'rawindi***   *nambanᵍiwanᵍana*
   SG.F-mosquito-if   SG.F-many   they.bite.us
   'if lots of mosquitoes bite us'

Problematic nominal structures like in Nunggubuyu have played a prominent role in the theoretical literature, as one of the defining characteristics of the broader theoretical notion of non-configurationality. Non-configurationality was originally defined in terms of a cluster of characteristics, such as free word order, discontinuous nominal expressions and null anaphora (Hale 1983); languages exhibiting these characteristics were argued to have no NPs or VPs at all (e.g. Blake 1983, Heath 1986). For instance, Kalkatungu was regarded as non-configurational because there is grammatically free word order in the clause, because elements of a nominal expression can occur in any order, and because they can occur discontinuously (Blake 1983). This is illustrated in (3-14), which shows how elements in the nominal expression can occur in different orders, as shown in (3-14a, c, d, f), and can often also be split off from the rest of the NP, as shown in (3-14b, c, e).

(3-14) Kalkatungu (Blake 1983: 45)

a. ***cipa-yi***   ***ṭuku-yu***   ***yaun-tu***   *yaɲi*   *icayi*
   this-ERG   dog-ERG   big-ERG   white.man bite
   'This big dog bit/bites the white man.'

b. ***cipa-yi*** ***ṭuku-yu*** *yaɲi icayi* ***yaun-tu***

c. ***ṭuku-yu*** ***cipa-yi*** *icayi yaɲi* ***yaun-tu***

d. ***yaun-tu*** ***cipa-yi*** ***ṭuku-yu*** *icayi yaɲi*

e. ***cipa-yi*** *icayi yaɲi* ***ṭuku-yu*** ***yaun-tu***

f. *yaɲi icayi* ***cipa-yi*** ***yaun-tu*** ***ṭuku-yu***

In the literature published since the original formulation of non-configurationality, there has been a lot of debate about how the notion should be defined, and which of the characteristics (including discontinuous NPs) are really a necessary condition to call a language non-configurational. I will not go into this question any further in this context, but the reader is referred to Jelinek (1984), Austin & Bresnan (1996), Baker (2001), Baker (2002), Evans (2002) and Pensalfini (2004) for alternatives to the original position, and to Croft (2007: 25-30) and Nordlinger (2014: 227-232, 237-241) for overviews. In spite of a growing consensus that non-configurationality really concerns the absence of a VP constituent rather than the absence of an NP constituent (e.g. Nordlinger 2014: 230), the idea that there are languages without NPs remains, especially for the languages of Australia.

This idea has also found its way into the general typological literature, like Rijkhoff's typological survey of the noun phrase, where several languages are classified as having 'non-integral' NPs (2002: 19-22). These are "languages in which noun modifiers (if we can still call them that) are not fully integrated constituents of the noun phrase," but rather in apposition to each other (ibid.: 19). In Rijkhoff's analysis, absence of NP constituency can be a general feature of a language (Rijkhoff only mentions some Australian languages to illustrate this possibility) or it can be restricted to certain types of nominal expression. For example, when a language has restrictions on the number of pre-nominal modifiers, it only allows extra modifiers to occur in apposition, usually following the head noun (Rijkhoff 2002: 11). In Yimas, for instance, an NP can maximally consist of two elements. A structure like (3-15a) is not allowed: any extra modifiers are separately marked and occur in apposition, as in (3-15b or c) (Foley 1991: 4, 184, 188; referred to in Rijkhoff 2002: 20).[48]

(3-15) Yimas (Indo-Pacific; Foley 1991: 184-185)

    a. *yua*   *kpa*   *impram*
      good   big   basket

    b. *[yua-m*   *[kpa*   *impram]]*
      good-VII.SG   big   basket.VII.SG

    c. *[[yua*   *impram]*   *kpa-m]*
      good   basket.VII.SG   big-VII.SG
      'a good big basket'

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[48] Another example of this type can be found in chapter 2, section 1.3.

In her typological survey of the noun phrase in South American languages, Krasnoukhova (2012: 177-181) adds to this point by showing that some languages have 'non-integral' NPs for certain types of modifiers. For instance, Hixkaryana only allows nominal possessors to be integrated in the NP, while other modifiers like demonstratives form separate NPs (ibid.: 178-179), as reflected in their flexible order (compare (3-16a) with (3-16b)) and separate case marking (as illustrated in (3-16c), where the noun and the demonstrative each have a separate comitative marker).

(3-16) Hixkaryana (Cariban; Derbyshire 1985: 53, 1979: 68, 40; cited in Krasnoukhova 2012: 178-179)

    a. ***ow-otɨ***   ***mosonɨ***   *Ø-ar-ko*   *ha*
        2-meat.food   DEM:PROX:AN   3-take-IMP   INTENS
        'Take this meat for you.'

    b. *Kaywana*   *y-omsï-r*   *y-oknï*   ***mokro***   ***kaykusu***
        Kaywana   LK-daughter-POSSD   LK-pet:POSSD   DEM:MED:AN   dog
        'That dog is Kaywana's daughter's pet.'

    c. *k-omok-no*   ***moson***   ***y-akoro***   <u>*ro-he-tx*</u>   <u>*y-akoro*</u>
        1SA-come-IMMPST   DEM:PROX:AN   LK-COM   1-wife-POSSD   LK-COM
        'I have come with this one, with my wife.'

One feature of 'non-integral' NPs that is particularly salient in the literature is that the noun and its semantic modifiers need not be adjacent and can occur discontinuously. Australian languages are (again) the prototypical example in the literature, but discontinuity has also been used as evidence for non-integral status of NPs in other languages. For example, in Mosetén, two elements that semantically belong together can be 'split' by a predicate, as in (3-17), which is seen as evidence that NPs in this language are non-integral (Krasnoukhova 2012: 176).

(3-17) Mosetén (Mosetenan; Sakel 2004: 105; cited in Krasnoukhova 2012: 177).

     jike   ***oye-si'***   *ja-yi-'*   ***phe-ya-k-dye'***
     PST   Oye-LK.F   finish-VSM-F.S   talk-VSM-MI-NMLZR
     'Then the story of the Oye finishes'

For several languages in which discontinuity has been observed, the phenomenon has been associated with specific functions, like contrastive contexts or the marking of focus (see the references in Rijkhoff [2002: 258-259] and in Schultze-Berndt & Simard [2012: 1038]). An example is Polish, for which Siewierska (1984) argues that

discontinuous NPs are only found in contexts where the elements of an NP have different information structural functions, viz. where one element of the NP is in focus, while the other is topic (most commonly a contrastive or a new topic). This is illustrated in (3-18), which shows a double contrast: *beautiful* is paired with *garden*, *house* with *crummy*. The first discontinuous NP in (3-18b) has *house* in pre-verbal position (associated with topic – we are still talking about the house, though in contrast with *garden* in the following clause), and *crummy* in post-verbal position (associated with focus). The second discontinuous NP in (3-18b) then has *beautiful* in topic position (continuing the topic in (3-18a), and contrasting with *crummy* from the previous NP) and *garden* in focus position (as it is new information) (Siewierska 1984). In other words, this study suggests that discontinuity is not free but has a function.[49]

(3-18) Polish (Indo-European; Siewierska 1984: 60)

    a. *Podobno*   *mają*   *piękny*   *dom.*
       apparently have   beautiful house
       'Apparently they have a beautiful house.'

    b. *Nieprawda!* **Dom**   *mają* **kiepski,** *ale* **piękny**   *mają* **ogród**
       untrue   house   have   crummy but beautiful have garden
       'Rubbish! Their house is crummy, but they have a beautiful garden.'

2.2. NP constituency in Australian languages

As is clear from the discussion above, Australian languages feature prominently in both the theoretical and typological literature as languages lacking NP units, with characteristics like flexible word order in NPs and discontinuity (e.g. Blake 1983; Hale 1983; Heath 1986; Blake 1987: 77; Harvey 1992; Himmelmann 1997; Rijkhoff 2002: 19-22, 255-257). One problem with much of the general literature is that it has a limited empirical basis, with claims that are usually based on the same handful of languages, like Warlpiri, Kalkatungu and Nunggubuyu.[50] If we look at individual grammars of Australian languages, the picture is very mixed. Many grammars

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[49] Rijkhoff argues that this type of discontinuity is different than from what is found in some Australian languages, because in those languages the elements do not form integral NPs anyway (2002: 255-257).

[50] At least one exception is Pensalfini's (1992) work on word order in a sample of 16 Pama-Nyungan languages, arguing for a one-way correlation between 'free' discontinuity and flexible word order in the NP.

explicitly discuss the question of constituency – reflecting its prominence in the theoretical literature – but not all come to the same conclusion. Some descriptions clearly confirm that a 'classic' NP constituent is absent (e.g. Evans [2003a: 227-234] on Bininj Gun-wok; Campbell [2006: 57] on Giimbiyu; Harvey [2001: 112] on Limilngan). For instance, Bininj Gun-wok is argued to lack strict NP structures, in which elements that semantically belong together "are related paratactically and the relations between them are worked out from pragmatics rather than syntax" (Evans 2003a: 227). The reasons for this analysis include the fact that elements that semantically belong together need not occur contiguously, and that there are no strict ordering tendencies within the nominal expression (Evans 2003a: 227-234). Other grammars, by contrast, provide evidence in favour of NP constituency (e.g. Gaby [2006: 277-278] on Kuuk Thaayorre; Nordlinger [1998: 131] on Wambaya). For instance, Kuuk Thaayorre is argued to have NP constituents because case markers are attached to the final eligible element of the NP (i.e. they serve as boundary markers), because there is a relatively strict internal word order, and because the NP has a single intonation contour (Gaby 2006: 277-278). Finally, there are languages for which different analyses are available. Even for Kalkatungu, for instance, which is considered the prototypical example of a language lacking integral NPs, there is an analysis that argues for determiners as (optional) head of the NP and head-dependency relations as part of its internal structure (Blake 2001).

The diversity of arguments in individual grammars, together with the narrow empirical basis of general claims made in the literature, suggests that there is a genuine need to study this question in a systematic way, using a broad range of languages. This is the subject of chapter 4, where I use my sample of 100 Australian languages to show that the evidence against NP constituency in Australian languages is not as strong as it has often made out to be. There are, in fact, a number of interesting leads for this in the Australianist literature (McGregor 1989, 1990, 1997a; Schultze-Berndt & Simard 2012; Croft 2007), where several authors have proposed alternative analyses for some of the phenomena that are often taken as strong evidence against NP constituency, like flexible ordering and discontinuity. For instance, McGregor (1990) uses data from Gooniyandi to show that apparent flexibility of word order can be resolved by looking at functional categories instead, and thus need not be an argument against constituency. For example, a descriptive adjective can precede or follow the head noun. This is not a matter of free variation in order, however. McGregor shows show this difference can be related to a difference in function: in pre-head position

the adjective acts as Classifier, in post-head position as Qualifier. Thus, in (3-19a), the adjective helps to identify a subtype of women (according to race or cultural group), while in (3-19b) it describes a property of the referent (the colour of the flower). (See further in chapter 4; see Harvey [1992] for a critique of this analysis.)

(3-19) Gooniyandi (McGregor 1990: 272)

    a. Classifier - Entity

       thiwa   *goornboo*

       red   woman

       'a white woman'

    b. Entity - Qualifier

       jiga   *thiwa*

       flower red

       'a red flower'

Second, on discontinuity, McGregor (1997a) and Schultze-Berndt & Simard (2012) use data from Gooniyandi and Jaminjung to argue that discontinuity of nominal expressions is actually restricted to certain formal and functional contexts and is a "meaningful option" (McGregor 1992: 316) rather than a free variant of contiguous expressions (much as argued by Siewierska for Polish; see section 2.1). For instance, one of the functions of discontinuous NPs in Jaminjung is contrastive argument focus. The example in (3-20) is an extract from a mythical narrative that accounts for the differences between the brolga and the emu. In this example, the number of their offspring is contrasted (two vs. many children). In the first intonation unit, the NP *jirrama jarlig* 'two children' is split, with the quantifier *jirrama* 'two' occurring in initial position (the position associated with focus), as it contributes to the contrastive interpretation (Schultze-Berndt & Simard 2012: 1034-1035).

(3-20) Jaminjung (Schultze-Berndt & Simard 2012: 1035)

    ^***jirrama***   *ganuny-ma-ya*   ***jarlig,***   *gumurrinyji* *orait,*

    two   3SG>3DU-have-PRS child   emu   all.right

    ^*bardawurru* *gana-ma-ya* \ ..   *jarlig* \

    many   3SG>3SG-have-PRS   child

    'She (the brolga) has two children. The emu, all right, she has many, children that is.'

In chapter 4, I show that such clear functional differentiation for discontinuous structures suggests that discontinuity need not be regarded as evidence against NP constituency.

Part II: NP constituency and determination

The second part of this dissertation takes up the two questions that were introduced in the final chapter of Part I, viz. the status of determining elements and the issue of NP constituency. While all questions addressed in the previous chapters require more work, determination and NP constituency constitute the most obvious gaps in the literature – one because it is only rarely discussed in grammars or more general studies, and the other because it is frequently discussed, but has never really been tested on a larger scale. The next two chapters investigate these two questions in detail, and propose an in-depth analysis for each of them.

The question of NP constituency is taken up in chapter 4, where I use a set of concrete parameters to determine whether there is evidence for syntactic unithood of nominal expressions in the languages of the sample. I show that there is clear evidence against the widespread idea that Australian languages generally lack phrasal structure for nominal expressions. As an alternative, it may be more interesting to typologise languages in terms of where and how they allow phrasal construal rather than in terms of a simple yes-no distinction, and I also apply this idea to discontinuous structures. Chapter 5 examines the status of determining elements. I show that a determiner slot can be identified in about half of the languages of the sample. I also investigate which elements can occur in determiner slots, with a special focus on elements that can be used both inside and beyond these slots.

Unlike in the survey chapters, the analysis in these chapters is intended to be as exhaustive as possible for the sample, at least as far as the sources allow this. Accordingly, the data are treated differently here. The text of the chapters discusses the basic arguments and categories, with relevant examples, and the maps provided summarise the relevant information for all sample languages. Details of the analysis for each individual language are also included with each chapter, in the form of tables that categorise all languages in the sample, with reference to the specific part of the source materials on which the analysis is based. This allows the reader to trace back decisions for each language in the sample. Because of their size, the tables are located at the end of each chapter, so as not to interrupt the flow of the argument.

Chapter 4: Noun phrase constituency

1. Introduction[51]

As discussed in chapter 3 (section 2), it has often been argued that Australian languages show unusual syntactic flexibility in the nominal domain, and may even lack clear noun phrase structures altogether (see also McGregor 1997a: 84; Cutfield 2011: 46-50; Nordlinger 2014: 237-241, for overviews and more general discussion of claims to this effect). This idea is based mainly on features like flexibility of word order and the availability of discontinuous nominal expressions, as illustrated in the examples in (4-1)-(4-3) below.

(4-1)   Bininj Gun-wok (Evans 2003a: 707, 207)

    a. *"wanjh,* ***an-dehne gukku***   *nga-bo-bawo-n*   *bedberre*
        well   VE-that   water   1-liquid-leave-NPST   for.them
        munguih-munguih"
        for.ever
        'Yeah, I'll leave that water for them forever...'

    b. ***gun-barlkbu***   ***an-ege***   *bi-rrerlme-ng*
        IV-digging.stick   VE-that   3/3H.PST-throw-PST.PFV
        'She threw that digging stick at him.'

(4-2)   Warlpiri (Hale 1983: 6)

    wawirri   *kapi-rna*   *panti-rni*   ***yalumpu***
    kangaroo   FUT-1SG.SA   spear-NPST that
    'I will spear that kangaroo.'

(4-3)   Kalkatungu (Blake 1983: 45)

    a. ***cipa-yi***   ***ṭuku-yu***   ***yaun-tu***   *yaɲi*   *icayi*
        this-ERG   dog-ERG   big-ERG   white.man   bite
        'This big dog bit/bites the white man.'

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b. ***cipa-yi ʈuku-yu*** *yaɲi icayi* **yaun-tu**

c. ***ʈuku-yu cipa-yi*** *icayi yaɲi* **yaun-tu**

d. ***yaun-tu cipa-yi ʈuku-yu*** *icayi yaɲi*

e. ***cipa-yi*** *icayi yaɲi* **ʈuku-yu yaun-tu**

f. *yaɲi icayi* **cipa-yi yaun-tu ʈuku-yu**

The two Bininj Gun-wok structures in (4-1) show that nominal word order is flexible, in that, for instance, the demonstrative can both precede and follow its nominal head. The Warlpiri structure in (4-2) shows how a modifier, again a demonstrative, can be detached from its apparent nominal head in a discontinuous construction. These two properties are taken to their extremes in the oft-cited Kalkatungu example in (4-3) (repeated from (3-14)), which allows at least six different structures for a demonstrative, adjective and nominal head, in different orders and with different modifiers separated from their apparent heads. The features of word order flexibility and discontinuity illustrated in (4-1)-(4-3) have been regarded as indications that languages like Bininj Gun-wok or Kalkatungu lack phrasal structures in the nominal domain, without obvious internal structure or cohesion to suggest that a noun and its semantic dependents form a constituent in the 'classic' sense (e.g. Evans 2003a: 227-234; Blake 1983: 145).

As already mentioned, the existing literature about NP constituency in Australian languages is strongly embedded in theoretical debates about non-configurationality (e.g. Hale 1983, Blake 1983, Heath 1986, Austin & Bresnan 1996), and often also has a limited empirical basis, with claims that are based on only a handful of languages (typically including the well-known cases of Warlpiri, Nunggubuyu or Kalkatungu). The aim of this chapter is to check how valid general ideas about NP constituency in Australian languages really are, i.e. whether nominal elements that belong together semantically show any evidence for syntactic unithood. We try to answer this question by addressing the two main problems in the existing literature. On the one hand, we disentangle the issue from the wider theoretical debate on non-configurationality by focusing on the question of NP constituency in its own right (following Nordlinger [2014]), breaking it down into a set of concrete parameters that can be checked in a consistent way over a range of languages. On the other hand, we broaden the empirical basis by using our sample of 100 Australian languages. The results of our analysis show that there is no evidence for any widespread absence of NP constituency across Australia, rather on the contrary. In this sense, our survey

confirms earlier analyses that provide alternative perspectives on NP structure in Australian languages (e.g. McGregor [1990] on Gooniyandi), or that give clear evidence in favour of 'classic' NP constituency (see chapter 3, section 2.2). More generally, the results also imply that specific grammatical descriptions may have to be revisited on this point, and that theoretical or typological work (for instance on non-configurationality) should not take simple generalisations about NP structure in Australian languages for granted.

The rest of this chapter is structured as follows. Section 2 presents the set of parameters we use for determining constituency status, discussing the rationale behind each parameter. Section 3 analyses the results, showing that especially the parameters of word order and locus of case marking provide clear evidence against the idea that Australian languages generally lack noun phrase structures. Section 4 zooms in on discontinuous structures, examining the motivations for discontinuity where they are available, and arguing that the existence of discontinuous constructions is not invariably an argument against NP constituency. Section 5 wraps up with some conclusions, including the argument that it makes more sense to typologise languages on the basis of where and when they allow NP construal for elements that belong together semantically, rather than on a yes-no answer to questions of constituency or (dis)continuity.

2. Parameters

As mentioned in section 1, the aim of this chapter is to study NP constituency in its own right, independently from the more general theoretical question of non-configurationality. In other words, we want to know whether elements that semantically belong together can be construed as one syntactic unit, i.e. an NP. In order to do this, we break down the concept into a number of concrete parameters that define constituency, which can be checked across the sample in a consistent way. Obviously, the sources do not allow us to check these criteria exhaustively for all languages, but there are a number of criteria for which we have good information across the entire sample. We distinguish between external and internal criteria for constituency. External criteria, discussed in section 2.1, identify a constituent in terms of its interaction with the structure of the clause, e.g. the locus of case marking in the nominal domain, or the position of nominal elements relative to diagnostic slots in clausal morphosyntax. Internal criteria, discussed in section 2.2, identify a constituent

in terms of its internal structure, e.g. the relative order of nominal elements or the contiguity of these elements.

Just as a reminder, this chapter uses the term NP only for nominal expressions that show evidence for syntactic constituency (unlike in the other chapters in this thesis). When generally referring to a group of elements in the nominal domain that belong together semantically, regardless of whether or not they form a syntactic unit, we use the term 'nominal expression' (NE).[52] Another convention concerns the NP/NE templates provided throughout the text, as explained in the Introduction: (G) indicates that the template was provided in the grammar, (W) indicates that the grammar provides word orders, which we put in template format, and (E) indicates that the template is based on examples throughout the grammar. Within the templates we refer to word classes, but as already mentioned, we use them as comparative concepts, without making statements on word class status in individual languages (Haspelmath 2010; see Introduction; chapter 2, section 1.2).

2.1.   External parameters

External criteria for constituency focus on the interaction of a constituent with the structure of the clause: where case markers are located (section 2.1.1), where nominal expressions can occur relative to diagnostic slots for constituency (section 2.1.2), and how prosody suggests unithood (section 2.1.3). In addition to telling us if nominal expressions are treated as one unit in the clause, in some cases these criteria also provide a clear delimitation of (one of) the edges of the nominal expression.

2.1.1. Locus of case marking

The marking of case in a nominal expression is a first criterion that may tell us something about its status as a syntactic unit. In the sample, there are three basic options (see also Blake 1987: 78-91): marking of one element in the nominal expression, marking of all elements, or no marking at all.

The first option is for case to be marked on only one element of the nominal expression, i.e. phrasal marking (see also Blake 1987: 78-86). The selection of one

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[52] We will not go into the question whether nominal expressions are better analysed as DPs (determiner phrases) or NPs. The focus is on syntactic unithood; a study of headedness would go beyond the scope of this thesis.

element for case marking implies that the nominal expression is in fact one syntactic unit, which is marked for its role in the clause through one of its constituent parts. In addition, if case is marked at either the left or the right edge of the nominal expression, then this also serves to mark one of the boundaries of the NP. An example is Yandruwandha, where the ergative case suffix is attached at the right edge of the nominal expression, as in (4-4), thus showing that the noun and its modifier can be analysed as a single NP, with the modifier forming its right edge.

(4-4)   Yandruwandha (Breen 2004a: 77)

     ngala **wathi malkirri-li**   *nganha*   *ngarndangarndamaritji*

     then   tree   many-ERG   1SG.ACC   block:RDP:CAUS:UNSP:EMPH

     'A lot of trees blocked me from getting through.'

Another option is for case to be marked on each element of the nominal expression, i.e. word marking (see also Blake 1987: 86-91). In itself, this does not tell us anything about constituency, because there can be more than one reason for word marking. One reason may be that the elements are separate nominal expressions in apposition, which have the same case marker because they have the same function in the clause. This is how Blake (1983; see also 1987: 89-90) analyses the structure in (4-3) above from Kalkatungu (not in the sample, but see fn. 64), repeated below as (4-5): the demonstrative, the adjective and the noun are analysed as three elements in apposition, each of which is a dependent of the verb, and therefore receives its case marker directly from that verb.

(4-5)   Kalkatungu (Blake 1983: 45)

     cipa-yi   **ṭuku-yu**   **yaun-tu**   *yaŋi*   *icayi*

     this-ERG   dog-ERG   big-ERG   white.man bite

     'This big dog bit/bites the white man.'

Another possible motivation for word marking may be that the elements of a nominal expression have the same case marker due to a process of agreement within a single NP. In such cases, there is usually other evidence for constituency, as in Yingkarta, illustrated in (4-6) below. In this language, word order is quite fixed, with modifiers preceding the nominal head, which constitutes independent evidence for constituency (see also section 3.1 below). Moreover, case may also be marked on only one element of the NP in this language, which further confirms that word marking in this structure really is agreement rather than apposition of separate NPs.

(4-6) Yingkarta (Dench 1998: 19)

kutharra-lu   mayu-ngku   pinyarri-nyi

two-ERG   child-ERG   fight-PRS

'Two children are fighting.'

Next to phrasal marking and word marking, the third option is that case is not marked in nominal expressions at all. This is often the case in head-marking languages (most of the non-Pama-Nyungan languages in the sample), where the core argument relations are marked on the verb, and corresponding nominal expressions remain unmarked (especially for core arguments, but possibly also non-core arguments or adjuncts). An example of such a language is Ndjébbana, where case is generally not marked in the nominal expression, as in (4-7), although case affixes are available for certain roles (e.g. ablative, purposive or object of hunt; McKay [2000: 155, 191]).[53]

(4-7) Ndjébbana (McKay 2000: 191)

karrddjúnja *njana-bá-la-yángaya*

stingray   1MIN.OBJ<MIN.A-bite-REM-3MIN.F.A

'A stingray bit me.'

These options are not mutually exclusive. It is common to find languages that allow both phrasal marking and word marking, as already mentioned for Yingkarta above. Relative frequencies and functions of the two alternatives are discussed in more detail in section 3.2. More generally, the locus of case marking is also one of the criteria for which good information is available across the entire sample, and thus will serve as one of the central criteria in our analysis in section 3.

2.1.2. Diagnostic slots

This criterion concerns the existence of so-called diagnostic slots in clausal morphosyntax, which are defined in terms of constituency. The best-known example is when a language has an element that obligatorily comes in the second position of the clause, following the first constituent. Evidently, this criterion is more limited in the sample than the previous one, as only some languages have such slots, but there are some famous cases like Warlpiri, where the verbal auxiliary has a fixed position as

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[53] Whether these show phrasal marking or word marking is unclear: no relevant examples can be found in the grammar.

the second element in the clause, following the first constituent (e.g. Hale et al. 1995: 1431). This implies that all elements occurring in the first position before the auxiliary have to be analysed as one constituent. Accordingly, in example (4-8), the noun *wawirri* and the demonstrative *yalumpu*, both preceding the second position auxiliary, must be analysed as forming a syntactic unit.

(4-8)   Warlpiri (Hale 1983: 6)

wawirri	**yalumpu**	<u>*kapirna*</u>	*panti-rni*
kangaroo	that	AUX	spear-NPST

'I will spear that kangaroo.'

Obviously, this criterion only allows us to determine the constituency status of nominal expressions occurring in this slot, but not in other positions, so it is slightly less conclusive than the previous criterion. Even so, the existence of slots defined in terms of constituency in a particular language does suggest quite strongly that construal as an NP is at least available in this language.[54]

2.1.3.   Prosody

A final 'external' criterion concerns prosody, more specifically the expectation that constituents will tend to form one prosodic unit, and will allow less easily for prosodic breaks. This is the external criterion that is least widely applicable in our sample: most of the grammars provide little or no information concerning prosody. Still, as prosody can be crucial in distinguishing several types of constructions (cf. e.g. Schultze-Berndt & Simard 2012, see also in section 4), we will refer to prosodic information whenever it is available.

2.1.4.   Other

There are some other external parameters that have traditionally been used to diagnose constituency, like substitution ('constituents can be replaced by one lexical element') or coordination ('constituents of the same type can be conjoined') (see also chapter 3, section 2). While such criteria are often part of the basic toolkit of initial

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[54] This type of slot can often also take other elements than nominal expressions, which may eliminate the degree of circularity in the argument (thanks to Hendrik De Smet and Freek Van de Velde for pointing out this potential problem).

fieldwork, they rarely find their way into grammars, which means they are difficult to apply to the sample, and have not been used in this study.[55]

2.2.   Internal parameters

In addition to the external criteria, there are also two criteria that probe the internal structure of nominal expressions to diagnose constituency: contiguity, discussed in section 2.2.1, and word order, discussed in section 2.2.2.

2.2.1. Contiguity

The relevant criterion here is whether the elements of a nominal expression are contiguous, i.e. adjacent, or not. When they are, the elements are most likely one unit (though this is not necessarily the case, as they could also be analysed as several single-item NPs in apposition, see also example (4-5) above, and sections 3.2 and 4 below). When they are not contiguous, however, as in the Garrwa structure in (4-9) below, this has often been interpreted as evidence against NP constituency. Thus, for instance, Mushin (2012: 260) argues on the basis of structures like (4-9) that "the capacity for discontinuity suggests that nominal groups do not constitute a clearly defined syntactic unit."[56]

(4-9)   Garrwa (Mushin 2012: 259)

nayinda	*langi-na*	***wirringarra***	*badajba=yi*
this	north-ABL	cyclone	come=PST

'This cyclone came from the north.'

The question is, however, whether this always follows when a language has discontinuous structures. We believe that the presence of discontinuous constructions in a language does not necessarily imply that contiguous constructions in the same

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[55] Two sources in our sample that do at least discuss the criteria, and identify a number of difficulties with them, are Bowern (2012: 328-329) on Bardi and Spronck (2015: 37) on Ungarinyin.

[56] However, Mushin does attribute some "phrase-like" qualities to nominal groups: "The observed patterns of ordering and contiguity of nominal groups in the corpus suggests a preference for co-referential members of a nominal group to stick together and for the least prominent common nominal to occur last in the group. Consistent case marking of this group's elements also suggest that speakers treat these as items contributing to the elaboration of a semantic role (whether a core argument or an oblique role)." (Mushin 2012: 260)

language cannot be analysed as genuine NPs (see further in section 4 on this argument). Therefore, we investigate discontinuity separately in section 4 below.

2.2.2. Word order

Word order is the most important internal criterion for constituency in this chapter, because we have at least some information for almost all languages of the sample.

If nominal expressions have a fixed word order in a language, this is evidence for constituency, in the sense that the existence of a clear internal structure for a nominal expression points towards unithood. This is the case, for example, in Umpithamu, as illustrated in the NP template in (4-10a) and the structure in (4-10b).

(4-10) Umpithamu (Verstraete 2010: 11, 7)
   a. Template (G):
       [N N A Num]-case Pron
   b. ***wantya***   ***waarruthu***   ***uutherri***   *wuna-n=ula*   / *weerra*
       old.woman   no.good   two   lie-PST=2DU.NOM   / sleep
       'Two old ladies were sleeping (there).'

Flexible word order, by contrast, has often been regarded as one of the main arguments against NP constituency in Australian languages. If we look at it in more detail, however, word order flexibility is not as straightforward a phenomenon as it might seem to be: it covers a range of different types of flexibility, and conclusions concerning constituency status for the nominal expression differ accordingly. As we show in section 3.1 below, much of the flexibility in nominal expressions in Australian languages is actually constrained, and some of these restrictions even provide evidence for, rather than against, syntactic unithood. An example is Umpila, as illustrated in (4-11) below, where the order of the head noun and the modifier is fixed, while the determiners (personal pronoun, demonstrative, quantifier or possessive pronoun) can occur at either edge of the nominal expression, but not in between the head noun and the modifier.

(4-11) Umpila/Kuuku Ya'u (Hill 2015)
Template (G):
(Det) (Entity) (Mod) (Det)
with Det: ⎡[(Pron) (Dem) (Quant)] or
⎣[Poss.Pron]

This can be called flexibility, but it does not point towards the absence of internal structure, and therefore also the absence of constituency. On the contrary, it preserves the edges of the nominal expression, and therefore shows that the nominal expression is one unit. There are, of course, also languages that show genuine word order flexibility for nominal expressions, i.e. where there are no clear restrictions whatsoever, but at best some tendencies. An example is Warrongo, where demonstrative, noun and adjective can occur in different orders, as illustrated in (4-12) below, and for which Tsunoda (2011: 347) argues that "the relative order of NP constituents is not fixed, and it is difficult to generalize about it." This is really the only type of language where flexibility provides evidence against constituency.

(4-12) Warrongo (Tsunoda 2011: 688, 596, 348)

a. *gaya-na-Ø*   *ngaygo*   / *mayga-lgo* **yarro-wo**   **yamba-wo**
father-KIN-ACC   1SG.GEN   tell-PURP   this-DAT   camp-DAT
jarribara-wo   *yani-yal.*
good-DAT   come-PURP
'I will tell my father to come to this good camp.'

b. *ngaya*   **bori-Ø**   **ngona-Ø**   **gagal-Ø**   *wajo-n*   *ngaya*
1SG.ERG   fire-ACC   that-ACC   big-ACC   burn-NFUT   1SG.ERG
yori-Ø   *goyba-lgo*   *bori-wo*
kangaroo-ACC   throw-PURP   fire-DAT
'I made a big fire so that I could throw a kangaroo to the fire.'

c. **jarribara-Ø**   *yarro-Ø*   *banggo-Ø*
good-NOM   this-NOM   hollow-NOM
'This nice hollow.'

2.2.3. Other

Two other criteria that are sometimes mentioned in the literature are gender and number agreement (see chapter 1, section 5; chapter 2, section 2.2; and chapter 3, section 2). However, it is not clear what they can tell us about NP constituency, as they mark dependency relations rather than constituency, and are not even limited to the nominal domain. The only instance where this type of agreement could be interesting is when it is tied to case marking and changes location along with it – in which case it really is an instance of the criterion of locus of marking mentioned in section 2.1.1 above. This is found, for instance, in Arabana/Wangkangurru (Hercus 1994: 63) and in Warlpiri (Nash 1980: 174), where number (if marked at all) is marked on the same element(s) as case. Example (4-13) from Arabana/Wangkangurru shows this clearly, with number and case both marked at the right edge of the NE in (4-13a) or on each element of the NE in (4-13b).

(4-13) Arabana/Wangkangurru (Hercus 1994: 63)

    a. *Mathapurda*   *kumpira-kumpira-**kari-ri**   ngunta-ka.*
        old.man   dead-dead-PL-ERG   show-PST
        'The old men, long dead, told me this.'

    b. *Mathapurda-**kari-ri**   kumpira-kumpira-**kari-ri**   ngunta-ka.*
        old.man-PL-ERG   dead-dead-PL-ERG   tell-PST
        'It was the old men who told me this, the old men long dead.'

A third criterion concerns internal complexity of the NE, for instance, whether it can include embedded NEs or adjectival phrases. The availability of complex structures is definitely a good argument against the so-called 'flat' structure of nominal expressions. However, it is not investigated in any more detail in this thesis, which is limited to a study of simple NEs (see the Introduction, but see chapter 2, section 1.3, for some comments on adjective phrases).

2.3.   Overview

Table 4 provides an overview of the parameters we use in this study. As already mentioned, we have to distinguish between those criteria for which we have good information across a large part of the sample (locus of case marking, word order, and

contiguity), and those criteria for which we only have information in some languages (prosody and diagnostic slots).

	External parameters	**Internal parameters**
Used for all languages	Locus of case marking	Word order
		Contiguity
Used where applicable or where information is available	Prosody Diagnostic slots	/

Table 4: Parameters for constituency

3. Results

In this section, we discuss the results of our analysis for four of the five criteria discussed in the previous section, and we show that there is in fact little evidence against NP constituency across the sample. In sections 3.1 and 3.2, we discuss word order and case marking, the two criteria for which we have most information. This is followed by a discussion of occurrence in diagnostic slots and prosody in sections 3.3 and 3.4. In section 3.5, we investigate how the results cluster on a language-by-language basis, and what this can tell us about NP constituency. The final criterion, which relates to discontinuity, is discussed separately in section 4.

3.1. Word order

Before we can discuss the results for this criterion, two methodological notes are in order. One of these concerns the units whose order is analysed. In the large majority of the grammars in our sample, word order for nominal expressions is described in terms of word classes, like demonstrative, noun, adjective etc. This is not the ideal basis for a description of word order, however, as ordering patterns typically concern slots that can be filled by words of different classes. This has been demonstrated convincingly by McGregor (1990), who shows that noun phrases in Gooniyandi can be described in terms of a functional template, listed below in (4-14a) (see also chapter 1, section 3.1.2, and chapter 3, section 2.2). One function can be realised by elements from different word classes, and elements from one word class can have different

functions, like the adjective *nyamani* 'big', which functions as a Quantifier in pre-head position, as illustrated in (4-14b) (repeated from (2-56)), or a Qualifier in post-head position, as illustrated in (4-14c).

(4-14) Gooniyandi (McGregor 1990: 253, 260, 265)

    a. Template (G):

        (Deictic)^(Quantifier)^(Classifier)^Entity^(Qualifier)

    b. *nyamani gamba*

        big   water

        'a lot of water'

    c. *yoowooloo nyamani*

        man   big

        'a big man'

From the perspective of word order, this also implies that in a language like Gooniyandi, apparent flexibility in terms of word classes can actually be resolved in terms of functional classes (see also chapter 3, section 2.2). Ideally, therefore, checking the criterion of word order across the sample would involve functional classes and not word classes. However, there is very little functional information available overall in our sample: only 14 grammatical descriptions use functional classes in their discussion of word order; the rest use descriptions based on word classes. Whenever we have an analysis in terms of functional classes for a language, we use it, but for the rest we have to rely on analyses that are exclusively based on word classes. It is, of course, not unlikely that in such cases apparent flexibility could be resolved in terms of functional classes, as for Gooniyandi, but we take the more cautious perspective here, and do not go beyond any generalisations allowed by the grammars we use.

Our second methodological note concerns the quality of the data (see also the Introduction, section 2.2). While all grammars provide basic information about word order in the nominal domain, the information is sometimes quite limited. For instance, some grammars only discuss word order for one modifier at a time (rather than longer nominal expressions), and only focus on adjectives and demonstratives (omitting modifiers such as possessive pronouns, personal pronouns or numerals). This implies that for such grammars the explicit description of word order found in the text is not sufficient; in those cases, we rely on an analysis of examples throughout the grammar to supplement the basic description. Whenever we have had to do this, this is marked explicitly in table 6.

Overall, we can categorise languages in the sample in terms of three basic types of word order, discussed in sections 3.1.1-3.1.3 below: fixed order, restricted flexible order, and flexible order. At least for the first two types, which together cover 65 languages, patterns of word order provide evidence for NP constituency.[57] The map below shows the spread of the word order types across the sample. An overview of our analysis for each individual language can be found in table 6 (to be found at the end of this chapter, p. 154), including references and more details.[58]
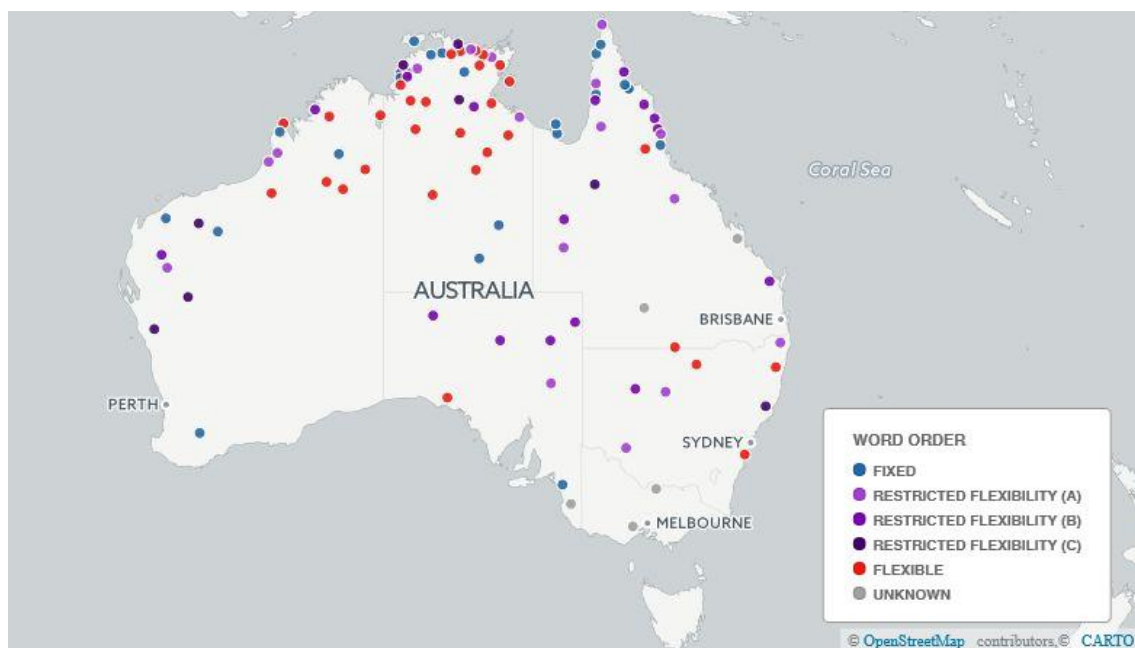
Map 8: Word order in the NE. For an online, dynamic version of this map, see: http://bit.ly/wordorder-NP. For additional notes and references, see table 6.

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[57] Incidentally, most languages of the sample seem to follow general word order tendencies for nominal expressions as discussed in Dryer (2007b: 111-113) or Rijkhoff (2002: 327-332). For instance, when a demonstrative and an adjective both precede the nominal head, the demonstrative comes first, and where they both follow the nominal head, the demonstrative usually – but not always – comes last (cf. Greenberg's universal 20 [1966: 87] and Dryer's discussion [2007b: 111-113]). Unfortunately, for many languages we only have limited information about word order in NEs with more than one modifier, or about the position of numerals in the NE. Where information is available, it seems that almost all languages follow the tendencies described above.

[58] Two languages have changed categories compared to the published paper, viz. Muruwari and Bundjalung. Bundjalung remains in the category of restricted flexible order, but is now analysed as belonging to a different subtype, based on the analysis of a larger number of examples. Muruwari was first analysed as having restricted flexible order, but has been moved to the flexible category; this decision is based on the analysis of extra examples, which show a more flexible order of determiners than first assumed (though many are ambiguous).

3.1.1.   Fixed word order

In the sample, there are 21 languages that have fixed word order, which shows that at least in terms of their internal structure, nominal expressions form a syntactic unit (i.e. an NP). One example is Kuuk Thaayorre, which has fixed word order for NEs, illustrated in the template in (4-15a) and the example in (4-15b). A second example is Nyungar, which also shows fixed order in NEs, as illustrated in (4-16).

(4-15)   Kuuk Thaayorre (Gaby 2006: 297-298, 411)

    a.   Template (G):

       ((Ngen) (Ngen) (Nspec)) ((Deg) Adj (Deg))* (Poss) (Quant) (DemPron) (IgnPron) (AdnDem)

    b.   ***paanth   pinalam   ith***   *ngamal.katp-rr-ø   peln*

       woman   three(NOM)   DEM:DIST   hug-RECP-NPST   3PL(NOM)

       'The three women hug each other.'

(4-16)   Nyungar (Douglas 1976: 44-45)

    a.   Template (G+W):

       <u>Word class:</u> poss – N(s) – [A – intensifier] – dem

       <u>Functional class:</u> possession – head – modifier – specifier

    b.   *njunaŋ   nop   kumpaṛ meṭ   al(-itj)*

       your   child   big   very   that(distant)(-subject)

       'That very big child of yours...'

    Some of these languages allow a change in word order for emphasis or focus, as in Tiwi, where the head noun normally occurs in penultimate position, as shown in (4-17a), but can be fronted for focus or for stylistic effect, as in (4-17b) (Lee 1987: 222, 243 note 5). Since such changes have a clear functional motivation and are not the default, we do not regard this as counter-evidence for NP constituency.

(4-17)   Tiwi (Lee 1987: 222, 224)

    a.   Template (G):

       (Limiter) (Definitive) (Dem) (Quantifier) (Descriptive) (Head) (Exposition)

    b.   *pilayiki   yirrara*

       flag(M)   two(M)

       'two flags'

The map above shows that fixed order is not restricted to a particular area but spread out across the continent. Several, but not all, of the Paman languages (Cape York) have fixed order, as do the Tangkic languages on the nearby Gulf of Carpentaria and the two Arandic languages in the sample. In the west and north of Australia, the languages with fixed word order stand out amongst the many languages with restricted flexible or completely flexible orders. Interestingly, these are mostly languages that have been described in terms of functional classes in the grammars (e.g. Nyulnyul, Gooniyandi, Martuthunira, Gaagudju), which suggests that the results for some of the genetically related languages could look quite different if they too were to be analysed in terms of functional classes.

3.1.2. Restricted flexibility

There are 44 languages with some degree of flexibility in word order for nominal expressions, but where the flexibility is such that it cannot be regarded as evidence against NP constituency – rather on the contrary. In this section, we distinguish three subtypes, showing for each how flexible word order is compatible with, or even evidence for, NP constituency.

A first subtype ((A) on the map above) is flexibility that is clearly limited in frequency, i.e. where the language has one dominant general NP template, but where other orderings are also possible to a limited extent. This is the case for 19 languages in the sample. An example is Yingkarta, for which Dench (1998: 50-51) argues that 90% of the NPs follows the pattern in (4-18a), while there is also a minor pattern illustrated in (4-18b). Another example is Biri, where demonstratives "always" precede the noun and adjectives "usually" or "typically" do so as well, as illustrated in (4-19) (Terrill 1998: 29, 45, 47).

(4-18) Yingkarta (Dench 1998: 50)
  a. Template (G):
      (Determiner) (Modifier) Head
  b. *Wanthawu   yurlu-ja   nyintangu?*
      where   camp-DEF   2SG.GEN
      'Where is your camp?'

(4-19) Biri (Terrill 1998: 47, 29, 74)

    a. Template (W):

       dem – N

       A – N > N – A

    b. **yinhami** **manhdha**   *yuga-lba-ŋ-aya*   *guya …*

       this.ABS   food.ABS   eat-CONT-PRS-2SG.S/A   bad

       'this food I'm eating is bad'

    c. *ŋaya*   *naga-lba-ya*   **binbi** **waynmari-gu**

       1SG.S/A   see-CONT-1SG.S/A   good   girl-DAT

       'I see a nice girl.'

Given the difference in frequency, it is quite likely that minority patterns correlate with changes in meaning or function, in which case they could be like (4-17) in the previous category, or could even allow for an analysis in terms of functional classes. We do not have the necessary functional information to support this hypothesis for the languages in this category, but there are hints of meaning changes correlating with minor word order patterns for some. In Yingkarta, for instance, Dench suggests that the minor pattern of a possessive pronoun following a head noun in (4-18b) has a marked interpretation, glossed as 'that X of yours' (Dench 1998: 51).

The other two subtypes both show word order flexibility that is edge-preserving. In the languages in these categories, word order is flexible for some elements, but in such a way that one (or both) of the edges of the nominal expression are preserved and thus clearly delineated, which suggests that the nominal expression is treated as one unit.

One subtype ((B) on the map above) shows flexibility of determining elements (such as demonstratives)[59] at the edges of the nominal expression, while other modifiers have a fixed position closer to the head. There are 17 languages showing this type of flexibility, illustrated for Worrorra in (4-20a), where the deictic element can either come at the left edge (4-20b) or the right edge (4-20c) of the nominal expression. The same applies to Umpila, as illustrated in in (4-11) above.

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[59] The possessive pronoun usually behaves in a similar way, but not always: there are a couple of languages in this category where the possessive pronoun has a fixed position, while the demonstrative and the personal pronoun have flexible positions at the edges. See more on determiner and alternative functions of determining elements in chapter 5.

(4-20) Worrorra (Clendon 2014: examples, 144, 428; own glossing for b)

      a. Template (E):

          dem / poss – N – A – dem / poss

      b. *inja*   *eeja*   *i=raarreya*

          3SG.M.DEF man   3SG.M=big

          'the big man'

      c. **kanbanerri birdeen-ya   aaya**   *rlerlewa ka-Ø=murrka-rla-eerri*

          crab   small-3SG.M   3SG.M.REF   crawl   3SG.M-3=go.to-PST-PROG

          'A little crab went crawling up to him.'

The other subtype ((C) on the map above) has flexibility of adjectives with reference to the head, while determining elements[60] have a fixed position at one of the edges. There are 8 languages that show this type of flexibility. An example is Mawng, where modifiers such as adjectives and quantifying nominals occur at either side of the head, while determiners (demonstrative and third person pronoun) have a fixed position at the left edge (Forrester 2015: 45), as shown in the template in (4-21a). The flexible position of the adjective is illustrated in (4-21b). Another example is Mayi, where demonstratives and other determining elements are fixed at the left edge, while qualifying nouns can occur at either side of the head noun (Breen 1981b: 63; see the template in (4-22a)), as illustrated in (4-22b-c).

(4-21) Mawng (Forrester 2015: 45, 46)

      a. Template (G):

          (art)^(DETERMINER) (art)^(DETERMINER) (art)^(MODIFIER) (art)^HEAD

          (art)^(MODIFIER)

      b. **Taka-pa**   **wurt wumawurr anyak**   *ang-ngurri–ngung*

          DEM:DIST.LL-EMPH tiny   creek   little.bit 3LL-flow-PST.CONT

          'The small creek was flowing.'

(4-22) Mayi (Breen 1981b: 63, 61; own glossing for b)

      a. Template (W):

          dem / pron / interr – num – N*

          with N*: N.qual - N.head or N.head - N.qual

---

[60] Again, the possessive pronoun usually behaves in the same way as demonstratives, but in some languages, it has a flexible position (like the adjective). See chapter 5 (section 3.5).

b. *waṭi   panʸa   tʸalu-ŋku*
    that   woman   small-ERG
    'that small woman'

c. *waṭi   miṭan yalmir   /kuŋkun-kali   ṉanti-ṉanti-ŋu*
    that   tall   man   spear-?   hold-hold-PRS
    'that tall man is holding a spear'

Taken together, this implies that there are 44 languages for which apparent flexibility actually supports NP constituency. The map shows that they are even more spread out across the continent than the previous category, and that it is hard to discern any clear areal or genetic patterns.

3.1.3. Flexibility

30 languages show flexibility that is less restricted or not restricted at all, which does not support an analysis in terms of NP constituency. There is, however, quite a bit of variation here, in that very few of these languages allow the full flexibility that is often posited in general statements about non-configurationality in Australian languages (see, for instance, the structures in (4-12) above for Warrongo). Most languages in this category show flexibility of more than one type of modifier, not necessarily of the edge-preserving kind (e.g. both adjectives and determining elements can occur on either side of the nominal head). Even here, there appear to be some restrictions, going from general tendencies to very strict rules for some of the modifiers. Some of these languages could perhaps even be re-categorised under the previous type, but we adopt the more cautious approach here and put a language in this category whenever in doubt. The types of restrictions on flexibility in this category are diverse, so rather than giving a list, we illustrate this with some examples from the sample, going from languages that are closest to the previous category to those that are furthest from it.

A first example is Bardi (Bowern 2012: 331-336). At first sight, word order is quite free: all types of modifiers (personal pronoun, demonstrative, adjective, nominal modifier, quantifier, possessive pronoun) can precede or follow the head, and elements preceding the head can come in almost any order (e.g. both dem-A-N and A-dem-N are possible). However, there are four important qualifications. First, when a modifier follows the nominal head, it has a non-restrictive or contrastive meaning (Bowern 2012: 335), which gives us a functional motivation for at least some of the

flexibility. Second, the possessive pronoun always occurs in the outer layer of the NP (Bowern 2012: 332-333), which delineates the boundaries of the NP. Third, the personal pronoun and the demonstrative do not co-occur, i.e. they seem to be in complementary distribution; the same goes for the demonstrative and the possessive pronoun (Bowern p.c.). And finally, there is a restriction on the number of modifiers in the NP (Bowern 2012: 329). These features even lead the author to questioning a 'flat structure' analysis for nominal expressions in Bardi (Bowern 2012: 329), although we still decided to put it in the 'flexible' category because it does not meet our own criteria for restricted flexibility.

A second example is Garrwa (Mushin 2012: 256-257, examples throughout grammar), where word order again seems to be quite free, with all types of modifiers preceding or following the head. However, in this language the demonstrative and the possessive pronoun clearly show a preference for the position preceding the head (Mushin 2012: 256-257). In addition, if a demonstrative and an adjective both occur on the left side of the head, the demonstrative occurs at the edge and the adjective closer to the head (Mushin 2012: examples throughout grammar). This shows again that flexibility is not absolute, but unlike with Bardi there is no indication to suggest that the restrictions in Garrwa provide any evidence for NP constituency.

A final example is Bilinarra (Meakins & Nordlinger 2014: 103-104). As can be seen in (4-23), the NE template is very general and allows for a high degree of flexibility. However, even in this case, there are certain restrictions, for instance, on the number of modifiers that can precede and follow the head, and the position of the demonstrative and the possessive pronoun, which tend to precede the head rather than follow it.

(4-23) Bilinarra (Meakins & Nordlinger 2014: 103-104)
  Template (G):
  (modifier) (modifier) head (modifier) (modifier)

The map above shows that flexible order is mainly found in the north of Australia, but there is no clear-cut correlation between flexible order and the non-Pama-Nyungan families, as many non-Pama-Nyungan languages belong to the other categories described above, while several Pama-Nyungan languages also belong to this category.

3.2.   Locus of case marking

This section discusses the locus of case marking in contiguous nominal expressions (see section 4 on discontinuous structures). As already mentioned, the basic options here are phrasal marking (case marked once in the NE), word marking (case marked for all elements in the NE) or no case marking at all (at least for core arguments). Languages in the last category sometimes do have some peripheral (e.g. local) case markers. Whenever this is the case, we mention whether they use phrasal or word marking in table 7, but we do not regard this as sufficient evidence to put them in, say, the 'phrasal marking' category on a par with languages that use phrasal marking throughout, for both core and peripheral case markers. An overview is given in the map below. Table 7 (to be found at the end of this chapter, p. 160) provides details and references for our analysis of each individual language.
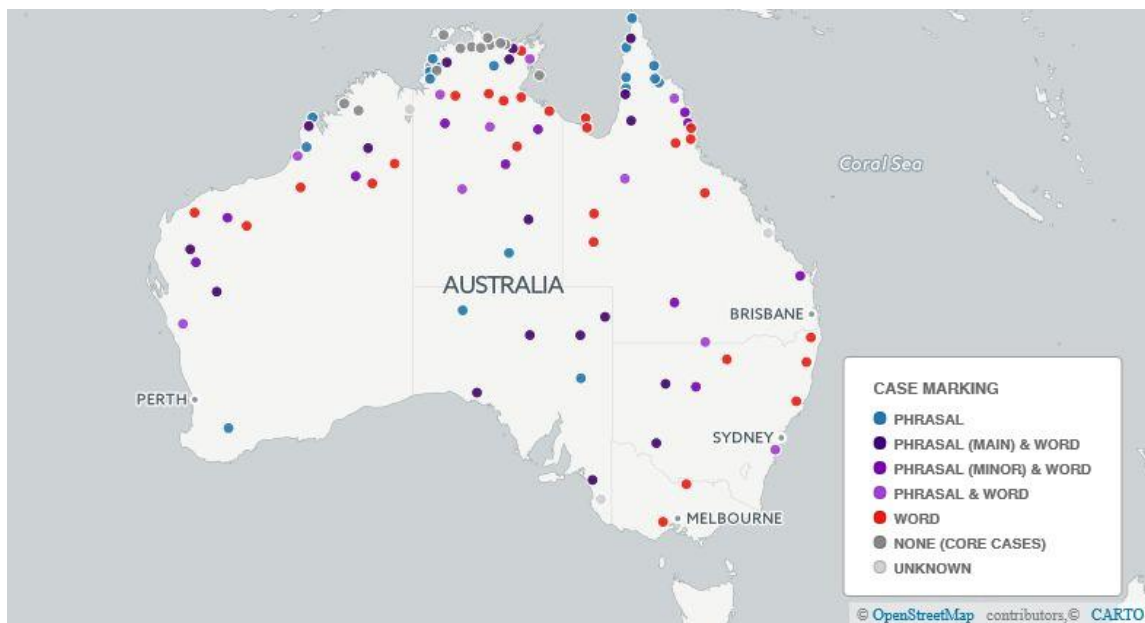
Map 9: Locus of case marking. For an online, dynamic version of this map, see: http://bit.ly/case-NP. For additional comments and references, see table 7.

In the sample, there are 57 languages for which phrasal marking is an option: 18 that have only phrasal marking, as illustrated for Yawuru in (4-24) below, and 39 that have a choice between phrasal marking and word marking, as illustrated for Wirangu in (4-25) below.

(4-24) Yawuru (Hosokawa 1991: 81)

     a. *manydya-yi   wamba*

        many-DAT   man

     b. **manydya-yi   wamba-yi*

        many-DAT   man-DAT

        'to/for many people'

(4-25) Wirangu (Hercus 1999: 48)

     a. ***garba   marnaardu-gu***   *wina-rn*

        house   big-ALL   go-PRS

     b. ***garba-gu   marnaardu-gu*** *wina-rn*

        house-ALL   big-ALL   go-PRS

        'We are going to the big house, the community hall.'

Phrasal case marking is at least one of the options in 57 languages or more than half of the sample, which is clear evidence for NP constituency. Of these 57 languages, 43 have case marked at the (left or right) edge,[61] marking one of the boundaries of the NP and thus providing additional evidence for constituency. For the other languages, which have only word marking or no marking at all, the location of case marking is a neutral feature with respect to constituency.

Within these results, it is remarkable that two thirds of the languages allow both phrasal marking and word marking for case. There is at least one language in the sample for which we have a detailed analysis of this alternation, viz. Gooniyandi. McGregor (1989) shows that phrasal marking is the default option in Gooniyandi, while word marking has a special functional motivation, viz. to give equal prominence to each constituent of the phrase (e.g. contrastive focus), usually in a phrase consisting of two elements. An example of word marking for contrastive focus can be found in (4-26).

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[61] Some of these languages show variation in the location of the case marker, either between the left and the right edge, or between one of the edges and another element (e.g. the head).

(4-26) Gooniyandi (McGregor 1989: 213)

thaaddi	*nganyi-ngga*	*gardlooni /*
mistakenly.believed	I-ERG	I:hit:him
ngooddoo-ngga	***yaanya-ngga***	*gardbini /*
that-ERG	other-ERG	he:hit:him

'It was mistakenly believed that I had hit him, but it was really that other person who hit him.'

Unfortunately, we have only limited information on this alternation for most other languages of the sample. There are some tendencies, however. For instance, the options do not seem to have an equal status in most languages: phrasal marking is the basic option in 18 languages, while 11 have word marking as the basic option (for the other 10 that have both options, it is unclear which is the basic one). The less frequent option usually seems to occur in specific environments. In Oykangand, for instance, case is normally marked on the right edge of the NE, as in (4-27a), but when the NE of a demonstrative and a noun, it can also be marked on the initial element or on both elements, as in (4-27b, c) (Hamilton 1996: 19-20). Another example is Duungidjawu, where case is marked on each element of the NE, as in (4-28a), except for the comitative, which only occurs at the right edge, as in (4-28b) (Kite & Wurm 2004: 37, examples).

(4-27) Oykangand (Hamilton 1996: 20; own glossing)

a. | *aber* | *unggul-gh* | *uw* |
|---|---|---|
| woman | DEM:DIST-PURP | give |

'Give it to that woman there.'

b. | *aber-agh* | *unggul* | *uw* |
|---|---|---|
| woman-PURP | DEM:DIST | give |

c. | *aber-agh* | *unggul-gh* | *uw* |
|---|---|---|
| woman-PURP | DEM:DIST-PURP | give |

(4-28) Duungidjawu (Kite & Wurm 2004: 34, 37)

a. | *guyur* | *ŋa-dju* | *binda-yi* | ***guyum-gu*** | ***yo:-rinj-gu*** | *meŋ* |
|---|---|---|---|---|---|
| food | 1SG-ERG | send-PST | camp-ALL | 3SG-GEN-ALL | today |

'I sent food to his camp today.'

b. *woŋan*   *man*   *bun-du*   *barandje-nge*   *guyum-u*
woman   DEM   knee-INS   stand-IPFV   camp-LOC

gandan   **ŋa-rinj-baŋu**
younger.sister   1SG-GEN-COM
'That woman is kneeling at the fire with my younger sister.'

The grammatical descriptions that give more detailed information on the function of the alternation tend to mention emphasis or contrast as a motivation for word marking in a language that normally marks case once per phrase (e.g. [Hercus 1994: 283] for possessive modifiers in Arabana/Wangkangurru; [Oates 1988: 68] for dative case markers in Muruwari; [Hercus 1999: 48] for Wirangu). An example is given for Diyari in (4-29) below. On the other hand, the use of phrasal marking in a language that normally marks case on each element is sometimes associated with casual speech (e.g. Patz 1991: 290 for Djabugay).

(4-29) Diyari (Austin 2011: 144, 97)

a. **kanku**   **kundrukundru-nthu-yali** *nganha*   *yakalka-yi*
boy   cough-PROP-ERG   1SG.ACC   ask-PRS
'The boy with a cough is asking me.'

b. **kinthala-li**   **nhungkarni-yali** *nganha*   *matha-rna*   *wara-yi*
dog-ERG   3SG.NF.DAT-ERG   1SG.ACC   bite-PTCP   AUX-PRS
'HIS DOG bit me'

3.3.   Diagnostic slots

At least 19 languages[62] in the sample have a diagnostic slot that can be used for testing NP constituency, in the form of a 2nd position auxiliary or 2nd position clitics that occur after the first constituent, as in Warlpiri (see example (4-8) above) and in Kuuk Thaayorre (4-30) (Gaby 2006: 216). Usually, the diagnostic elements are pronominal markers, but other types also occur, e.g. discourse clitics in Lardil (Klokeid 1976: 261), as illustrated in (4-31) below for the clitic *thada* 'meanwhile'. An overview can be found in table 8 (to be found at the end of this chapter, p. 168) and in the map below. The map shows that diagnostic slots occur in different families and areas across the

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[62] This number is slightly higher than the number mentioned in the published paper; Bunganditj, Kuuk Thaayorre, Wajarri, Wathawurrung and Yankunytjatjara have been added.

continent (e.g. Ngumpin-Yapa, Kartu, Western Desert, Garrwan, and some south-eastern languages).

(4-30) Kuuk Thaayorre (Gaby 2006: 551)

    pam   ***ith<u>=ul</u>***   *yarra*   *yan*   *patp-nhan=okun=ul*

    man(NOM) DEM:DIST=3SG(NOM) away go.NPST   camp-GO&:NPST=DUB=3SG(NOM)

    'maybe that chap will hive off and pitch camp'

(4-31) Lardil (Klokeid 1976: 261)

    yalange   ***wurtuu***   <u>*thada*</u>   *niya*   *waa*

    other.LOC   corner.LOC   meanwhile 3SG.NOM   go

    'Meanwhile, he went over to another corner.'
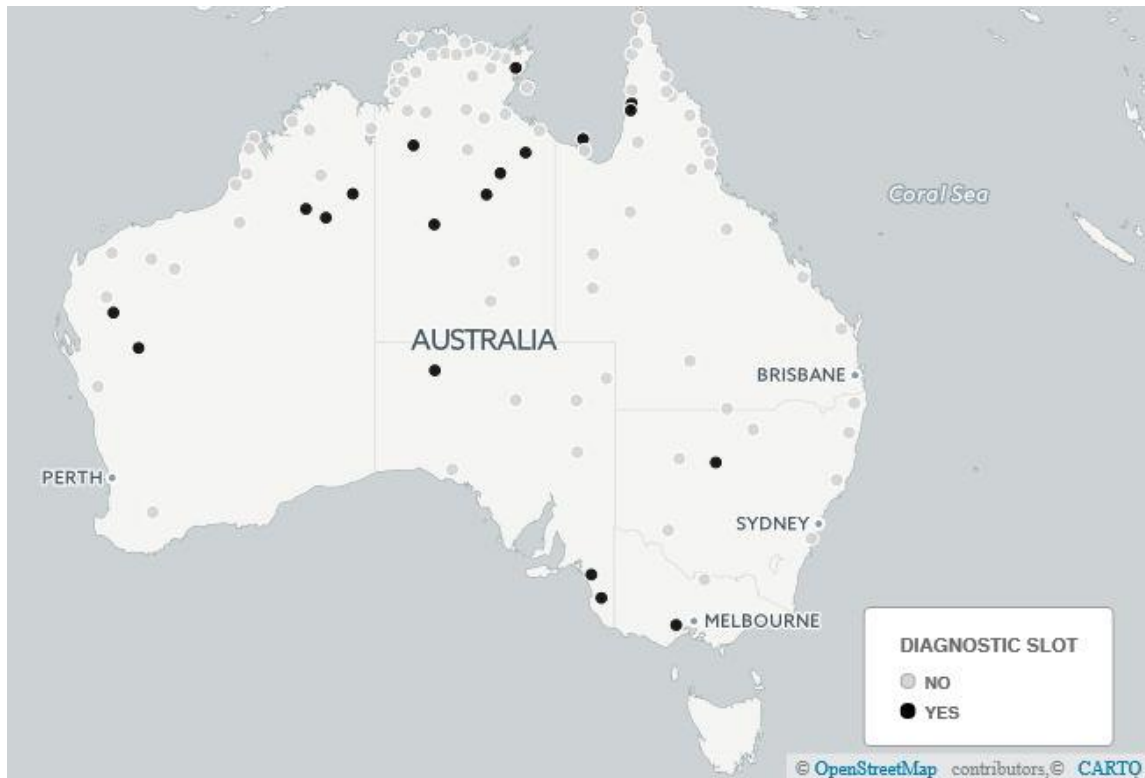
Map 10: Diagnostic slots. For an online, dynamic version of this map, see: http://bit.ly/diagnostic-slot. For additional information and references, see table 8.

There are three languages in this set, viz. Wangkajunga, Walmajarri and Wajarri, where the diagnostic element shows variation in position, either following the first constituent or the first word (see table 8 for more details).[63] Obviously, this implies

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[63] We have found no further claims to this effect in our sample, but there may be more languages in the sample that show this variation. There are some examples in Warlpiri (e.g. Swartz 1982: 98, 112),

that the criterion is somewhat weaker here than in the other languages, as it does not invariably identify the first constituent (see also fn. 54). In fact, although diagnostic slots are much discussed in the literature, they are also inherently one of the less powerful criteria for constituency in a language, as already mentioned, because they can really only tell us something about the constituency status of nominal expressions occurring in the slot. Even so, their presence in a language does show that construal as a constituent is at least available for nominal expressions in that language.

3.4.   Prosody

Prosodic information about nominal expressions is only available for 19 languages in the sample, and for most of these, it is quite limited. In the sample, we find three types of prosodic features indicative of NP constituency. The first one is the absence of pauses in the nominal expression (or conversely, the presence of a pause between nominals as a marker of appositional status), which is mentioned for 11 languages. For instance, in their analysis of Bilinarra, Meakins & Nordlinger (2014: 102-103) use the presence or absence of a pause between nominals as a defining criterion for constituency:

> "Coreferential nominals which are separated by a pause are not considered to belong to a single NP but are treated as nominals in apposition. (…) They do not occur in the same intonational phrase and are therefore considered separate NPs in apposition. If they were not separated by a pause (…) the nominals would be considered a single NP."

A second feature, mentioned for 11 languages, is that the nominal expression occurs under a single intonation contour. In Umpila/Kuuku Ya'u, for example, "the NP is typically produced under a single intonation contour" (Hill 2015), which is taken as criterion for the identification of NPs (Hill 2015). The third feature is that the nominal expression has a single stress peak, which is mentioned for one language, Kuuk Thaayorre, together with the two other features described above: "Prosodically, the noun phrase is characterized by: (a) a lack of planned pauses; (b) a single

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for instance, that could be taken to suggest variation between the first constituent and the first word, although without prosodic information it is difficult to decide. Incidentally, there is one other language in the sample – Lardil – that has two sets of clitics, one following the first constituent and another following the first word (Klokeid 1976: 261-262). Evidently we only focus on the first set here (see example (4-31)).

intonation contour; (c) a primary stress peak" (Gaby 2006: 278). An overview can be found in table 9 (to be found at the end of this chapter, p. 170).

3.5.   Conclusion

In themselves, the results discussed in the preceding sections are telling: internally, about two thirds of the languages show fixed or restricted flexible word order, and externally, more than half of the languages have at least an option for phrasal case marking. On top of this, several languages in the sample show prosodic evidence for NP constituency or allow the use of nominal expressions in diagnostic slots. These findings show quite clearly that it is not the case that Australian languages generally lack NP structures, and that there is some evidence for the availability of classic NP construal in a majority of languages in the sample.

What we have not yet examined, however, is how the different criteria interact on a language-by-language basis, and what this says about the precise role of NP construal in each language. Table 5 provides an overview of the four criteria discussed in the previous sections, organised mainly around word order and locus of case marking, with underlining for presence of diagnostic slots and italics for prosodic evidence. (Analyses in terms of functional classes are marked with * following the language name.)

What this table suggests is that we can distinguish roughly between three major types of languages in the sample (leaving aside the 'unknown' categories at the edges); see the map below for an overview. First off, there is a set of 16 languages (type A on the map) for which all internal and external evidence points to NP constituency in the classic sense: these are the languages that have fixed or restricted flexible word order, and only phrasal case marking. The map shows that these languages are mainly situated in Cape York, and only a few in central and north Australia. Secondly, there is a set of 48 languages (type B on the map) for which all internal evidence points to NP constituency, with fixed or restricted flexible word order, but externally there is a choice between word and phrase marking, or only word marking (or no marking at all). Given that there is internal evidence for NP constituency, these are languages for which word marking most likely cannot be analysed in terms of apposition, and may have a functional motivation if there is an alternation with phrase marking (see section 4.2 above). Finally, there is a set of 29 languages (type C on the map) with flexible word order, for which the internal structure does not point towards NP

constituency.[64] A majority of these is situated in one single zone in the north and north-west of Australia (see section 3.1.3 on the spread across language families). Not surprisingly, there are not many languages in this category which only have phrasal marking: the only two candidates actually have some indications of edge-preserving flexibility, though in a different way than the criteria we used in section 3.1.2.[65] The rest has only word marking, or an alternation between word and phrasal marking; moreover, this is also the category that has the most diagnostic slots in the sample. On the one hand, this suggests that for these languages, word marking could – at least in principle – be analysed as evidence for apposition, unlike the languages in the second category. On the other hand, the availability of phrasal marking and quite a few diagnostic slots also shows that constituency is not completely absent from these languages. Unlike in the first two categories, it is not the dominant way to organise nominal expressions, but NP construal is available at least as an option: through phrasal case marking, via construal in a diagnostic slot, or both.[66] In this sense, NP constituency is not an all-or-nothing phenomenon: some languages have it as the dominant way to organise the nominal domain, while others have it as an option available in a few circumstances. In the next section, we show that this is also a useful perspective to deal with discontinuity, which can also be analysed as a distinct construction type that is available in a range of options to organise nominal expressions.

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[64] The introduction to this chapter mentioned three languages which played a prominent role in the non-configurationality debate: Warlpiri, Nunggubuyu and Kalkatungu. Only Warlpiri is part of our sample, but readers may be interested to know that the other two languages would fit into this last group as well. Nunggubuyu and Kalkatungu both show flexible word order, but unlike Warlpiri, they have only word marking and no evidence from diagnostic slots (see Heath [1986: 377-381], and Blake [1979a: 108-109, examples; 1983: 144-145]).

[65] In Ngan'gityemerri/ Ngan'gikurunggurr, the head has a fixed initial position, while the modifiers seem to be flexible w.r.t. each other (Reid 1997: 267). In Bardi, the possessive pronoun always occurs at the outer edge of the nominal expression (Bowern 2012: 333). In addition, there are several other restrictions on word order flexibility in Bardi nominal expressions (see further in section 3.1.3 above).

[66] In fact, there are very few languages in the sample that do not have any options for NP construal, and could therefore be regarded as lacking NPs altogether. In the table, these would be the languages with flexible word order, and without phrasal marking, diagnostic slots or prosodic evidence (Gumbaynggir, Nyangumarta, Warrongo, Yuwaalaraay, Burarra, Bininj Gun-wok, Enindhilyakwa, Giimbiyu and Ungarinyin). Even here, however, it is not unlikely that there are other, perhaps more marginal, options for NP construal in the language. This is the case, for instance, in Bininj Gun-wok, where against the "anarchic background" (Evans 2003a: 244) of flexible word order, the indefinite marker stands out in that it has a fixed position at the start of the nominal expression (Evans 2003a: 244). See also chapter 5, section 4.

	phrasal marking	phrasal + word marking			word marking	no marking	unknown
		main phrasal	*minor phrasal*	*unclear*			
fixed word order	Anguthimri Arrernte *Dalabon* * <u>*Kuuk Thaayorre*</u> Marrithiyel Nyungar * Umbuygamu Umpithamu *	Alyawarra *Gooniyandi* * <u>Ngarrindjeri</u> Nyulnyul * Uradhi			Dyirbal Kayardild * <u>Lardil</u> *Martuthunira* * Panyjima *	*Gaagudju* * *Limilngan* * Tiwi *	
restricted flexible word order	*Atynyamathanha* Kala Lagaw Ya Kugu Nganhcara Malakmalak *Umpila/Kuuku Ya'u** Wadjiginy <u>Yankunytjatjara</u> Yawuru	Arabana/Wangkangurru Diyari Mathi-Mathi /Letyi-Letyi/ Wati-Wati Oykangand *Paakantyi* Tharrgari <u>*Wajarri*</u> *Warray* Yandruwandha <u>Yir Yoront</u>	Djabugay Duungidjawu Kuku Yalanji <u>Ngiyambaa</u> Yindjibarndi <u>Yingkarta</u> *	Guugu Yimidhirr Karajarri Mayi Nhanda	Alawa Biri Bundjalung *Dhuwal* Gathang Mangarrayi Pitta-Pitta Yalarnnga Yanyuwa Yidiny	Emmi Matngele Mawng * Ndjébbana Worrorra	Rimanggudinhma

flexible word order	Bardi Ngan'gityemerri/ Ngan'gikurunggurr	*Djinang/ Djinba* Rembarrnga Wirangu	<u>*Bilinarra*</u> <u>*Garrwa*</u> <u>Walmajarri</u> <u>Warumungu</u>	Dharrawal/ Dharumba/ Dhurga/ Djirringanj *Jaminjung* Jingulu Muruwari (equal) <u>Ritharngu</u> <u>Warlpiri</u>	Gumbaynggir <u>Jaru</u> *Marra* Nyangumarta <u>Wambaya</u> <u>*Wangkajunga*</u> *Wardaman* Warrongo Yuwaalaraay	Burarra Bininj Gun-wok Enindhilyakwa Giimbiyu Ungarinyin	Miriwung
word order unknown			Margany/ Gunya		<u>Wathawurrung</u> Yorta Yorta		<u>Bunganditj</u> Dharumbal

Table 5: Results for NP constituency
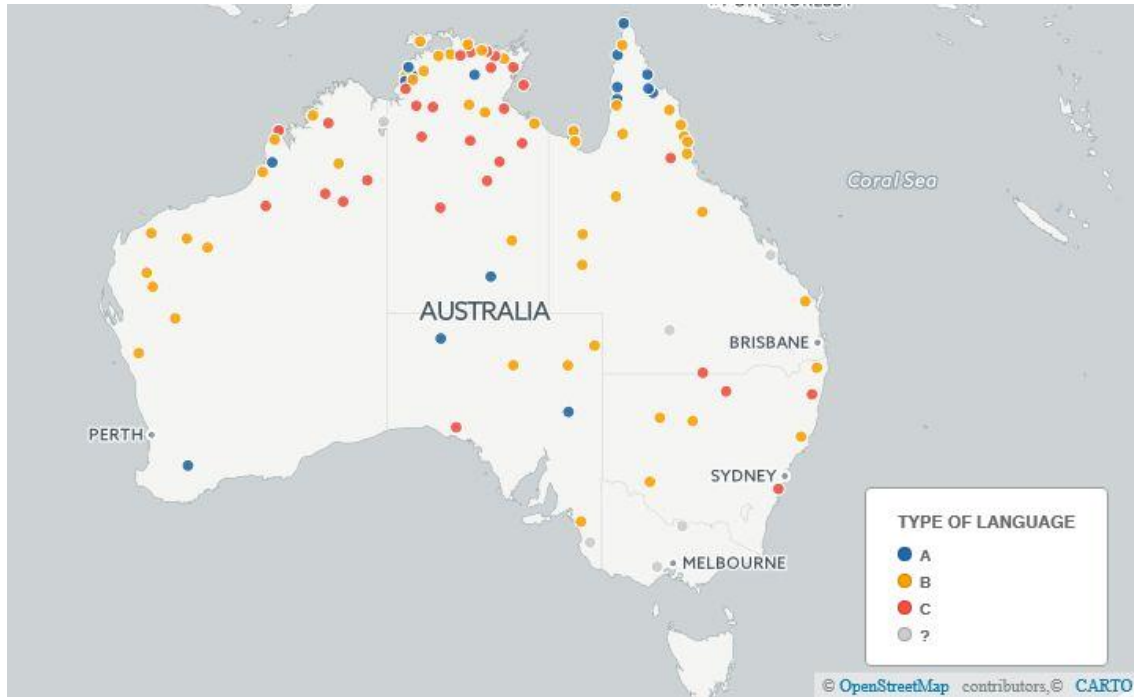
Map 11: NP construal: types of languages. For an online, dynamic version of this map, see: http://bit.ly/NPconstrual.

4. Discontinuous structures

In the previous section, we focused on contiguous constructions, and came to the conclusion that there is not much evidence to support the idea that Australian languages generally lack NP structures. We deliberately left out the issue of discontinuous structures, which are often regarded as a typical feature of the nominal domain in Australian languages, and a strong argument against NP constituency. We believe that discontinuous structures should be treated separately, for two reasons. One is theoretical: the existence of discontinuous structures in a particular language does not necessarily imply that contiguous constructions in the same language cannot be analysed as genuine NPs; at best, it shows that a language allows nominal expressions to be construed as NPs or not (see also Croft [2007: 27-30] for a similar argument). The second is empirical: where they are available, discontinuous structures are generally less frequent than contiguous structures, and they have specific functions, often in the domain of information structure, as shown convincingly in McGregor's (1997a) and Schultze-Berndt & Simard's (2012) detailed discourse-based studies of discontinuity in Gooniyandi and Jaminjung. This suggests that discontinuous structures are not simply variants of contiguous structures, but distinct

construction types, with a distinct form encoding a distinct meaning. From this perspective, it makes sense to discuss discontinuous structures in their own right, rather than as variants of the structures discussed in the previous section.

Before we move on to the analysis, a methodological note is in order about the identification of discontinuous constructions. As argued convincingly by Schultze-Berndt & Simard (2012), it is important to distinguish 'genuine' discontinuous structures from structures that are really two (or more) separate, though co-referential, NPs. Co-referential NPs can be used, for instance, in dislocation and afterthought constructions, as in the Bilinarra example in (4-32), where a co-referential NP is added after the clause to further clarify the referent, viz. whose house the speaker is talking about (Meakins & Nordlinger 2014: 352). Co-referential NPs can also be used to describe multiple characteristics of a referent, especially where there is a restriction on multiple qualifiers in one NP, as has been noted for a range of languages (e.g. Paakantyi [Hercus 1982: 99], Rembarrnga [McKay 1975: 70], Umpila/Kuuku Ya'u [Hill 2010: 9, p.c.] and Yuwaalaraay [Williams 1980: 96]; see also chapter 2, section 1.3). This is illustrated in the Umpila example in (4-33) (repeated from (2-24)), where it is difficult to have the two qualifiers 'old' and 'big' in the same NP (as in 4-33b), and they have to be split over two NPs, as in (4-33a). While such structures may look like discontinuous constructions at first sight, they fall outside the scope of our argument about constituency, since they can simply be analysed as consisting of more than one NP.

(4-32) Bilinarra (Meakins & Nordlinger 2014: 352)

    ngurra-nggurra**=rna=rla*   *ga-nggu,*   ***ngayiny-jirri,   *warrba=ma*

    house-ALL=1MIN.S=3OBL   take-POT   1MIN.DAT-ALL   clothes=TOP

    'I'm going to take them to the house, to my (house), the clothes I mean.'

(4-33) Umpila/Kuuku Ya'u (Hill 2010: 9; p.c.)

    a. *kampinu-lu*   *tha'i-na*   *pu'ala*   *yilamu*   */mukana*

        man-ERG   hit-NFUT   drum   old   big

        'the man hit the big old drum'

    b. ? *kampinu-lu*   *tha'i-na*   *pu'ala*   *yilamu*   *mukana*

        man-ERG   hit-NFUT   drum   old   big

        'the man hit the big old drum'

Leaving aside such structures, discontinuity is distributed as follows in our sample. It is mentioned and/or attested for 49 languages, while it is explicitly said to be

impossible for 19 languages. For the other 32 languages, no mention is made in the grammatical descriptions, nor have we found any unambiguous examples. Of course, these are only rough numbers, as much depends on the analytical choices of the fieldworkers, and the detail of the information that is available (for instance, some people analyse constructions as discontinuous even if they look very much like dislocation or afterthought constructions). Even so, the evidence suggests that about half of the languages in the sample allow some kind of discontinuity in the nominal domain, and the other half do not. While not all grammars provide detailed information, there are a number of generalisations we can make about the nature of discontinuity as found in the sample. As we will show, all of these suggest that discontinuous structures are separate construction types rather than variants of contiguous structures, which implies that they cannot be used as evidence against the constituency status of the latter.

A first generalisation is that discontinuous patterns are usually far less frequent than contiguous patterns in the languages where they occur. In Jaminjung, for example, discontinuous NPs are only approximately 1% of all NPs in discourse (Schultze-Berndt & Simard 2012: 1032), in Mawng they represent 1.41 % of all NPs (Forrester 2015: 58), in both Wardaman and Gooniyandi they make up 3% of all NPs, and 11% and 17% of multi-word NPs respectively (Croft 2007: 6; McGregor 1997a: 92). Other descriptions do not mention percentages, but often simply state that discontinuous structures are "much less common" than contiguous structures (Gaagudju; Harvey [2002: 316]), or that co-referential elements occur contiguously "[i]n perhaps the majority of the examples," though "they may occur separately" (Warrongo; Tsunoda [2011: 348]).

Secondly, discontinuity is not unconstrained, but appears to show some formal restrictions. For instance, McGregor (1997a) shows that discontinuity in Gooniyandi is generally restricted to one structure per clause, and that discontinuous structures rarely have more than two words. The sample can add some other types of restrictions. For one thing, discontinuity seems to be far more frequent for nominal expressions in core argument roles than for adjuncts, as stated explicitly for Dhuwal (Djambarrpuyngu) by Wilkinson (1991: 125): "Discontinuity is particularly a feature of nominal expressions coding core roles. Those coding peripheral roles have a greater tendency to be juxtaposed." In addition, discontinuity appears to be more typical for some word classes than for others. Thus, for instance, quantifiers, like numerals or elements meaning 'many' or 'some', appear to be particularly prone to

occur discontinuously (as observed by Bowern [2012: 336-338] for Bardi, Evans [2003a: 242] for Bininj Gun-wok, and Evans [1995: 250] for Kayardild). This seems to be the case especially in contexts where the number of the referent(s) is emphasised, as in the Wambaya example in (4-34). Other elements that are often split off in instances of discontinuity in the sample are different types of determining elements, e.g. demonstratives, as in (4-35), possessive pronouns, as in (4-36), and personal pronouns, as in (4-37).

(4-34) Wambaya (Nordlinger 1998: 133)

garngunya	*gin-aji*	*yabu*	***garirda-rdarra***	*garndawugini-ni*
many.II(ACC)	3SG.M.A-HAB.PST	have	wife.II-GROUP(ACC)	one.I-LOC

'One (man) used to have many wives.'

(4-35) Tharrgari (Klokeid 1969: 38)

yiṉa	*ṭaRi-da-nma*	*ŋadi*	***pawa,***	*makadbu*	*ŋadi*	*paja-lariŋu.*
that	cold-VBLZR-IMP	1DU	water	so	1DU	drink-INTENTV

'Cool this water, so we can have a drink.'

(4-36) Atynyamathanha (Schebeck 1974: 74, 109)

yata	*naku-ankat-aṭu*	***vanʸtʸuṛu***
ground	see-PST-1SG.A	his

'I have seen his ground'

(4-37) Yingkarta (Dench 1998: 52)

pinya-tha	*yanma-nu-nyi*	***muntungu***
3SG.NOM-DEF	go.IMMPST-AFF-*nyi*	European

'Them fellas have all gone.' ('That (group of) Europeans has gone.')

In combination with low frequency, the existence of formal restrictions on discontinuous structures suggests quite strongly that they also have a specific function. This is, in fact, what is shown in the two detailed discourse-based studies we have in the sample, viz. McGregor (1997a) on Gooniyandi and Schultze-Berndt & Simard (2012) on Jaminjung, both of which identify specific information-structural functions. For instance, Schultze-Berndt & Simard show convincingly that discontinuity is not semantically neutral, but serves to mark focus. This can be contrastive argument focus, as in (4-38) below, where the discontinuous element *gujugujugu* 'big' is highlighted in contrast with the much smaller size of the tents that were used earlier. Or it can mark sentence focus, which typically involves out-of-the-blue statements that "alert the hearer to the presence or appearance of an entity with

a particular property, or in a particular quantity" (Schultze-Berndt & Simard 2012: 1041), as in (4-39).

(4-38) Jaminjung (Schultze-Berndt & Simard 2012: 1038)

bulayi	*yirra-ma-na*	**^guju~gujugu**	*na* \
fly/tent	1PL.EXCL-have-IPFV	PL~big	now

'We had *big* tents then.'

(4-39) Jaminjung (Schultze-Berndt & Simard 2012: 1041)

jarndu	*ga-ram*	**luba**	*mangurn=mij!*
boat	3SG-come.PRS	big	white.person=COM

'There comes a big boat with white people!'

Obviously, we do not have such detailed analyses for many languages in the sample, but if authors mention anything about discontinuity, they often suggest information-structural functions. Thus, for instance, Evans (1995: 249-250) links the use of discontinuous structures for qualifiers in Kayardild to functions of contrastive focus and emphasis. Similarly, according to Merlan (1994: 242), discontinuity in Wardaman is associated with a focus-presupposition structure, the first element usually being presupposed and the last one as "more in-focus for one reason or another e.g., because it is contrastive, or otherwise the less presupposable element of the theme as a whole." Finally, Bowern (2012: 328-329) associates the use of discontinuous structures with focus in Bardi: in (4-40), for instance, the contiguous structure in (4-40b) is pragmatically neutral, while the discontinuous structures in (4-40a) and (4-40c) focus on 'two' and on 'fish', respectively.

(4-40) Bardi (Bowern 2012: 329)

a.
gooyarra	*i-na-m-boo-na*	*aarli*
two	3-TR-PST-spear-REMPST	fish

'He speared two fish.'

b.
gooyarra	*aarli*	*i-na-m-boo-na*
two	fish	3-TR-PST-spear-REMPST

c.
aarli	*i-na-m-boo-na*	*gooyarra*
fish	3-TR-PST-spear-REMPST	two

Additionally, examples from grammatical descriptions that do not discuss discontinuity in detail, often seem to fit the analyses of contrastive argument focus and of sentence focus made by Schultze-Berndt & Simard (2012) and McGregor

(1997a), though of course these intuitions would need to be confirmed by detailed discourse studies for individual languages.

Overall, therefore, whenever we have relevant information in our sample, it suggests that discontinuous structures are not simply formal variants of contiguous structures, but distinct constructions with a distinct meaning. They are typically formally constrained and less frequent, which reflects a specific discourse function. Their status as a separate construction type also suggests that they cannot be used as arguments against the constituency status of contiguous nominal expressions. Such an argument could only work if contiguous and discontinuous structures are genuinely free variants, with no formal constraints or meaning differences.[67]

5. Conclusion

To round off this chapter, we would like to highlight a few points. The main conclusion is, obviously, that the case for the absence of clear NP structures in Australian languages is over-stated, and probably results from over-generalisation based on a handful of languages. If we look at concrete criteria for NP constituency like word order, locus of case marking, diagnostic slots or prosody, in a broad sample of Australian languages, there is no strong evidence against NP constituency at all. As shown in the summary in section 3.5, about two thirds of the languages in our sample show good evidence for NP constituency. In this sense, theoretical or typological

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[67] There is only a small set of languages in the sample where we cannot detect any constraints on discontinuity. In such languages, nominal expressions may be 'split' into more than two parts, as in the Jaru structure in (ii), or there may be multiple discontinuous structures in a single clause, as in the Dyirbal example in (iii). Given the nature of the examples, one wonders in how far such structures are attested beyond elicitation.

(ii) Jaru (Tsunoda 1981: 94)

jalu-ŋgu	lani-i	*mawun-du*	ḍaḍi	*jambi-gu*
that-ERG	spear-PST	man-ERG	kangaroo	big-ERG

'That big man speared a kangaroo.'

(iii) Dyirbal (Dixon 1972: 107)

a.

bayi	*waŋal*	<u>baŋul</u>	<u>yaṟaŋu</u>	<u>bulganu</u>
there.NOM.I	boomerang.NOM	there.GEN.I	man.GEN	big.GEN.I

<u>baŋgun</u>	<u>ḍugumbiṟu</u>	buṟan
there.ERG.II	woman.ERG	see.PRS/PST

'woman saw big man's boomerang'

b.

bayi	<u>yaṟaŋu</u>	<u>ḍugumbiṟu</u>	buṟan	*waŋal*
there.NOM.I	man.GEN	woman.ERG	see.PRS/PST	boomerang.NOM

<u>baŋgun</u>	<u>baŋul</u>	<u>bulganu</u>
there.ERG.II	there.GEN.I	big.GEN.I

'woman saw big man's boomerang'

work (for instance on non-configurationality) cannot take simple generalisations about NP structure in Australian languages for granted.

Apart from this obvious conclusion, there are some other points that emerge from this study. Perhaps the most important one is that questions about the presence or absence of NP constituency are not really sensible questions to ask about a whole language system (see also Himmelmann 1997: 136). Even in those languages in the sample that seem to conform to received ideas about 'flexible' nominal expressions (about one third of the sample), NP constituency is not completely absent. As shown in section 3.5, most of these allow NP construal of nominal expressions in some form, either in diagnostic slots or with phrasal case marking. What this suggests is that it may be more interesting to typologise languages on the basis of where and how they allow NP construal. Almost all of the languages in the sample seem to allow NP construal in some form, but in some languages, it is the dominant way to deal with nominal expressions, while in others it may be more marginal, manifested in specific contexts. This conclusion is compatible with the one reached by Himmelmann (1997), who proposes to couch such differences in terms of differential grammaticalisation of syntactic structure.[68] The same argument can be made a fortiori for discontinuity, traditionally regarded as one of the strongest arguments against NP constituency. Again, the presence of discontinuity in a particular language cannot serve as evidence against constituency for the language as a whole. Since discontinuous structures are usually quite distinct formally and functionally, it makes more sense to regard them as a separate type of construal in the nominal domain, in addition to NP construal and other types of construals that may be available. In this sense, languages should really be typologised in terms of the range of nominal construals they have available, and the division of labour between them, rather than on the basis of a simple yes-or-no answer to the question of constituency or (dis)continuity. We believe this applies not just to languages for which NP constituency has been questioned, like Australian languages or some South American languages (Krasnoukhova 2012: 177-181; see chapter 3, section 2.1), but also to many languages for which NP constituency has been assumed as the default (compare, for instance, work on discontinuity in German, e.g. De Kuthy [2002]).

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[68] In other words, the more dominant NP construal is in a language, the more strongly we could regard its NE as grammaticised. In this perspective, NP constituency is a gradient concept. However, we do not think such gradient approaches capture all the relevant differences: we think it is just as useful to focus on where and when NP construal is allowed, as on how dominant it is in the overall language system.

In order to develop such a typology, however, our analysis has also shown quite clearly that we need much more careful discourse-based work on nominal expressions, in the line of studies like McGregor (1989, 1997a) or Schultze-Berndt & Simard (2012). It is only when one looks at what types of nominal construal there are, and what their functions are in discourse, that it becomes clear how they divide up the nominal domain, and where a particular language fits in the typology of nominal construal. This type of work is not only needed for Australian languages, of course, but also for better-described languages, where corpus-based work on narrative and interactional data could reveal more variation in nominal construal than has traditionally been assumed. This may also lead to a further re-assessment of where Australian languages stand in the typology of nominal construal, and if and how they are really different from other types of languages.

Appendix: Tables

As mentioned in the introduction to Part II, decisions about each individual language are brought together in tables (one for each parameter studied), with reference to the precise part of the sources on which the analysis is based. All of the tables are put together at the end of this chapter, so as not to interrupt the flow of the text too much.

<u>Table 6:</u> Word order in the NE. Languages analysed in terms of functional classes in the grammatical descriptions are marked with * after the language name.

Fixed order (21 languages)	
Alyawarra	(Yallop 1977: 116-117; no information about longer NEs)
	<u>note:</u> Reverse order of dem possible (Yallop 1977: 112), but no examples found in grammar
Anguthimri	(Crowley 1981: 162, 178; limited information about longer NEs)
	<u>note:</u> Reverse order of dem found in one example (ibid.: 177)
Arrernte	(Wilkins 1989: 102-103)
	<u>note:</u> Some modifiers "more fluid" w.r.t. each other, but no examples found in grammar
Dalabon *	(Cutfield 2011: 50-58, 90-96, 113, 122-123, examples)
Dyirbal	(Dixon 1972: 60-61)
Gaagudju *	(Harvey 2002: 315-320)
Gooniyandi *	(McGregor 1990: 253)
Kayardild *	(Evans 1995: 235; Round 2013: 133-135)
Kuuk Thaayorre	(Gaby 2006: 297-298)
Lardil	(Klokeid 1976: 11, (few) examples)
Limilngan *	(Harvey 2001: 112)
Marrithiyel	(Green 1989: 48; Green 1997: 246)
	<u>note:</u> Num and dem/pron flexible w.r.t. each other
Martuthunira *	(Dench 1994: 189-198)
Ngarrindjeri	(Yallop 1975: 28; Bannister 2004: 66; no information about longer NEs)
Nyulnyul *	(McGregor 2011: 400-405)

Nyungar *	(Douglas 1976: 44-45)
Panyjima *	(Dench 1991: 186)
Tiwi *	(Lee 1987: 221-230)
Umbuygamu	(Sommer 1998: 22, 28; Ogilvie 1994: 39; examples throughout both sources; no information about longer NEs or about the position of adnominal demonstratives)
Umpithamu *	(Verstraete 2010)
Uradhi	(Crowley 1983: 371)

Restricted flexibility (44 languages)

Limited in frequency (19 languages)

Atynyamathanha	(Schebeck 1974: 61, examples; no information about longer NEs or about the position of adnominal demonstratives)
Biri	(Terrill 1998: 29, 45-47; no information about longer NEs)
Bundjalung	(Sharpe 2005: 98, examples)
Dhuwal (at least Djapu)	(Morphy 1983: 83-87 for Djapu)
	note: Wilkinson (1991: 124) only mentions a "lack of strict ordering conventions" for Djambarrpuyngu and further refers to Morphy (1983).
Kala Lagaw Ya	(Ford & Ober 1987: 10; Ford & Ober 1991: 124-126, 130; Stirling 2008: 177; examples throughout all sources)
Karajarri	(Sands 1989: 65-66; no information about longer NEs or about the position of adnominal demonstratives)
Kugu Nganhcara	(Smith & Johnson 2000: 419-420)
Malakmalak	(Birk 1976: 146-148, Hoffmann p.c.; limited information about longer NEs)
Mathi-Mathi/ Letyi-Letyi/ Wati-Wati	(Blake et al. 2011: 79, examples; no information about longer NEs)
Ndjébbana	(McKay 2000: 293-294)
Ngiyambaa	(Donaldson 1980: examples)
Oykangand	(Hamilton 1996: 2, 6; Sommer 1970: examples)
Pitta-Pitta	(Blake 1979b: 214, p.c.; limited information about longer NEs and about the position of qualifying modifiers)
Rimanggudinhma	(Godman 1993: 78; no information about longer NEs)
Warray	(Harvey 1986: 59, 246)

Yanyuwa	(Kirton 1971: 10, examples; Kirton & Charlie 1996: examples)
Yawuru	(Hosokawa 1991: 80-81, 443, 472, 491, 740)
Yidiny	(Dixon 1977: 247-249)
Yingkarta *	(Dench 1998: 50-51)

Flexibility of determining elements at the edges (17 languages)

Alawa	(Sharpe 1972: 2, examples)
	note: Variable order, partly based on emphasis and length of nominal expression according to Sharpe (1972: 2), but clear tendencies from examples
Arabana / Wangkangurru	(Hercus 1994: 184, examples)
Diyari	(Austin 2011: 100, examples)
Djabugay	(Patz 1991: examples)
Duungidjawu	(Kite & Wurm 2004: 95-96, examples; limited information about longer NEs)
Emmi	(Ford 1998: 103, 138, 148, examples; no information about longer NEs)
Guugu Yimidhirr	(Haviland 1979: 104, examples)
Kuku Yalanji	(Patz 2002: 119-121, 202, examples)
Matngele	(Zandvoort 1999: (few) examples)
Paakantyi	(Hercus 1982: 98-101, examples)
Tharrgari	(Klokeid 1969: examples; no information about longer NEs or position of qualifying modifiers)
Umpila/Kuuku Ya'u *	(Hill 2015)
Worrorra	(Clendon 2000, 2014: examples)
Yalarnnga	(Breen & Blake 2007: 57-58, examples; no information about longer NEs and limited information about the position of adjectives)
Yandruwandha	(Breen 2004a: 47, examples)
Yankunytjatjara	(Goddard 1985: 47, 49, 55-56, 60)
	note: The demonstrative can also occur immediately following the generic noun, where it has a 'restrictive' sense (next to initial or final position, where it has a 'non-restrictive' sense)
Yir Yoront	(Alpher 1973: 281-289)

Flexibility of adjective-like modifiers; determining elements fixed at one edge (8 languages)	
Gathang	(Lissarrague 2010: 48, 103-104, examples; no information about longer NEs)
Mangarrayi	(Merlan 1989: 29, 51, examples; limited information about longer NEs)
Mawng *	(Forrester 2015: 45)
Mayi	(Breen 1981b: 63)
Nhanda	(Blevins 2001: examples; no information about longer NEs)
Wadjiginy	(Ford 1990: 88, examples; Tryon 1974: 209; no information about longer NEs)
	note: According to Tryon (1974: 208), adjectives have a fixed position, but we rely on the most recent source for our categorisation
Wajarri	(Douglas 1981: 240-244)
	note: Only the quantifying adjective is flexible, the rest of the modifiers has a fixed order. Also, younger speakers often switch to A-N order instead of the regular N-A.
Yindjibarndi	(Wordick 1982: 160, examples)
	note: Wordick (1982: 160) claims that the adnominal demonstrative is flexible but tends to come in initial position, but we have found only one example in final position

Flexibility (30 languages)	
Bardi	(Bowern 2012: 331-336, p.c.)
Bilinarra	(Meakins & Nordlinger 2014: 103-104)
Bininj Gun-wok	(Evans 2003a: 243-244, examples)
Burarra	(Green 1987: (few) examples; Carew p.c.)
Dharrawal/ Dharumba/ Dhurga/Djirringanj	(Besold 2012: 287-289; no information about longer NEs)
Djinang/ Djinba	(Waters 1989: 195-196)
Enindhilyakwa	(van Egmond 2012: 303)
Garrwa	(Mushin 2012: 103-104, 256-257, examples)

Giimbiyu	(Campbell 2006: (some) examples; no information about longer NEs)
Gumbaynggir	(Eades 1979: 313, examples)
Jaminjung	(Schultze-Berndt 2000: 44-45; Schultze-Berndt & Simard 2012: 7)
Jaru	(Tsunoda 1981: 95, p.c.)
Jingulu	(Pensalfini 2003: examples)
Marra	(Heath 1981: 64, 290)
Miriwung	(Kofod 1978: 52, examples)
Muruwari	(Oates 1988: 51, 55, 82, 87-88, examples; limited information on longer NEs)
Ngan'gityemerri/	(Reid 1997: 267)
Ngan'gikurunggurr	note: Fixed head first, which could also be seen as an edge-preserving type of flexibility
Nyangumarta	(Sharp 2004: 301-313)
Rembarrnga	(Saulwick 2003: 81; McKay 1975: 67-70)
Ritharngu	(Heath 1980: examples; no information about longer NEs or about the position of adjectives)
Ungarinyin	(Rumsey 1982: 58, 138; Spronck 2016: 37-38, 166, p.c.)
Walmajarri	(Richards 1979: 99, examples; Hudson 1978: examples; no information about longer NEs)
Wambaya	(Nordlinger 1998: 130-136)
Wangkajunga	(Jones 2011: 232, 235-240; no information about longer NEs)
Wardaman	(Merlan 1994: 228-235)
Warlpiri	(Hale et al. 1995: 1435)
Warrongo	(Tsunoda 2011: 347-352)
Warumungu	(Simpson 2002: 42, examples; no information about longer NEs)
Wirangu	(Hercus 1999: 81, examples; no information about longer NEs)
Yuwaalaraay	(Williams 1980: 96-97; Giacon 2014: 428-434)

Unknown (5 languages)	
Grammar does not allow us to make generalisations concerning word order	
Bunganditj	(Blake 2003: 52, examples)
Dharumbal	(Terrill 2002: 48, examples)
Margany/ Gunya	(Breen 1981a: 335, examples)
Wathawurrung	(Blake 1998 ed.: 84, examples)
Yorta Yorta	(Bowe & Morey 1999: 106, examples)

Table 7: Locus of case marking (in simple nominal expressions; core case markers)

Only phrasal case marking (18 languages)		
Anguthimri	(Crowley 1981: 178)	head (= left edge)
Arrernte	(Wilkins 1989: 102)	right edge
Atynyamathanha	(Schebeck 1974: examples)	right edge
Bardi	(Bowern 2012: 169-170)	left edge
Dalabon	(Cutfield 2011: 42, 84)	head
Kala Lagaw Ya	(Ford & Ober 1987: examples; Ford & Ober 1991: examples; Stirling 2008: examples)	right edge note: Unclear if word marking is also possible
Kugu Nganhcara	(Smith & Johnson 2000: 385)	right edge
Kuuk Thaayorre	(Gaby 2006: 277)	right edge
Malakmalak	(Birk 1976: 147-148)	right edge
Marrithiyel	(Green 1989: 2, 48)	right edge
Ngan'gityemerri/ Ngan'gikurunggurr	(Reid 1990: 326, examples)	right edge note: Unclear if word marking is also possible
Nyungar	(Douglas 1976: 44)	right edge
Umbuygamu	(Ogilvie :1994 63; Sommer 1998: 22)	right edge; sometimes head (initial)
Umpila / Kuuku Ya'u	(Hill 2015)	right edge
Umpithamu	(Verstraete 2010)	right edge
Wadjiginy	(Ford 1990: 90, 91)	right edge
Yankunytjatjara	(Goddard 1985: 47)	right edge
Yawuru	(Hosokawa 1991: 81)	left edge

Phrasal and word marking (39 languages)		
Phrasal marking as main option (18 languages)		
Alyawarra	(Yallop 1977: 116-118)	(i) right edge ("normally") (ii) each element ("not ungrammatical")
Arabana / Wangkangurru	(Hercus 1994: 114, 282-284)	(i) right edge (ii) last two or all elements (emphatic)
Diyari	(Austin 2011: 97-99)	(i) right edge (ii) each element ("special emphasis or contrast")
Djinang / Djinba	(Waters 1989: 196)	(i) one element (unclear which one) (ii) each element (most frequently when two elements; likelihood depending on case marker: PERL, ALL, ABL, LOC > ERG, INSTR, GEN > DAT, OR > ACC)
Gooniyandi	(McGregor 1990: 173-174, 276-284; McGregor 1989)	(i) one element (ii) each element (avoiding ambiguity, emphasis, contrast; usually two-word NPs, clause-initial or clause-final, once per clause)
Mathi-Mathi / Letyi-Letyi/ Wati-Wati	(Blake et al. 2011: 112)	(i) right edge (ii) each element (Dem-N)
Ngarrindjeri	(Yallop 1975: 29)	(i) only on modifier (dropped from head N) ("frequently") (ii) each element
Nyulnyul	(McGregor 2011: 398, 419)	(i) left edge (ii) each element (prominence to each element)

Oykangand	(Hamilton 1996: 19-20; Sommer 1970: 17)	(i) right edge (ii) also left edge or each element (Dem)
Paakantyi	(Hercus 1982: 100)	(i) right edge (ii) each element (when Dem/Interr-N)
Rembarrnga	(McKay 1975: 71)	(i) prefixes left edge, suffixes right edge ("normally") (ii) any or all elements <u>note:</u> Author only tested this for N+A sequences
Tharrgari	(Klokeid 1969: 13)	(i) only one noun ("generally"; unclear which one) (ii) each element (examples)
Uradhi	(Crowley 1983: 334, 371-372)	(i) head (ii) each element (but A "rarely" take case)
Wajarri	(Douglas 1981: 241; Marmion 1996: 33)	(i) right edge ("very common") (ii) each element
Warray	(Harvey 1986: 252-253)	(i) right edge (ii) also each element or left edge (for LOC and GEN)
Wirangu	(Hercus 1999: 48)	(i) right edge (ii) each element ("emphatic or stilted")
Yandruwandha	(Breen 2004a: 101)	(i) right edge (ii) one element other than right edge or each element ("much less commonly")
Yir Yoront	(Alpher 1973: 291-292; Alpher 1991: 67-69)	(i) right edge (case postpositions only option; suffixes main option) (ii) each element (suffixes minor option)

Phrasal marking as minor option (11 languages)		
Bilinarra	(Meakins & Nordlinger 2014: 106)	(i) each element (ii) head (rare, analysed as language shift phenomenon)
Djabugay	(Patz 1991: 290)	(i) each element (ii) right edge (casual speech)
Duungidjawu	(Kite & Wurm 2004: 27-28, 37, 96, examples)	(i) each element (ii) right edge (COM) note: According to Kite & Wurm (2004: 96), case is marked "only to head of NP or optionally to other elements"; analysis above based on examples
Garrwa	(Mushin 2012: 55)	(i) each element ("greatly prefer[red]") (ii) one element (unclear which one)
Kuku Yalanji	(Patz 2002: 119)	(i) each element (ii) right edge ("occasionally" but corrected by speakers when editing their own narratives)
Margany/ Gunya	(Breen 1981a: 337)	(i) each element: "usual practice" (ii) but "not obligatory" note: Unclear which element is marked when there is phrasal marking
Ngiyambaa	(Donaldson 1980: 232)	(i) each element (ii) one element (two-word nominal expressions; "WHICH one seems to be a matter of taste." (Donaldson 1980: 232))

Walmajarri	(Hudson 1978: 17; Richards 1979: 95)	(i) each element
		(ii) one element (fast or conversational speech; unclear which one)
Warumungu	(Simpson 2002: 87-88; Simpson & Heath ms: §4.3)	(i) each element
		(ii) right edge ("occasionally")
Yindjibarndi	(Wordick 1982: 142)	(i) each element
		(ii) one element (unclear which one)
Yingkarta	(Dench 1998: 52)	(i) each element
		(ii) right edge (rare, two-word NEs)

Phrasal marking as one of the options (unclear or strictly depending on word class) (10 languages)

Dharrawal/ Dharumba/ Dhurga/ Djirringanj	(Besold 2012: 157)	(i) first or last element
		(ii) each element
		note: Unclear what main option is
Guugu Yimidhirr	(Haviland 1979: 102-104)	(i) right edge ("often")
		(ii) each element
Jaminjung	(Schultze-Berndt 2000: 43)	(i) any one element
		(ii) more than one element
		note: Probably conditioned by differences in information structure
Jingulu	(Pensalfini 2003: 176)	(i) right edge
		(ii) left edge (dem attracts case marking)
		(iii) each element
Karajarri	(Sands 1989: 69)	(i) left edge
		(ii) each element
		note: Unclear what main option is
Mayi	(Breen 1981b: 63-64)	(i) any one element
		(ii) more elements
		note: Personal pronouns and numerals unmarked in two-word nominal expressions

Muruwari	(Oates 1988: 7, 55, 62, 67, 68, 82)	(i) right edge (N-A; dem-N (ERG); A-N (ERG); LOC, ALL/DAT)
		(ii) left edge (LOC, ALL/DAT)
		(iii) each element (Num+N (ERG); N+N (ERG); dem-N(ERG) minor; A-N(ERG) minor; LOC, ALL/DAT (emphasis))
		note: Depends on kind of modifier and case marker
		note: Unclear for longer NEs
Nhanda	(Blevins 2001: 129)	(i) one element (usually but not always right edge)
		(ii) each element
Ritharngu	(Heath 1980: examples)	(i) right edge
		(ii) each element
Warlpiri	(Hale et al. 1995: 1434; Nash 1980: 159-160)	(i) right edge
		(ii) each element

Only word marking (26 languages)

Alawa	(Sharpe 1972: 70)	
Biri	(Terrill 1998: 14)	note: Adjective remains unmarked
Bundjalung	(Sharpe 2005: examples)	
Dhuwal	(Morphy 1983: 47, 85-86; Wilkinson 1991: 124)	note: Optional marking of quantifying nominals (often unmarked), hypothetical and indefinite determiners (usually marked), dual and plural pronoun number markers
Dyirbal	(Dixon 1972: 106, examples)	
Gathang	(Lissarrague 2010: 102)	
Gumbaynggir	(Eades 1979: examples)	
Jaru	(Tsunoda 1981: 94-95, p.c.)	note: Ergative marking on demonstratives *yala/yalu* and *murla/murlu* can be left out.

Kayardild	(Evans 1995: 233)	
Lardil	(Klokeid 1976: 11)	
Mangarrayi	(Merlan 1989: 51)	
Marra	(Heath 1981: 64)	
Martuthunira	(Dench 1994: 60, 189)	<u>note</u>: Complementizing case shows head marking
Nyangumarta	(Sharp 2004: 302-303)	
Panyjima	(Dench 1991: 125)	
Pitta-Pitta	(Blake 1979b: examples, p.c.)	
Wambaya	(Nordlinger 1998: 131-132)	<u>note</u>: Possessive phrase unmarked
Wangkajunga	(Jones 2011: 10)	
Wardaman	(Merlan 1994: 105)	
Warrongo	(Tsunoda 2011: 342, 361)	<u>note</u>: Possessive pronoun unmarked
Wathawurrung	(Blake 1998 ed.: 84)	
Yalarnnga	(Breen & Blake 2007: examples)	
Yanyuwa	(Kirton & Charlie 1996: 10; Kirton 1971: 10)	
Yidiny	(Dixon 1977: 247)	
Yorta Yorta	(Bowe & Morey 1999: 82)	
Yuwaalaraay	(Giacon 2014: 429, p.c.)	

No case marking for core cases (phrasal or word for other cases; options discussed in third column) (13 languages)

Bininj Gun-wok	(Evans 2003a: 230)	optionally on any one element for "non-core cases" <u>note</u>: Some dialects use ABL or INS as an optional ergative marker.
Burarra	(Green 1987: 16-18, examples)	LOC/INS prefix (Green 1987: 17-18), marked on all elements of the NE
Emmi	(Ford 1998: 103)	right edge for INS, DAT/ALL, ABL/CAUS, COM, LOC

Enindhilyakwa	(van Egmond 2012: 1, 302-304)	for LOC, ABL, ALL, INS: - modifier, or if no modifiers on head - all elements (no further comment)
Gaagudju	(Harvey 2002: 263)	unknown for DAT/LOC clitics
Giimbiyu	(Campbell 2006: 36, 58)	right edge for LOC and INS
Limilngan	(Harvey 2001: 71, 113)	optionally on right edge for OBL, LOC, SOURCE, COM and PRIV note: Unclear if word marking is also possible; based on very limited data (Harvey 2001: 113)
Matngele	(Zandvoort 1999: 42)	unknown note: INS is (rarely) used as an agentive marker
Mawng	(Singer 2006: ch. 4, 83)	left edge for LOC (preposition)
Ndjébbana	(McKay 2000: 155)	unknown for ABL, PURP, object of hunt
Tiwi	(Lee 1987: 100, 235-236)	left edge for LOC (preposition)
Ungarinyin	(Rumsey 1982: 58, 61; Spronck 40, p.c.)	right edge for "non-grammatical cases"; sometimes other element or each element
Worrorra	(Clendon 2014: 18, 256-272, examples)	unknown for LOC
Unknown / other (4 languages)		
Bunganditj		
Dharumbal		note: Only one example of multi-word nominal expression; it shows right edge marking
Miriwung		
Rimanggudinhma		

Table 8: Diagnostic slots

Diagnostic slots		
Bilinarra	(Meakins & Nordlinger 2014: 102)	bound pronouns following the first constituent
		note: Bound pronouns can also have other positions, but only in marked cases (Meakins & Nordlinger 2014: 4)
Bunganditj	(Blake 2003: 38)	subject pronominal clitic following initial interrogative (or verb)
		note: Unclear if these pronouns also follow NEs apart from interrogatives
Garrwa	(Mushin 2012: 6-7, 36-37; Simpson & Mushin 2008; Mushin p.c.)	pronominal cluster in 2nd position, but usually verb-initial basic word order
Jaru	(Tsunoda 1981: 107)	catalyst *nga-* plus enclitic pronouns in 2nd position
Kuuk Thaayorre	(Gaby 2006: 216, examples)	pronominal clitics following the first constituent (or the verb/auxiliary) (emergent)
Lardil	(Klokeid 1976: 261)	clitics following the first constituent, e.g. *thada* 'meanwhile', *tha* 'now, then, after that'
Ngarrindjeri	(Bannister 2004: 64)	reduced pronominals attached to first element of clause
		note: No examples following a multiple-word NE
Ngiyambaa	(Donaldson 1980: 130, 236, 237)	pronominal or particle enclitics attached to topic of sentence, which is always at the left of the clause
Ritharngu	(Heath 1980: 43, 90)	pronominal enclitics, attached to first constituent of clause

Wajarri	(Marmion 1996: 66)	pronominal clitics following first word or constituent
		note: No examples following a multiple-word NE
Walmajarri	(Hudson 1978: 18)	verbal auxiliary "as second word"; both examples where it follows the first word of a multiple-word NE (e.g. Hudson 1978: 89, sentence 44) and where it follows the whole multiple-word NE (e.g. Richards 1979: 97, example 4)
Wambaya	(Nordlinger 1998: 131)	auxiliary following first constituent
Wangkajunga	(Jones 2011: 9, 233-235, 245-246)	pronominal clitics following first word or first constituent
Warlpiri	(Hale et al. 1995: 1431)	auxiliary following first constituent
		note: If the initial element of the auxiliary complex is a complementiser, the auxiliary can appear either in first or in second position (Hale et al. 1995: 1431).
Warumungu	(Simpson 1998: 725; Simpson 2002: 80)	pronominal cluster following first constituent
Wathawurrung	(Blake 1998 ed.: 77, 82)	subject pronominal clitic following first element, but usually verb-initial word order
		note: Unclear if first word or first constituent
Yankunytjatjara	(Goddard 1985: 61)	optional pronominal clitics following first constituent
Yingkarta	(Dench 1998: 5)	optional bound pronouns following the first constituent
Yir Yoront	(Alpher 1991: 38)	pronouns enclitic to first constituent of clause
		note: No examples following a multiple-word NE

Table 9: Prosody

Prosody		
Atynyamathanha	(Schebeck 1974: 61)	intonation distinguishes between one or more NPs (no further comment)
Bilinarra	(Meakins & Nordlinger 2014: 102-103)	- absence of pause - same intonational phrase
Dalabon	(Cutfield 2011: 56, 133)	pause for apposition
Dhuwal (only Djapu)	(Morphy 1983: 140)	pause for apposition
Djinang/Djinba	(Waters 1989: 196)	pause for apposition
Gaagudju	(Harvey 2002: 316, 319)	same intonation phrase
Garrwa	(Mushin 2012: 255)	prosodic unithood note: Members of a nominal group may also occur across intonation boundaries
Gooniyandi	(McGregor 1990: 284)	same intonation or tone unit
Jaminjung	(Schultze-Berndt & Simard 2012: 1021-1025)	NP coincides with prosodic phrase
Kuuk Thaayorre	(Gaby 2006: 278)	- absence of pause - single intonation contour - primary stress peak
Limilngan	(Harvey 2001: 112)	single intonation unit
Marra	(Heath 1981: 64)	pause for apposition
Martuthunira	(Dench 1994: 189)	single intonation contour
Paakantyi	(Hercus 1982: 99)	pause for apposition
Umpila/ Kuuku Ya'u	(Hill 2015)	- single intonation contour - absence of pause
Wajarri	(Douglas 1981: 243)	apposition: "after a non-final intonational juncture (rising pitch)"
Wangkajunga	(Jones 2011: 233)	- absence of pause - single intonation pattern
Wardaman	(Merlan 1994: 225-226)	single tone unit
Warray	(Harvey 1986: 252)	same intonation unit

Chapter 5: The status of determining elements

1. Introduction[69]

As pointed out in chapter 3, Australian languages generally lack many of the features that define a prototypical determiner system, like specialised word classes or obligatoriness of use. This chapter investigates whether Australian languages can be said to have any kind of determiner system, and if so, what it looks like in structural terms.

Unlike prototypical determiner languages, Australian languages do not usually have word classes that are specialised in determiner functions (see also e.g. Lyons 1999: 49; Dixon 2002: 66-67; Stirling & Baker 2007; Baker 2008). Some elements, like demonstratives, do typically have determining functions (e.g. they can specify identifiability based on distance relations or anaphoricity), but they can also have other functions, typically in other positions. This is illustrated in (5-1) from Gaagudju, where demonstratives can be used both as determiners, in initial position (5-1b), and with other modifying functions, following the head noun (5-1c) (see the general NP template in (5-1a)).[70]

(5-1) Gaagudju (Harvey 2002: 316-317)
   a. Template (G):
       (Deictic(s)) Entity (Qualifier)
   b. ***magaadja   njinggooduwa*** *Ø-iinj-ma   Ø-baalgi   njoogi*
       that:II   woman   3I<3F-got I-lots   white.ochre
       'That woman got lots of white ochre (too).'
   c. *gooyu*   ***djaarli naarri*** *biirda   ibárdbi   i-rree-nj-dja*
       mother   meat   I:here   tough   NEG   3I<1-FUT-eat
       'Mother, this meat here is tough. I cannot eat it.'

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[70] Just as a reminder, this chapter again uses the term 'noun phrase' or NP in a general sense, and not in a strictly syntactic sense (unlike in the previous chapter).

Furthermore, modifiers with a determining function are rarely obligatory in Australian languages (see, for instance, Stirling & Baker [2007]), and they tend to co-occur rather than compete. A frequent combination, for example, is that of an adnominal demonstrative and a personal pronoun (cf. also Blake 2001: 424; Stirling & Baker 2007; Stirling 2008 for examples), as illustrated in the Kala Lagaw Ya structure in (5-2) below. In the same language, there is no element that is obligatory to distinguish definite from indefinite NPs: a bare noun can be interpreted as either (Stirling & Baker 2007: 2-3).

(5-2) Kala Lagaw Ya (Stirling & Baker 2007: 3)

Thana	*sethabi*	*moegithap*	*uruy-n*	*poyzen*	*mabayg-aw*
3PL.NOM	3PL.DEM:REM	tiny	creature-ERG	poison	person-GEN

kulka-nu	*wan-an.*
blood-LOC	put-NFUT

'These tiny creatures put poison into a person's blood.'

In this chapter, I investigate whether Australian languages can be said to have determiner systems at all, and if so, what these look like in structural terms. I show that a determiner slot can be identified in half of the sample, which can be filled by a range of different elements. On the other hand, there is also a group of 25 languages which show evidence against the presence of a determiner slot. In practical terms, I first compare the position of what are cross-linguistically prototypical determiners (like demonstratives or personal pronouns) and what are cross-linguistically prototypical modifiers (like adjectives). If a clear pattern emerges, with different positions for the two categories, there is structural evidence for a determiner slot. For the languages in which such a slot can be distinguished, I then look at what types of elements can occur in this slot, regardless of their cross-linguistic prototypicality as determiners. Obviously, this procedure is somewhat circular, but this is inevitable for languages without specialised determiners. Moreover, it also has an advantage in that it casts a wide net, and brings to the surface many instances of atypical determiners from various word classes. As I will show in section 3, this offers an interesting window into the semantics of determination, as it allows us to contrast determiner uses with non-determiner ones, and tease out features that are crucial in either use.

The rest of this chapter is structured as follows. In section 2, I look at evidence for identifying determiner slots in the languages of the sample, and I investigate two notable features found in the sample, viz. optionality and co-occurrence of

determiners. Section 3 investigates which elements can occur in determiner slots, showing that most of them are not specialised in this slot but can also be used in non-determiner positions. I focus on the semantics of these elements, investigating what makes them eligible for use as a determiner, or alternatively, as a non-determining modifier. In section 4, I look in some more detail at the languages for which I was not able to identify a determiner slot.

2. Structural determiner slots in the sample

In this section, I investigate the presence of a structural slot for determiners in the languages of the sample. There are 14 languages in the sample for which the grammatical description has already identified a determiner slot; these are marked with a * following the language name in the corresponding tables (see section 3.1 in chapter 4 for more information on analyses in terms of functional classes). In Gooniyandi, for instance, McGregor (1990) identifies a fixed NP template in terms of functions (shown in (5-3a), repeated from (4-14)). Each functional slot can be filled with elements from different word classes, and one word class can occur in several slots. For example, the number word *yoowarni* 'one' can occur in the Deictic slot[71] (5-3b), functioning as an indefinite determiner (McGregor 1990: 258), or in the Quantifier slot (5-3c), indicating a specific quantity (McGregor 1990: 259-260, 270-271).

(5-3)   Gooniyandi (McGregor 1990: 253, 374, 260)

    a.   Template (G):
       (Deictic)^(Quantifier)^(Classifier)^Entity^(Qualifier)

    b.   *yoowarni-ngga* /   **yoowarni-ngga gardiya** /   *cherrabun bore* /
       one-ERG   one-ERG   white.person   [place name]
       warangji / *gamba*/   *bambimnga-widdangi*   *boorloomani -yoo* /
       he:sat   water   he:pumped:it-for:them   bullocks-DAT
       'There was a white man at Cherrabun Bore pumping water for the cattle.'

---

[71] Some analyses use the term Deictic, which seems to be equivalent to what I call determiner. For instance, the Deictic slot in Gooniyandi serves to "contextualise the phrase, relating it to the linguistic or extralinguistic context, thus facilitating the identification of its referent" (McGregor 1990: 257), or similarly in Gaagudju to "contextualis[e] the noun phrase" (Harvey 2002: 317).

    c. *yoowarni   gamba*
       one   water
       'one (glass of) water'

For the other languages in the sample, I identify a structural slot by both syntagmatic and paradigmatic means. A syntagmatic perspective focuses on the position of elements in the NP as evidence for the presence of a structural slot. I distinguish two syntagmatic criteria, one relative and one absolute. The first criterion looks at whether the elements under scrutiny are in a position that is clearly delimited from the nominal head and other modifiers, which would suggest a separate slot in the NP. In Dyirbal (Dixon 1972: 60-61, examples), for instance, the nominal head of the NP divides the 'demonstrative noun marker'[72] on its left side from the adjective(s) on its right side, as shown in the NP template in (5-4a) and the example in (5-4b). However, the demonstrative noun marker is not the only element that can occur to the left of the head: possessive pronouns can occur in the same position, as shown in (5-4c). What the elements on the left side of the head have in common is that they encode the identifiability status of the referent, i.e. they both have a determining function, and occur in the same position. This suggests the presence of a determiner slot at the left edge.

(5-4)   Dyirbal (Dixon 1972: 60, 61, 105; own glossing)
    a. Template (W):
       demonstrative noun marker – noun – adjective(s)
    b. **bayi**   **yaṛa**   **bulgan**   *baniɲu*
       there.NOM.I man.NOM   big.NOM   is.coming
       'big man is coming'
    c. *ŋinda*   **ŋaygu**   **bayi**   **galbin**   *balgan*
       2SG.A   1SG.GEN there.NOM.I child   hit.PRS/PST
       'you hit my son'

The second syntagmatic criterion looks at whether (potential) determiners occur at the edge of the NP, as would be expected according to Rijkhoff's (2002: 313) Principle of Scope (see chapter 3, section 1.1). This can be illustrated with Panyjima

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[72] This name suggests that they are mainly markers of noun class membership, but they also indicate deictic contrast (although the distal form is also used "when no specification of visibility/ proximity is intended" [Dixon 1972: 46]). They also seem to have a link with personal pronouns, and are called "pseudo-pronouns" by Dixon at one point (1972: 244).

(Dench 1991: 186), where the demonstrative occurs at the left edge, and the adjective may precede or follow the head, as in the template in (5-5a). When these two modifiers both occur on the left side of the head, the demonstrative occurs furthest from the head, as in (5-5b). This is indicative of a determiner slot (although edge position in itself is insufficient and needs to be combined with evidence from other criteria).

(5-5)   Panyjima (Dench 1991: 186, 219)

a.   Template (W):

dem – quant/log – adj/poss – N – adj/poss

b.   *mirlima-larta kangkuru-ku   miyinma-larta nhupalu*

spear-FUT   kangaroo-ACC   provide-FUT   2DU

nyiya-jirri-ku   kamungu-ku   juju-ngarli-ku

this-PL-ACC   hungry-ACC   old.man-PL-ACC

panti-jangu   nhangu-yu   pili-ngka-ku.

sit-REL   here-ACC   cave-LOC-ACC

'You two spear kangaroos to provide for these hungry old people here in the cave.'

If both these syntagmatic criteria are met, we can identify a structural determiner slot. By contrast, if neither of them is met, there is no determiner slot. This is the case, for instance, in Jaminjung (Schultze-Berndt 2000: 44-45; Schultze-Berndt & Simard 2012: 7), where the co-occurrence of a demonstrative and adjective on the same side of the head can involve either order of modifiers (5a-b).[73]

(5-6)   Jaminjung (Schultze-Berndt 2000: 45)

a.   A: ***thanthu**=gun   **mangurrb-bari**   **wirib**,*

DEM=CONTR   black-QUAL   dog

B: *ngayin   burrb   gani-bida...*

meat/animal finish   3SG>3SG-FUT:eat

'A: that black dog – B: -it will eat up the meat'

---

[73] Note that Jaminjung in this case still follows Greenberg's universal 20 (1966: 87; see also Dryer's discussion on this universal [2007b: 111-113]). This universal states that when a demonstrative and an adjective both precede the head, the demonstrative always comes first; when they both follow the nominal head, the demonstrative usually comes last, but it can also come between the head and the adjective. In other words, the word order N-dem-A is not unexpected cross-linguistically.

b. *ngayin=gun*   *thanthu burrb*   *gani-bida*   *ngarrgina*
    meat=CONTR   DEM   finish   3SG>3SG-FUT:eat   1SG.POSS

    ... wirib   *thanthu mangurrb-bari*
       dog   DEM   black-QUAL

    'it will eat up that meat of mine ... that black dog'

A paradigmatic criterion for slots is whether the elements compete for the same position or co-occur in it. As discussed in chapter 3, section 1, complementary distribution is often seen as the only scenario that provides evidence for a determiner slot, and co-occurrence as evidence for different slots. However, I believe that co-occurrence does not necessarily provide evidence against a determiner slot: some languages in my sample have determiner 'zones', where 'determiner complexes' form functional units and as a whole say something about the identifiability status of the referent (see also chapter 3, section 1). Co-occurrence of determiners is a common feature of many languages in the sample, which will be discussed briefly in section 2.5.1.

The rest of this section looks at what evidence there is for a structural determiner slot in the languages of my sample. There are 29 languages in the sample that show convincing evidence for a determiner slot, and an additional 21 languages with some evidence for a determiner slot, which is either more limited or slightly different from that of the 'prototypical' case. There are four ways in which the determiner slot is attested in these 50 languages, which I now discuss in turn. An overview can be found in table 10, and in map 12 in section 2.5.

type	generalised template	number of languages
1	**determiner(s)** – HEAD – modifier(s)	5 (+2)
2	**determiner(s)** – modifier(s) – HEAD – modifier(s)	7 (+8)
3	**determiner(s)** – HEAD – modifier(s) – **determiner(s)**	11 (+7)
4	**determiner(s)** … modifier(s) – HEAD (or HEAD – modifier(s) … **determiner(s)**)	6 (+4)

Table 10: Determiner slots

2.1.   Type 1: determiner(s) – HEAD – modifier(s)

The first type of language has a determiner slot on the left side of the head and other modifiers on the right side of the head. The determiner slot occurs at the edge, is clearly delineated from other modifiers, and can involve competition or co-occurrence. There are five languages that are definitely of this type, and two that are most likely of this type, but with slightly weaker evidence. An overview can be found in table 12 (to be found at the end of the chapter, p. 214), where the second column shows the elements that can occur in the determiner slot or zone, also indicating patterns of competition or co-occurrence (see also section 2.5 and section 3).

A clear example of this type is Uradhi, for which the author proposes an NP template as in (5-7a) below. The template is defined in terms of word classes, but I argue that all the modifiers found on the left side of the head form a determiner zone, in which the demonstrative and 3ʳᵈ person pronoun are in competition for the initial slot, followed by a genitive NP or a possessive pronoun (Crowley 1983: 371, 377, examples).[74] This analysis is supported by (i) left edge position, (ii) clear delimitation from other modifiers with the head as barrier,[75] and (iii) the common feature of 'identifiability' in demonstratives, personal pronouns and possessives (see further in section 3). Additionally, the grammar also has an example with *uɲa* 'other' in this position (see (5-7b)), which implies that this element can also be used as determiner.

(5-7)   Uradhi (Crowley 1983: 371, 377, 393)

    a. Template (G+W):

        ⎡ dem   (gen NP) (N) (Adj)
        ⎣ 3pron

        (N) (gen NP)

    b. *uɲa-ŋku*   *mata-ŋku*

        other-INS hand-INS

        '[He used] the other hand.' (after having burnt his one hand)

---

[74] This analysis is slightly different from Crowley's (1983: 371), who characterises only the initial slot (filled by a demonstrative or personal pronoun) as a determiner slot, presumably because the possessive is not in complementary distribution with either of these. This is at least what the description and template suggest (Crowley 1983: 371), but unfortunately there are no examples of either a demonstrative or a personal pronoun co-occurring with a possessive in the grammar.

[75] Note that the possessive can sometimes follow the head noun (Crowley 1983: 377). A logical explanation would be that in this position it does not have a determiner function (see section 3.4).

Another good example of this type of language is Gaagudju, for which the author also identifies a determiner slot in the grammar (Harvey 2002: 316-320) (see the template in (5-8a)). Elements which can occur in this slot are the demonstrative, the pronoun (as in (5-8b)), the numeral 'one' (meaning 'a certain (amount)/same' in this slot), interrogative-indefinites and the element *noondji* 'other'. It is possible to have more than one determiner at the same time. More specifically, the combination of a 'definite Deictic' followed by an 'indefinite Deictic' is allowed, most commonly 'that other', as in (5-8c) (Harvey 2002: 318). Most, if not all, of these elements can also occur outside this slot, i.e. following the head noun, but then they have a Qualifier function, as described in more detail in Harvey (2002: 317-320). The relationship between parts of speech and functional slots is further explored in section 3.

(5-8)   Gaagudju (Harvey 2002: 316, 317, 318)

    a.   Template (G):

       (Deictic(s)) Entity (Qualifier)

    b.   ***ngaayi***   ***aardi***   *m-balbarraaga*

       1MIN   clothes   IV-torn

       'My clothes are torn.'

    c.   *njinggooduwa=ngaayu*   *Ø-an-galeemarr-wa=nu*   ***magaarra***

       woman=3FDAT   IV-3M-jealous-AUX:PST.PFV=3MIO   that:I

       ngoondji   ***djirriingi***

       other   man

       'He is jealous of that other man over the woman.'

In addition to the clear cases, there are two further languages that look like the others in this category, but with limited (frequency-related) flexibility. In Djapu, for instance, the elements occurring on the left side of the head (see the NP template in (5-9a)) all mark the identifiability status of the referent in some way (see also section 3),[76] which, in combination with their edge position, argues for a determiner zone. In this zone, the personal pronoun can co-occur with a demonstrative, in this order

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[76] One possible exception is the noun marked with a proprietive suffix, as shown in (iv), which may be a compound-like or classifying construction.

    (iv)   Djapu (Morphy 1983: 85)

       nhä-ma   *ŋali*   *[gu**n**dirr-mirr*   *wäŋa]*OBJ

       see-UNM   1DU.INCL.NOM   antbed-PROP.ABS   place.ABS

       'We saw a place with a lot of antbed'

(Morphy 1983: 84), as in (5-9b). This structure is very similar to what we have seen before, with one difference: unlike in Uradhi, the NP template in Djapu is only "usually" adhered to, with only the personal pronoun and the dual/plural marker having a fixed position, and quantifiers, numerals and locational modifiers being entirely "free" (Morphy 1983: 82-87, examples).

(5-9)   Djapu (Morphy 1983: 82-87, examples, 84)
    a.   Template (W+E):
       3pron – dem, indef/hypothetical det, N-PROP, genitive/inalienable PR – N(s)
       - du/pl modifier – modifying nominal
    b.   *bala*   *[ŋayi*   *ŋunhi-ny-dhi*   *yolŋu-ny]s*   *marrtji*
       then   3SG.NOM   that.ABS-PRO-ANAPH   person.ABS-PRO come.UNM
       'Then that person comes along'

2.2.   Type 2: determiner(s) – modifier(s) – HEAD – modifier(s)

In a second group of languages, determiners are found on the left side of the head, and other modifiers can occur on either side of the head. When both categories co-occur, determiners are furthest from the head. In other words, there is a determiner slot (or zone) at the left edge, which is delineated from other modifiers (in that it has a fixed position w.r.t. the head whereas other modifiers are flexible), and which allows competition or co-occurrence. Seven languages are definitely of this type, while an additional eight show some evidence, which is either more limited or mixed. An overview can be found in table 13 (to be found at the end of this chapter, p. 215).

A language which clearly belongs to this type is Mayi (5-10a). The grammar suggests (Breen 1981b: 63, examples) that the demonstrative, personal pronoun and interrogative compete for the initial slot, as for instance in (5-10b-c). As these elements also share a feature of identifiability, this can be analysed as a determiner slot. It is unclear whether the numeral on the left side of the head could be part of a larger determiner zone (i.e. having a kind of determining function), or whether it has a purely quantifying function. (It should be noted that the position of the numeral is "not definitely established" [Breen 1981b: 63].) One reason why I have chosen not to include numerals as determiners in this case is that for the purposes of this study I do not want to go beyond anything I can infer from the grammar.

(5-10) Mayi (Breen 1981b: 63, 66, 55)

    a. Template (W):

        dem/pron/interr – num – N.qual – N.head – N.qual

    b. ***kula***   ***kaṯi***   *wamuranʸ-pir*

        this   meat   crow-ALL

        'This meat is for the crows.'

    c. ***pala***   ***yampi***   *paṯa-mp-iŋu*

        3DU   dog   bite-RECP-PRS

        'The dogs bit [sic] one another.'

Another example of this type is Martuthunira (5-11), which has also been analysed as such in Dench (1994: 189-198), with a left-edge determiner slot, and several other pre- and post-head modifiers. Elements which can function as determiner in Martuthunira are demonstratives, possessive pronouns, *yarta* 'other one' and *yartapalyu* 'others, other group' (Dench 1994: 190). It is unclear whether these elements are in competition or can co-occur in this slot.

(5-11) Martuthunira (Dench 1994: 189, 190)

    a. Template (G):

        (Determiner)^(Quantifier)^(Classifier)^Entity^(Qualifier(s))

    b. ***Nganaju*** ***yaan***   *yungku-lha murla-a*   ***yartapalyu-u kanyara-ngara-a.***

        1SG.GEN   wife   give-PST   meat-ACC   others-ACC   man-PL-ACC

        'My wife gave meat to the other men.'

There are two further sets of languages which may belong to this type, but less clearly so. First, there is a set of three languages with mixed evidence, in that they seem to mainly follow the type as described above, but with some exceptions. For instance, the template of the Bundjalung NP is described by Sharpe (2005: 98) as in (5-12a). This is very similar to the template of Mayi as in (5-10a) above, with probably at least the demonstrative and the possessive pronoun in a determiner zone at the left edge, as in (5-12b). However, a few examples with N-dem or N-poss order have been found in the grammar, as in (5-12c). It is unclear whether this implies that there is a second determiner slot following the head noun (as in type 3, section 2.3) or whether the demonstrative could have a qualifying function in this position (as is the case in Martuthunira). See also fn. 97 on this analytical issue.

(5-12) Bundjalung (Sharpe 2005: 98, 99, 37)

    a. Template (W):

       dem – poss – num – A – N –A

    b. *munah-mba*   *ngañah*   *bulahbu*   *bargan*

       those.NVIS-LOC   1SG.POSS   two   boomerang

       'those two boomerangs (that I had)'

    c. *Mahñ*   *dabahy* *yung-ba-le-hla*   **gibam-bu**   **mali-yu.**

       those   dog   bark-say-ANTIP-PROG   moon-INS   that-INS

       'The dogs are barking because of the moon.'

Second, there is also a set of five languages for which we only have information on NPs of two elements, and not on relative order in the case of multiple modifiers, which implies there is no evidence concerning possible edge position. However, the information we do have points to a distinction between determiners and other modifiers, in that the former have a fixed position w.r.t. the head and the latter a flexible position. An example is Gathang (see the template in (5-13a)), where the demonstrative, possessive pronoun and personal pronoun (all typical encoders of identifiability, see section 3) seem to have a fixed initial position (as in (5-13b)), while the adjective is flexible (as shown in (5-13c-d)).

(5-13) Gathang (Lissarrague 2010: 39, 103-105, examples, 160, 165, 166)

    a. Template (W+E):

       dem – N;[77] poss pron/NP – N; pron – N;

       A – N or N – A

    b. **Nyuwa**   **guyiwi**   *mawung*   *mara-la.*

       he   shark   fast   went-PST

       'He, the shark goes (or: went) fast.'

    c. *Mawung* *mara-la* *nyuwa,* *nyaanyi-la* **yuyn.gu** **djukal.**

       quick   go-PST   he   see-PST   mountain big

       'Quick, he went, he saw (i.e. reached) the big mountain.'

    d. **Djukal**   **guba** *nyaa-ga* *girr gil gil gil.*

       big   arm   see-IMP gil gil gil gil

       'He has a big arm, see, sound of footsteps.'

---

[77] In the grammar, I found one counter-example with N-dem order; see discussion above and fn. 97.

2.3.   Type 3: determiner(s) – HEAD – modifier(s) – determiner(s)

The third type of language is almost a mirror image of the previous type, viz. determiners are flexible w.r.t. the head and other modifiers have a fixed position (for most languages this is on the right side of the head). When co-occurring, determiners are further from the head than other modifiers. In other words, these languages have two determiner slots, at the edges of the NP and clearly delineated from other modifiers in that they are the only modifiers to occur in pre-head position. Again, both competition and co-occurrence are possible. There are 11 languages that are clearly of this type and another seven that are likely candidates, though with somewhat weaker evidence. An overview can be found in table 14 (to be found at the end of this chapter, p. 217).

A good example of this type is Guugu Yimidhirr (the NP template can be found in (5-14a)). Haviland (1979: 104) describes the NP as having a 'core' consisting of one or more of the following elements: generic, specific, inalienable part and adjective (incl. numeral), in this order. At either side of this 'core' are the possessive pronoun, demonstrative, or logical or quantifying nominal (i.e. elements such as *wulbu* 'all' or *yindu* 'a different one'), as in (5-14b-e). These elements appear to have a common function of identifiability (see also section 3), and they have a similar distribution at the edges of the NP, which seems to be good evidence for identifying two determiner slots. In addition, a personal pronoun can occur at the left edge,[78] as in (5-14d), which is also a determining element in terms of its function (see section 3.3).

(5-14) Guugu Yimidhirr (Haviland 1979: 104, examples, 102, 122, 157, 116)

a. Template (W+E):

pron - poss/dem/log/quant - [gen - spec - inal.part - adj/num] - poss/dem/log/quant

N - pron

b. **Nhanu-umu-n   gudaa-ngun   warrga-al** *nganhi*   *dyinda-y.*

2SG.GEN-*mu*-ERG   dog-ERG   big-ERG   1SG.ACC   bite-PST

'Your big dog bit me.'

c. *Wanhdhu* **gudaa   nhanu**   *gunda-y?*

who.ERG   dog.ABS   2SG.GEN.ABS   hit-PST

'Who hit your dog?'

---

[78] The personal pronoun seems to have a less flexible position than the other determiners and mainly occurs in initial position, but some examples of a noun-pronoun sequence have been found as well.

    d. ***Nyulu***   ***nhayun***   ***waarigan***   *gada-y*   *waarnggu=wunaarna-y*
         3SG.NOM   that.ABS   moon.ABS   come-PST   sleep=lie.RDP-PST

         '[Then] the Moon came and lay down to sleep.'

    e. ***Gamba-gamba***   ***nhayun***   *yinil*   *dyaarba-angu.*
         old.woman.ABS   that.ABS   afraid.ABS   snake-PURP

         'That old lady is afraid of snakes.'

Another language of this type is Umpila/Kuuku Ya'u, which is also analysed as such by Hill (2015). The template can be found in (5-15a) (repeated from (4-11)), showing that determiners can occur at either edge; these determiner slots are mutually exclusive (see also fn. 97 for more discussion). These slots can be filled by one of two sets of elements which are in competition: the first includes personal pronouns, demonstratives and quantifiers, as illustrated in (5-15b), and the second consists of possessive pronouns, as illustrated in (5-15c-d).

(5-15)   Umpila/Kuuku Ya'u (Hill 2015)

    a.   Template (G):

        (Det) (Entity) (Mod) (Det)

        with Det: ⌈[(Pron) (Dem) (Quant)] or

                 ⌊[Poss.Pron]

    b. ***ngulu***   ***nga'al***   ***pulthunu***   ***mukan***   *nhiina-na*
         3SG.NOM   DEM:DIST1-DM   boy   big   sit-NFUT

         'That big boy sat.'

    c. *Rattler*   ***ngathangku***   ***kul'a***   *paalnta-nya*
         Rattler   1SG.GEN   money/stone   steal-NFUT

         "rattler stole my money"

    d. *nga'a-lu*   ***ngaachi***   ***pulangku***   *kalma-na*   *chinchanaku*
         DEM:DIST1-DM   place   3PL.GEN   come-NFUT   night.island

         'that one came from their country, Night Island'

There are seven other languages that seem to fit in this category, but with mixed and/or limited evidence. Evidence is mixed when not all potential determiners have the same distribution. Only some of them may be flexible at the edges, while others are fixed at one edge, as in Duungidjawu (5-16). Alternatively, none of the elements may be flexible at the edges, but they are fixed at one edge each, as in Nyungar (5-17). In other words, unlike in the other languages of this type, not all determiners can

occur in each of the two slots, which provides somewhat weaker evidence for these slots.

(5-16) Duungidjawu (Kite & Wurm 2004: 96, examples, 95, 96, 50)

      a. Template (W + E): N – A - degree modifier

                                   pron – N

                                   interr – N

                                   dem – N or N – dem

                                   poss – N or N – poss

      b. *djaŋar [mowanin wunba]*

         limb   [big   very]

         'very big limb'

      c. *goro:man mana*

         kangaroo DEM

         'that/the kangaroo'

      d. *gari-ŋi*   *ŋa:m ŋin-du*   *badji-Ø*   ***mana guyur***

         DEM-LOC   1DU 2SG-ERG   find-GENRL   DEM   thing

         'We (incl.) found that thing there.'

(5-17) Nyungar (Douglas 1976: 44-45)

      Template (G+W):

      poss – N(s) – [A – intensifier] – dem

Evidence is limited when we only have information about two-word NPs, as can be seen for Duungidjawu (5-16) above. Even though edge position is uncertain, determiners are clearly delimited from other modifiers (i.e. adjectives), in that they can all occur at least before the head, while modifiers cannot.

2.4. Type 4: determiner(s) … modifier(s) – HEAD (or reverse)

Finally, there is a group of languages that have fixed word order in the NP with the head at one edge, and the other modifiers going from the adjective closest to the head to the demonstrative or personal pronoun at the other edge. For these languages, the exact delimitation of a possible determiner slot is more difficult than for the languages described above, as it is unclear where the 'cut-off' point is in the string of modifiers. Still, there is usually some other evidence to argue for a determiner slot. There are six languages that definitely belong to this type, and four languages that probably do,

though with less certain evidence. An overview can be found in table 15 (to be found at the end of this chapter, p. 219).

A good example is Marrithiyel (5-18). As Green (1997: 246) puts it: "NP modifiers fall into two broad groups. The first consists of (general) adjectives and quantifiers. The second consists of demonstrative adjectives, numerals and possessive adjectives. Members of the first group tend to occur immediately following the NP head, while members of the second cluster in NP-final position." In addition, the numeral has an interchangeable position with the demonstrative and the possessive pronoun, and the demonstrative and possessive pronoun never co-occur (Green 1989: 48). Taken together, these properties show that there is a final determiner slot with at least the demonstrative or possessive pronoun as fillers, and possibly also the numeral.[79]

(5-18) Marrithiyel (Green 1997: 246)

Template (W): generic - specific - A/quant -$\left[\begin{array}{l} \text{num - dem/poss.pron} \\ \text{dem/poss.pron - num} \end{array}\right.$

Another language of this type is Umpithamu (Verstraete 2010), where the final position in the NP is analysed as a slot for "identification". Personal and possessive pronouns are in competition for this slot, as shown in the NP template in (5-19a) and in the examples in (5-19b-c). This slot falls outside the case marking of the NP.

(5-19) Umpithamu (Verstraete 2010: 11, 4, 10)

a. Template (G+W):

[N   N   A   Num]-case   Pron(personal or possessive)
(classification) X   modification number   identification

b. *Yintyingka   aakurru   athuna,   **omoro-mun**   **athuna***
    Yintyingka   home   1SG.GEN   father-ABL   1SG.NOM

    angkutha-mun   athuna
    father's.father-ABL   1SG.GEN

    'Port Stewart is my home, from my father and my father's father.'

c. **minya**   **ina**   *iya-n=ina*
    game.animal 3PL.NOM   go-PST=3PL.NOM
    'All the animals left.'

---

[79] When the numeral is the final element, the case marker moves to the penultimate element instead of the final one, indicating that perhaps the numeral is not part of the NP in this case.

There are four languages that show mixed evidence for this type. Two of these, Kugu Nganhcara and Oykangand, have a fixed template, with the exception of the personal pronoun, which can occur at either side of the head (the position w.r.t. other modifiers is unknown). One possibility is that the personal pronoun is actually not part of the NP, but co-referential to it.[80] If this is the case, the NP has a fixed template with the head at one edge, which makes these languages clear members of this type.

The other two languages, Yingkarta and Kala Lagaw Ya, have an NP template that is very similar to the ones described above, but which allows for limited flexibility of the modifiers w.r.t. the head. In Yingkarta, for instance, 90% of the NPs follows the template as described in (5-20) (repeated from (4-18)), and there are indications that the opposite pattern has a more marked interpretation (Dench 1998: 51).

(5-20) Yingkarta (Dench 1998: 50-51, examples)

    Template (G+E):   (Determiner) (Modifier) Head

                   with Determiner: dem, poss, pron

2.5.   Discussion

Overall, there is structural evidence for the presence of a determiner slot for half of the languages in the sample (i.e. 50 languages, 29 of which show clear evidence and 21 weaker evidence). I distinguished four ways in which the determiner slot is manifested. An overview can be found in table 10 above and the map below. The map also shows the languages that have no determiner slot, the languages which show mixed evidence, and the languages for which there is not enough information to decide either way (see section 4 for more on these languages).

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[80] This is how Gaby (2006: 87, 291) analyses the personal pronoun in Kuuk Thaayorre: it is co-referential to the NP and not an adnominal modifier, because it has its own case marking, it has a flexible position and is not necessarily adjacent to the NP. The NP itself is clearly defined, having a fixed word order (Gaby 2006: 297-298), which makes Kuuk Thaayorre a clear member of the category described here (see table 15). The syntactic status of the personal pronoun in Kugu Nganhcara and Oykangand is unknown.
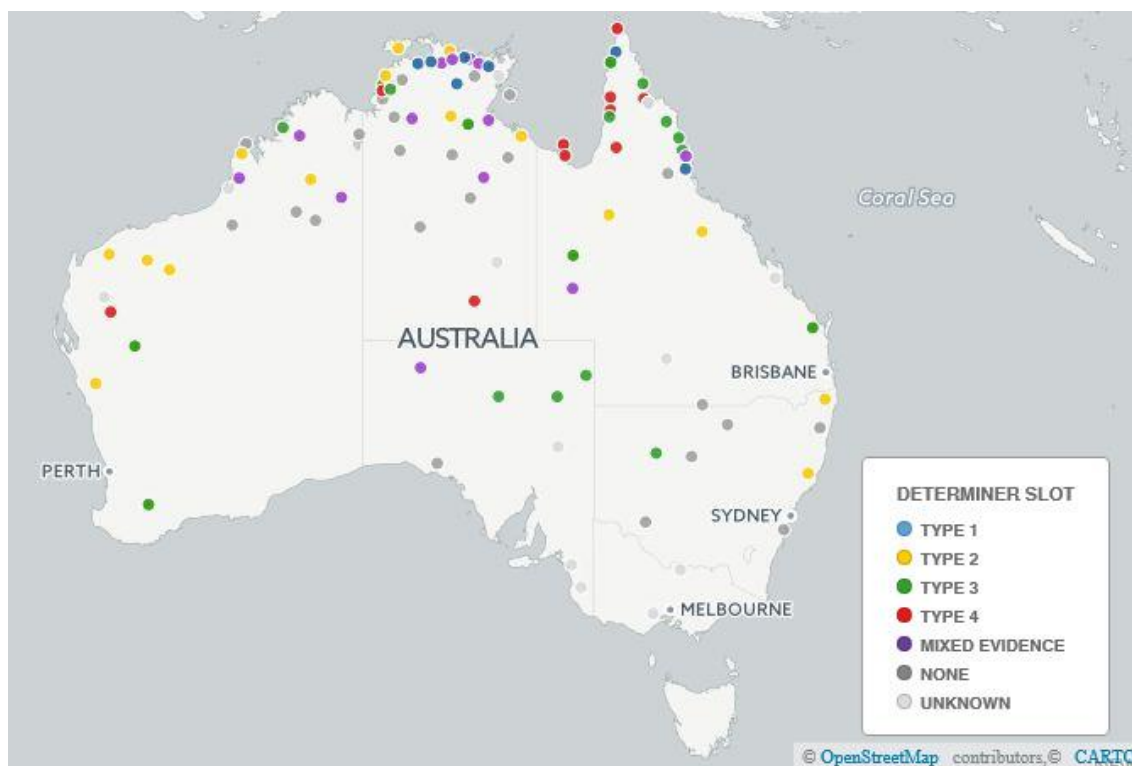
Map 12: Determiner slots. For an online, dynamic version of this map, see: http://bit.ly/determiner-overview. For more detailed information and references, see the tables attached at the end of this chapter.

The map shows some patterns in the spread of the four types. Type 1 is found in several languages, but only in the north of the continent, both in Cape York and in the Top End. Type 2 is more widespread, found in the Ngayarta languages (Panyjima, Yindjibarndi and Martuthunira) and Nhanda in the west of Australia, as well as in several unrelated languages in the north-west of the country, and in some languages of different Pama-Nyungan subgroups in the east and on the south-east coast. Type 3 is clearly represented in Cape York and Central Australia, as well as some languages scattered across the continent. In Cape York, a type 3 determiner slot is found in three languages of the Yimidhirr-Yalanji-Yidinic subgroup (Guugu Yimidhirr, Kuku Yalanji, Djabugay),[81] and in Yir Yoront, Umpila and Anguthimri (belonging to different subgroups). In Central Australia, type 3 is found in three Karnic languages (Arabana/Wangkangurru, Diyari, Yandruwandha),[82] as well as in the neighbouring but unrelated languages Yalarnnga and Paakantyi. Finally, type 4 is mainly found in Cape York: in two Middle Paman languages (Umpithamu and Kugu Nganhcara) and

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[81] The fourth language of this group in the sample, Yidiny, can possibly also be analysed as having a type 3 determiner slot, but with mixed evidence (see table 16).

[82] Again, the fourth Karnic language in the sample, Pitta-Pitta, also shows some evidence for a type 3 analysis, but it is mixed (see table 16).

two Southwest Paman languages (Kuuk Thaayorre and Oykangand), as well as in Kala Lagaw Ya. The two Tangkic languages (Kayardild and Lardil) of the sample also have type 4 determiner slots, as do three other, unrelated languages (Marrithiyel, Arrernte and Yingkarta).

Within these results, there are some remarkable features which deserve a bit more attention. These features have perhaps not often been associated with 'classic' determiners (see also the discussion in Stirling & Baker [2007]; see chapter 3, section 1), but they stand out in the languages of the sample, where dedicated determiners are infrequent and can thus not be the main focus of attention. Many languages show optionality of determiners, the use of multiple determiners, and non-specific fillers of the determiner slot and their functions. This last feature is investigated in more detail in section 3. The other two are briefly discussed here.

2.5.1. Multiple determiners

The co-occurrence of two, or even three, determiners is a first notable feature of many Australian languages. Unfortunately, this phenomenon is rarely discussed in the grammatical descriptions, or only in broad terms, which means that my analysis is mostly based on examples found in grammars or texts rather than explicit analyses. Nonetheless, there are some observations we can make about what determiner 'zones' in the sample look like.

First, there are different combinatorial possibilities. Commonly attested combinations are of a personal pronoun and a demonstrative, as in (5-21), and of a demonstrative and a possessive pronoun, as in (5-22). A demonstrative and a comparative modifier also often co-occur, as in (5-23).

(5-21) Arrernte (Wilkins 1989: 111)

> ***Artwe kngerre nhenhe re*** *kere aherre tyerre-ke.*
> man big this 3SG.A game kangaroo shoot-PST.COMPL
> 'This big man shot a kangaroo.'

(5-22) Yalarnnga (Breen & Blake 2007: 30)

> *Nhangu-ta nhawa nhina-ma* ***tjarru-nguta ngatha-langki-ya*** *mutu-ngka.*
> what-PURP 2SG remain-PRS this-LOC 1SG-LIG-LOC camp-LOC
> 'Why are you in my camp?'

(5-23) Umpila/Kuuku Ya'u (Hill 2015)

      nga'a-lu   **wiiyama**   **pulthunu**   *ngaachi-nguna-ma*

      DEM:DIST1-DM   another   boy   place-LOC-PRED

      'That other boy was at the place.'

Second, determiner complexes display some clear ordering tendencies, which can also be seen in the examples above. Generally speaking, a personal pronoun occurs at the very edge, as in (5-21) above and (5-24a) below, although in a few languages, its position is interchangeable with that of the demonstrative, as in (5-24b). A demonstrative usually occurs further from the head than a possessive pronoun, as in (5-22) above and (5-25a) below, although some counter-examples have been found, as in (5-25b). Finally, comparative elements are always closer to the head than other determiners, as in (5-23) above and (5-26a) below, with Tiwi (5-26b) as the only exception (Lee 1987: 221-230). These ordering tendencies seem to reflect a cline from more general (furthest from the head) to more specific functions (closest to the head). This hypothesis is in line with Rijkhoff's Principle of Scope, which also includes a claim that 'discourse modifiers' (e.g. articles)[83] occur further from the head than 'localising modifiers' (e.g. possessives) (2002: 218-223, 229-231; see chapter 3, section 1.1).

(5-24) a. Anguthimri (Crowley 1981: 177)

      lu   **dʳuʔa**   **yeḓi**   *dʳeːni-geni-ni*

      he.s   this   wind.s   different-INCH-PST

      'The wind has changed (= is now different).'

    b. Mawng (Forrester 2015: 61)

      naka-pa   **yanat–apa**   **wurakak**   *awuni-arrikpa-n*

      DEM:DIST.M-EMPH   3M.PRON–EMPH   crow   3M>3PL-ruin-NPST

      'That crow ruined them.'

(5-25) a. Bundjalung (Sharpe 2005: 98-99)

      munah-mba   *wangah*   *bargan*

      those.NVIS-LOC   2SG.POSS   boomerang

      'that boomerang (that you had)'

---

[83] Rijkhoff also mentions comparative modifiers such as 'other' and 'same' as discourse modifiers (2002: 231). However, as just mentioned, these elements are found closer to the head than other determiners such as demonstratives in almost all of the languages of the sample (for which there is information on this combination of modifiers).

b. Duungidjawu (Kite & Wurm 2004: 45)

guyum   **man**   **ŋa-ri**   *miye-ni*

camp   DEM   1SG-GEN   further.away-LOC

'My camp is further away.'

(5-26) a. Gooniyandi (McGregor 1990: 259)

niyi   *yaanya*   *yoowooloo*

that   other   man

'that other man'

b. Tiwi (Lee 1987: 225)

yoni   *awarra*   *murrukupuni*

other(M)   that(M)   country

'that other country'

There are also some issues which cannot be resolved in a typological analysis, but that require deeper analysis of individual languages. One is that in some languages there is no clear boundary that separates the determiner zone from other modifiers. This is especially the case for some languages of type 2 and type 4. An example is Kuuk Thaayorre, for which the NP template is given in (5-27) (in a simplified form, see also (4-15)). All modifiers, except for the adjective, are potential determiners (cf. section 3). Demonstratives and ignoratives are most likely part of a determiner zone, as these elements usually are in Australian languages, but it is unclear whether the quantifier and possessive pronoun are determiners here, as they are elements which are also often found in other functions across Australian languages.

(5-27) Kuuk Thaayorre (Gaby 2006: 297-298)

Template (G):

(N) ((Deg) Adj (Deg))* (Poss) (Quant) (DemPron) (IgnPron) (AdnDem)

Another interesting question is what the functional motivation is for using multiple determiners. A straightforward explanation is that each element contributes its own specific semantics (such as definiteness, possession or location), and in combination the elements 'determine' the NP, locating it in the context of the speech event or of the discourse. Interestingly, the use of multiple determiners also seems to correlate with certain functions in discourse. An example is the repetition of the same demonstrative in Ungarinyin, which serves to contrast two referents, as in example (5-28), where the name that JE mentions contrasts with the more specific names PN

has in mind (Spronck 2015: 175-176).[84] In Bundjalung, the combination of a visible and a non-visible demonstrative serves to (re-)introduce a referent in (5-29) (Sharpe 2005: 51-52). It remains unclear for most languages, however, what the exact functions are of the use of multiple determiners (except perhaps in the case of demonstrative + comparative determiner), both in the NP and in the larger discourse context.

(5-28) Ungarinyin (Spronck 2015: 176)

(PN introduces the topic of stones (*rarrki di* 'rock') and states there are rocks with different names, prompting JE's suggestion in the first line.)

JE: *manjarn   di*

   stone   N_w.ANAPH

   '[You mean] *manjarn*, stone'

PN: *aka   **kanda   kanda   w-alngun   di**   wumankarr kanda*

   not.so   N_w.DEM   N_w.DEM   N_w-name   N_w.ANAPH   black.rock N_w.DEM

   dinki   munda   kumbarru   munda

   limestone N_M.DEM   yellow.stone N_M.DEM

   'No, this name here: *wumankarr*, black rock, *dinki*, limestone and *kumbarru*, yellow stone'

JE: *ah   yow*

   ah yeah

   'Oh, yeah'

(5-29) Bundjalung (Sharpe 2005: 51)

Male   munah   baygal   *yina-li-ja-hn.*

that   that.NVIS   man   lie.down-ANTIP-PST-IMPF

'That man (previously referred to) was lying down.'

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[84] Ungarinyin does not belong to one of the four types described in section 2, because almost all types of modifiers seem to have a flexible position w.r.t. the head (Spronck 2015: 37-38, 166, p.c.). However, more or less fixed 'determiner constructions' seem to occur, like NPs with the anaphoric pronoun or constructions with multiple determining elements (Spronck 2015: 167-168, 175-176, p.c.). See also section 4.1 and table 16.

2.5.2. Optionality of determiners

A second interesting feature in the languages of the sample is the optionality of determiners. There are only two languages in the sample that have an obligatory determiner, in the sense that its absence also marks the absence of the feature it encodes. The "definitising pronoun" at the right edge of the Arrernte NP is an obligatory marker for definiteness, i.e. an NP without a definitising pronoun is "non-definite" (Wilkins 1989: 165), as illustrated in the contrast between (5-30a) and (5-30b) below. Similarly, in Kuku Yalanji, a bare noun "usually conveys new and/or indefinite reference," while a pronoun-noun combination is used for "anaphoric or definite reference" (Patz 2002: 202).

(5-30) Arrernte (Wilkins 1989: 129, 194)

    a. ***Artwe itne*** *no ahel-irre-ke*   ***artwe mperlkere ikwere.***
        man   3PL.S   no angry-INCH-PST.COMPL man   white   3SG.DAT
        'The men didn't become aggressive towards the white man.'

    b. *The* ***ayeye ampe-kweke-kerte*** *ile-me*   *ampe mape-ke.*
        1SG.A story   child-little-PROP(OBJ) tell-NPST.PROG child   PL(GROUP)-DAT
        'I'm going to tell a story about a baby to the kids.'

Beyond the category of determiners, there are some other examples of obligatoriness of identifiability markers in the sample. In Ngiyambaa, for instance, the 3ABS personal pronoun is obligatory for definite NPs (i.e. its use makes the following NP definite), as illustrated in the contrastive examples in (5-31a-b) (Donaldson 1980: 128). However, as this pronoun is enclitic to the previous element in the clause and consequently not part of the NP, it is not a determiner in the sense in which I use the term here.

(5-31) Ngiyambaa (Donaldson 1980: 128)

    a. *miri-gu=**na***   ***bura:y***   *gadhiyi*
        dog-ERG=3.ABS   child.ABS   bite.PST
        'The dog/ a dog/ (some) dogs bit the child.' (*a child)

    b. *miri-gu*   ***bura:y***   *gadhiyi*
        dog-ERG   child.ABS bite.PST
        'The dog/ a dog / (some) dogs bit a child/(some) children.' (*the child)

For all other languages, determiners are not obligatory (see also McGregor [2013] on optionality in this sense). In other words, a bare noun can have both definite or indefinite interpretations. This is a feature that has been highlighted in the existing literature on determiners on Australian languages. For instance, it is one of the key features of Stirling & Baker's (2007: 5) category of 'topic determiners', which are "much more at the speaker's discretion" (ibid.) (see chapter 3, section 1.2, for more details).

3. Elements which fill determiner slots

Now that I have identified a determiner slot or zone in half of the languages of the sample, I can turn to the second main question: which elements can occur in these determiner slots? As already mentioned, Australian languages are generally quite different from typical 'determiner languages', in that they have very few elements which are specialised in the determiner slot (such as articles). There is, however, a whole range of elements that can occur both in the determiner slot and elsewhere, which allows us to contrast these two uses and gives us an interesting window into determiner semantics.

Elements that are attested in a determiner slot in the languages of this sample are articles, demonstratives and other 'locational' elements, 3rd person pronouns, possessive pronouns, interrogatives, 'ignoratives' and indefinites, quantifiers and numerals, and comparative qualifiers.[85] As they can all occur in the same slot, I assume they must share a particular function, and thus have a particular semantic feature in common which allows them to take up this function, whether it is a prominent part of their semantics or not. I argue that this is 'identifiability' (see also chapter 3, section 1.1). I use this concept not just in the classical sense - encoding whether the referent(s) of the NP is/are identifiable or non-identifiable -, but also include other types of identifiability, such as identifiability of the reference mass (i.e. the intended referent is not identifiable in itself, but it is directly related to a reference mass which is identifiable), following Langacker (1991) and Davidse (2004).

In the rest of this section, I discuss each of the different categories that can occur in determiner slots, analysing how their semantics fits in with determiner uses as well as other uses. The order in which I discuss the categories relates to how typical they

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[85] The main focus of this thesis is 'simple' NPs (as discussed in the Introduction), i.e. I will not discuss embedded or complex modifiers such as possessor NPs.

are as determiners: I start out with categories that occur most typically (or even exclusively) as determiners, and gradually move on to categories that are less typical as determiners, and more often used in other functions. Information about which elements can occur in the determiner slot in each language can be found in tables 12 to 15 at the end of this chapter, as well as in the online version of map 12, by clicking on individual data-points.

3.1.   Articles

Articles, as a specialised category of markers, have often been regarded as the prototype for determiners, even though they are far from universal (see e.g. Lyons 1999: 48-51). A definite article is formally defined by Himmelmann (2001: 832-833) as (i) a grammatical element which occurs only in nominal expressions, (ii) with a fixed position, and (iii) which is obligatory in grammatically definable contexts.

For only two languages in the sample does the grammatical description posit a separate part of speech with the label 'article'. The article in Marra (Heath 1981: 64, 68-70, 270; Baker 2008) is a marker of discourse topicality (as opposed to a zero for focus or contrast), and is also used in certain polarity contexts (Baker 2008: 139, 142-147). It is specialised in the determiner slot and never occurs elsewhere (see (5-32) for an example; the article is glossed TOP for topic).[86]

(5-32) Marra (Baker 2008: 153)

ŋapa	**ŋana**	**Ø-juntuɲuka**	wa-Ø-ciɲca-jiɲca	Ø-wiici,	Ø-maca
also	M.TOP	M-turtle	NPST-3SG.S-DISTR-eat.PRS	M-grass,	M-sea.grass

ŋana	**Ø-waɭca,**	wa-Ø-ciɲca-jiɲca	**ŋana**	**Ø-wiici**
M.TOP	M-dugong	NPST-3SG.S-DISTR-eat.PRS	M.TOP	M-grass

'The turtle/turtles eat grass, sea grass [that is]. And dugongs, they eat grass [too].'

In the other language, Mawng, the article has recently been re-analysed as "on the path of grammaticisation between a generic article and a noun marker" (Forrester

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[86] Marra does not belong to one of the four types discussed in section 2. However, there is some evidence for positing a determiner slot at least for the article, which has a fixed initial position (whereas all other modifiers are flexible w.r.t. the head). See section 4.1.

2015: 92), occurring not only NP-initially but also between other elements, and thus as not (or no longer) being a determiner.[87]

In addition, there are a handful of languages where either a 3rd person pronoun or a demonstrative has been characterised as 'general definite determiner' or 'similar to the English article *the*' in the grammatical descriptions, because they show some signs of grammaticalisation (such as semantic bleaching). This suggests they may be changing word class. The proximal demonstrative =*n* in Worrorra, for instance, is mainly used as a definite article according to Clendon (2014: 160):

> "the main and most frequent function of =*n* in Worrorra appears to be to grammaticise identifiability (cf. Lyons 1999: 278); in Lyons' terms, =*n* occupies a structural position activating definiteness in the NP in which it occurs."

Another example is Nyulnyul, where the third person minimal pronoun *kinyingk* in adnominal use is analysed by McGregor as a "non-demonstrative determiner" marking definiteness (2011: 124-125, 158-159). One reason for McGregor's analysis of adnominal *kinyingk* as a determiner rather than a pronoun is that it can be used for non-minimal referents as well as for inanimate referents, as in (5-33), which is impossible for the free pronoun.

(5-33) Nyulnyul (McGregor 2011: 158)

kinyingk *bilabil* *bardangk-ukun* *riib* *arri* *layib*
DEF   leaf   stick-ABL   bad   not   good
'The leaves of that tree are poisonous.'

Whatever the status of these elements in terms of word class (a detailed study is beyond the scope of this chapter), they are elements which seem to be specialised fillers of the determiner slot(s) posited for these languages.

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[87] A different analysis was proposed by Singer (2006: 49-54), who makes a distinction between the initial article, which has a function relating to information structure, and linking articles which occur between elements of the NP. In this scenario, the initial article can be analysed as a filler of the initial determiner zone, since it occurs in fixed initial position (similar to the demonstrative and personal pronoun, and contrary to other modifiers which can precede or follow the head, see also section 2.2). The main reason why Forrester (2015: 67-92) discards this distinction between initial article and linking article is that a new analysis of data has shown that all articles are optional (instead of just the initial article, as Singer argued) and thus have the same status.

3.2. 'Ignoratives', interrogatives and indefinites

Another set of elements that are found in the determiner slot are interrogatives and indefinites. Most interrogatives can also occur on their own (i.e. as head of a NP), but there are no examples of interrogatives or indefinites occurring in a non-determiner modifier slot, i.e. when used adnominally they are specialised in the determiner slot.[88] This is not surprising considering their rather specialised semantics of (non-)identifiability (though in addition some forms can also mark different 'knowledge categories', cf. Mushin [1995: 7-20]). Interrogatives encode that the speaker is not able to identify the referent but that the hearer possibly can (and thus invite the hearer to provide this information). Indefinite markers encode, simply stated, that the speaker assumes the referent is not identifiable by the hearer.[89]

Australian languages often (though not always) take the interrogative and indefinite sense together in one element; these are the so-called 'ignoratives' or 'epistememes' (see e.g. Mushin 1995). Unfortunately, there is limited information on the adnominal use of these elements in my sample, especially in their indefinite sense (if it is at all possible to distinguish between the two senses). An example of an adnominal interrogative occurring in the determiner slot, can be found in (5-34) from Nyulnyul (McGregor 2011: 405). Two possible examples of an ignorative used in the determiner slot in indefinite sense can be found in (5-35a) from Martuthunira and (5-35b) from Arabana/Wangkangurru.

(5-34) Nyulnyul (McGregor 2011: 136)

angka   wamba   juy
who   man   2MIN.CRD
'Who are you?'

---

[88] In languages that have two determiner slots, the interrogative/indefinite form is usually (but not always) restricted to the initial slot. Note that for many languages, it is unknown whether interrogatives/ indefinites can be used as modifiers of nouns (e.g. it is not mentioned and there are no or few relevant examples in the grammars).

[89] Davidse (2004: 522) argues that indefinites do encode identifiability, but of another type, viz. identifiability of type specifications: indefinites "instruct the hearer to conceptualize instances as corresponding to the categorization specified by the speaker" (cf. also Langacker 1991, Gundel et al. 1993).

(5-35) a. Martuthunira (Dench 1994: 109)

> *Nhulaa*   *kanyara* *thurlanyarrara* *ngaliwa-mulyarra*   *kanarri-lha*
> near.you   man   poor.fellow   1PL.INCL-all   come-PST
>
> *wawayi-l.yarra* **nganangu**   *juwayumarta-a.*
> look.for-CTEMP someone.ACC   doctor-ACC
>
> 'That poor man near you came to us looking for a doctor (assuming there might be one).'

b. Arabana/Wangkangurru (Hercus 1994: 299-300)

> *Nharla*   *thangka-ka* *waru,*   *kaRu*   *mudlu-nga.*   *Akuru*   *ikara-nga*
> person   sit-PST   long.ago   there   sandhill-LOC   over.there   swamp-LOC
>
> *Kuyani-na,*   **minha**   **wangka**   **nguRu,**   *Wardityi-karla-nganha,*
> Kuyani-EMPH   what   language   other   Mulga-Creek-from
>
> *thadlu*   *mathapurda,*   *pinya.*
> only   old.man   vengeance.party
>
> 'Long ago some (Arabana Aboriginal) people stayed there on the sandhill. Further away over in the swamp there were Kuyani people, **speaking some language other (than ours)**; these were only grown-up men, they were a vengeance party.'

It is unclear whether the indefinites in the sample are used for specific, non-specific or even generic instances, or all of these.

3.3. Third person pronouns

A third person pronoun refers to non-speech act participants, and is further specified for number and possibly also gender. Lyons (1999: 26-32), following Postal (1970), attributes a feature of definiteness to personal pronouns (contrasting with indefinite pronouns such as *someone*), arguing for a close link between personal pronouns and definite articles. Himmelmann (1997: 218-219), by contrast, argues that the likeness between these two is only due to their common source,[90] and refers to the tracking use of personal pronouns as a possible starting point for their adnominal grammaticalisation.

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[90] Demonstratives are a typical source of personal pronouns, and therefore, it can sometimes be hard to distinguish between them. See Louagie & Verstraete (2015: 162-163) for some examples where third person pronoun forms appear to be demonstratives.

Both definiteness and tracking are clearly related to identifiability, which explains why pronouns in adnominal use have their most natural position in the determiner slot, and indeed almost exclusively occur in this slot in the languages of the sample, as illustrated in (5-36)-(5-37).[91]

(5-36) Diyari (Austin 2011: 105)

> ***nhani***   ***mankarra***   *nhintha*   *pani*
>
> 3SG.F.NOM   girl.NOM   shame   none
>
> 'The girl is shameless.'

(5-37) Arrernte (Wilkins 1989: 499)

> *Elizabeth*   *ne-ke*   *ingke*   *utyene-kerte*   *ante*   *Elizabethe-ke*   *newe-le*
>
> Elizabeth   be-PST.COMPL   foot   sore-PROP   and   Elizabeth-DAT   spouse-ERG
>
> *knge-ke*   ***crowbar***   ***ulthe-ntye***   ***re-nhe.***
>
> take-PST.COMPL   crowbar   press.down-NMLZ(heavy)   3SG-ACC
>
> 'Elizabeth had a sore foot and so her husband carried the heavy crowbar.'

This is confirmed in the functions identified for adnominal pronouns in the sample: they are markers of definiteness and/or specificity, or they have a function relating to discourse management. For example, structures like (5-36) from Diyari are analysed as follows by Austin (2011: 100):

> "Noun phrases in Diyari which contain a pronoun (…) are interpreted as definite, that is, the speaker assumes the hearer can uniquely identify the intended referent(s) of the NP (…). Third person pronouns without deictic or post-inflectional suffixes can be translated into English as 'the' when preceding other NP constituents."

Functions relating to discourse management are, for instance, topic continuation in Guugu Yimidhirr (Haviland 1979: 156), and "reintroduction of major characters" in the narrative structure of Kala Lagaw Ya (Stirling 2008: 198). See Louagie & Verstraete (2015: 176-178) for more examples and a more detailed discussion.

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[91] The adnominal use of third person pronouns is discussed in more detail in Louagie & Verstraete (2015). This paper identifies a determining function for these elements, based on distributional and functional properties, but remains undetermined about their precise syntactic status. This is resolved in the current chapter: their use in languages with a clear determiner slot is discussed in this section; additionally, third person pronouns can of course also be used adnominally in languages without a clear determiner slot (see section 4).

There are only three languages in the sample where personal pronouns can also occur in another slot than a determiner one. In these non-determiner uses, it seems that other features of the pronoun's semantics are profiled, while the definiteness and tracking features are backgrounded. In Djapu (one of the Dhuwal varieties), it is the number value of the pronoun that is profiled in the non-determiner use, resulting in its use as a number marker. Number markers always immediately follow the head. Adnominal pronouns in Djapu can also be used as determiners and then occur in the initial slot. Each of these uses correlate with certain formal features (Morphy 1983: 47-48; see also Louagie & Verstraete [2015: 177-178] for a discussion). An example showing both uses can be found in (5-38). (See chapter 2, (2-41) for another example.)

(5-38) Djapu (Morphy 1983: 48)

> *nhina*   *ŋanya*   *dhuḏakthu-n-a*   *ŋunhi-yi*   *dhäruk*
> sit.UNM   3SG.ACC   learn-UNM-IMM   that.ABS-ANA   language.ABS
> ***walal***   ***mitjinarri-y***   ***walala-y***
> 3PL.NOM   missionary-ERG   PL-ERG
> 'The missionaries are now learning this language.'

In the other two languages, Dalabon and Gooniyandi, the personal pronoun can be used as a qualifier. This use seems to relate partly to focus or emphasis, where the pronoun's inherent semantics of number or gender is potentially lost. This is also argued by Cutfield (2011: 54) for the Dalabon example in (5-39b), where the third person singular pronoun has "grammaticalized into a postnominal emphatic marker." In Gooniyandi, the adnominal personal pronoun *niyi* (analysed as "distal endophoric determiner" by McGregor [1990: 144-145]) regularly occurs in the post-head Qualifier slot, used when special focus is put on a previously mentioned referent (McGregor 1990: 270).

(5-39) Dalabon (Cutfield 2011: 50-58, 113, 54)

> a. Template (G): (Deictic) Noun (Qualifier)
> b. *bah*   ***njel***   ***yibung***   *yala-h-bakah-ni-nj*
>   CONJ   1PL   3SG   1PL-R/A-many-sit-PST.IPFV
>   'but there were a lot of us'

3.4. Demonstratives

If a language with a determiner slot has a separate category of demonstratives, they can always occur in this slot, but in some languages they can also occur as modifier outside this slot, although usually less frequently.[92] Both options reflect the inherent semantics of demonstratives. In broad terms, demonstratives specify that the speaker believes the hearer can identify the referent because (i) its location is specified (e.g. in terms of distance distinctions), (ii) it has been mentioned before, or (iii) it is shared knowledge (cf. Diessel 1999; Himmelmann 1997). In other words, the feature of identifiability is part of the semantics of demonstratives, and it is this aspect that is highlighted when the demonstrative is used in a determiner slot, its most natural position. However, the identifiability-component can also be backgrounded, and in such cases it is the location of the referent that is highlighted as an attribute of the referent, which explains its use in a non-determiner slot. This often happens in 'pointing' contexts, where the demonstrative literally points to a referent which is present in the context.

The contrast between these two uses of the demonstrative can be illustrated with some examples from Gooniyandi. The NP template is given in (5-40a) (repeated from (5-3a)), an example of the regular determiner use of the demonstrative in (5-40b), and an example of qualifier use in (5-40c). This last example shows how the demonstrative is used in a 'pointing' context (and is even accompanied by lip-pointing); in this case, the demonstrative provides the location of the referent as an attribute. According to McGregor (1990: 267-268) this implies a predicative relationship: a paraphrase of (5-40c) might be 'the tobacco which is here'.[93] A similar functional analysis is given for Gaagudju (Harvey 2002: 316-320), Dalabon (Cutfield 2011: 122), and Limilngan (Harvey 2001: 112-113).

(5-40) Gooniyandi (McGregor 1990: 253, 254, 268)

    a.   Template (G): (Deictic)^(Quantifier)^(Classifier)^Entity^(Qualifier)

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[92] In many, if not all, languages of the sample, demonstratives can also function as the 'head' of a NP (i.e. pronominal use). This, together with word order flexibility (both on NP level and on clause level) in some languages, sometimes makes it hard to distinguish adnominal and pronominal uses. I have followed the analysis of the author where available.

[93] This is related to a general distinction between pre-head 'reference modification' and post-head 'referent modification' (Bolinger 1967; McGregor 1990: 267-268). Reference modification entails a selection of a subset of potential referents ("subclassification"), while referent modification involves a predicative relationship.

b. *ngooddoo garndiwiddi   yoowooloo gimangarna*

| that | two | man | bush:dweller |

'those two bushmen'

c. ***ngoonyjoo   ngirndaji***   *waranggila dina -yawoo*

| tobacco | this | I:hold:it | dinner-ALL |

'I keep this tobacco until dinner-time.' (accompanied by lip-pointing at the actual object)

3.5.   Possessive pronouns

Together with demonstratives and personal pronouns, possessive pronouns are one of the most frequent fillers of the determiner slot in my sample, but they are also the least rigid of these three: they occur relatively frequently outside of this slot (both within and across languages), either in a qualifier slot (on a par with descriptive adjectives) or in a slot of its own. Thinking about an explanation for this flexibility, we can see that possessive pronouns encode identifiability, but they also contain a descriptive element, which is perhaps more salient here than, for instance, in demonstratives. A possessive pronoun marks the referent as identifiable because of its association with another, identifiable referent (see e.g. Rijkhoff 2002: 174-175; Willemse 2005; Langacker 1991), which is what motivates the use of possessive pronouns as determiners.[94] When used in a qualifying slot, the fact that the referent is a particular person's possession is merely descriptive, in the same way that a descriptive adjective, for instance, attributes a particular quality to the referent.

The presence of these two components in the semantics of the possessive pronoun comes to the surface most clearly in languages that allow a choice between use of the possessive in either the determiner or the qualifier slot. An example is Martuthunira (cf. the NP template in (5-41a)). In the determiner slot, the possessive pronoun "narrows the reference of the phrase by contextual identification of the

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[94] Himmelmann (2001: 839) notes that possessives can in some languages even grammaticalise further into articles. This happens, for instance, when the possessive is used in contexts beyond possession, like in (v), where the possessive affix has a larger situational use (referring to the river that is known to the whole speech community; the river is nobody's possession).

(v)   Indonesian (Himmelmann 2001: 839)
*karena   sungai-**nya**   keruh*
because   river-3SG.POSS   muddy
'(We couldn't take a bath) because the river was muddy'

referent" (Dench 1994: 190), as in (5-41b) (repeated from 5-11b), while in the Qualifier slot it "attribut[es] some characteristic to the referent of the noun phrase" (Dench 1994: 192), as in (5-41c).

(5-41) Martuthunira (Dench 1994: 189, 190, 192)

 a. Template (G):

  (Determiner)^(Quantifier)^(Classifier)^Entity^(Qualifier(s))

  Nganaju yaan *yungku-lha murla-a yartapalyu-u kanyara-ngara-a.*

  1SG.GEN wife give-PST meat-ACC others-ACC man-PL-ACC

  'My wife gave meat to the other men.'

 b. *Ngayu kanarri-lha nhuwana-a wangka-lu **ngurra-ngka***

  1SG.NOM come-PST 2PL-ACC speak-PURP.SS camp-LOC

  nhuwana-wu-la *nyina-nyila-a.*

  2PL-GEN-LOC sit-PRS.REL-ACC

  'I came to talk to you sitting in camp, your camp'

3.6. Quantifiers and numerals

In most languages in the sample, quantifying elements have a similar distribution as adjectives, or they have their own slot (see also chapter 2, section 2.3). However, there is also a handful of languages in the sample where they can occur in the determiner slot, and some more where they are flexible between the determiner slot and a non-determiner slot.

 What is it in the semantics of quantifiers and numerals that allows them to be used not only as quantifiers or qualifiers, but also as determiners? At first sight, they simply encode the quantity of entities referred to, which explains their natural position in a separate quantifier slot. The quantity of entities can also be attributed to a referent, i.e. used as a descriptive feature, which explains its use as qualifier (similar to what we saw for qualifying demonstratives or possessive pronouns; see below for examples). The determiner use may seem hardest to explain, but if we look more closely, there is often some sense of identifiability in quantifiers as well, which can be profiled when used in a determiner slot. As argued by Davidse (2004), in an article that focuses on English but has much broader theoretical relevance, relative quantifiers select a subset of the set of potential referents (the 'reference set'). This selection may involve a part of the reference set (as with *most* or *some*), the whole set (as with *all*), or non-overlap

(as with *none*) (Davidse [2004: 509, 521]; also referring to Langacker [1991] and Milsark [1977]). Since relative quantifiers compare the referent of the NP to a reference set, this implies that this reference set is identifiable (Davidse 2004: 521). Absolute quantifiers (like *many* or *two*), on the other hand, express cardinality or size (Davidse 2004: 509; cf. Langacker 1991, Milsark 1977), and are, according to Davidse (2004: 530), in complementary distribution with indefinite articles in English, in the sense that they can "ground" indefinite NPs. In other words, just like indefinite articles, absolute quantifiers "require the hearer to recognize instances as instances of T [i.e. type specifications, DL]," which implies that the general type or class of things referred to is identifiable (Davidse 2004: 530; cf. also section 3.2). Interestingly, absolute quantifiers can also act as non-determining modifiers in English, when combined with a definite determiner (such as a definite article), in which case they simply "count" the number of instances (Davidse 2004: 531).

Let us investigate this issue further, using two languages that can have quantifying elements both in a determiner slot and in a non-determiner slot as examples. The first is Umpila/Kuuku Ya'u (Hill 2015), where quantifying elements are analysed as determiners, as can be seen in the template shown in (5-42a) (repeated from (4-11) and (5-15)) and the example in (5-42b) – as the template suggests, anything to the left of the noun is a determiner. Interestingly, this example shows how the numeral is combined with a personal pronoun, which seems to be a definite determiner (i.e. marking or at least implying definiteness, based on the translation). Quantifiers can also, though much less frequently, occur in the modifier slot (Hill 2015), where they "specify or emphasise the degree or number of the referent as an attribute, rather than employing the quantificational semantics as an identification tool" (Hill 2015). For instance, in (5-42c), the numeral 'one' functions as description (as can be seen in the translation 'lone coconut'), not as determiner marking identifiability (Hill 2015).

(5-42) Umpila/ Kuuku Ya'u (Hill 2015)
    a. Template (G):
       (Det) (Entity) (Mod) (Det)
       with Det:⎡ [(Pron) (Dem) (Quant)] or
           ⎣ [Poss.Pron]
    b. ***pula***   ***pa'amu***   ***ku'unchi***   *nhiina-na*
       3pl.nom   two   old.woman   sit-NFUT
       'those two old women sat.'

c. *nganan/*   ***kuunga   nhi'ilama*** *paa'i-na*   *ngungku-lu*
    1PL.EXCL.NOM   coconut   one   stand-NFUT   DEM:DIST2-DM
    'Us lot (sat) by the lone coconut over there'

The second example is Gooniyandi (cf. the NP template in (5-43a), repeated from (5-3a)), where number words can occur in the determiner slot, the quantifier slot or the qualifier slot. An example of each use can clarify the functional differences between them, which have been described in great detail by McGregor (1990) (further examples can be seen in (5-3) above). In (5-43b), the number word 'one' occurs in the determiner slot. Number words occur in this slot for instance when used "comparatively", either indicating - as in the example – "that reference is being made to precisely the same one, two, etc. entities already established" (i.e. similar to comparative modifiers, see section 3.7), or "to each member of the previously established set of entities" (i.e. like relative quantifiers *both* and *all* in English) (McGregor 1990: 258). The example also shows how in this use the number word is often suffixed with *-nyali* 'repetition' (McGregor 1990: 258). Example (5-43c) illustrates the more frequent use of number words in the quantifier slot, where it simply indicates the number of things referred to, in this way contributing to the selection of a set of referents (McGregor 1990: 270-271). Finally, in (5-43d), the number word occurs in the post-head qualifier slot, again indicating the number of things referred to, but here just as an attribute of the referent (McGregor 1990: 270-271). McGregor's work on Gooniyandi also shows that we need to be careful to distinguish between a determiner and a quantifying function, which can share the function of 'reference modification' (i.e. the selection of a referent). This distinction is not easy to make for many of the languages in the sample.

(5-43) Gooniyandi (McGregor 1990: 253, 258, 270, 272)
    a. Template (G): (Deictic)^(Quantifier)^(Classifier)^Entity^(Qualifier)
    b. *yoowarni-nyali   mayaroo*
        one-REP   house
        'the same house'
    c. *milala   garndiwiddi   thadda   ngaanggi*
        I:saw:it   two   dog   yours
        'I saw two dogs of yours.' or 'I saw two of your dogs.'

 d. *ngaddagi ngaloowinyi garndiwiddi*
   my   son   two
   'the two of my sons, both of my sons'

Perhaps the most easily recognisable case of quantifying elements acting as determiners is the indefinite use of the numeral 'one'. This is only allowed in a few languages of the sample. An example is Bininj Gun-wok (Evans 2003a: 244), which does not have a clear determiner slot, except in the case of the indefinite marker 'one, a certain', which has a clearly identifiable position (see further in section 4). It is used for "the explicit treatment of an entity as a new mention" (Evans 2003a: 247), and has a fixed initial position, while the numeral 'one' (same form) can occur either preceding or following the head. An example can be found in (5-44). Another example, from Gooniyandi, was given in (5-3b) in section 2.

(5-44) Bininj Gun-wok (Evans 2003a: 681)
   *"Njamed, **na-gudji nayin** ga-yo!"* *ba-mulewa-ni.*
   what   M-one   snake 3-lie.NPST 3PST-inform-PST.IPFV
   '"Hey, there's a snake here!" he'd say.'

3.7. Logical and comparative modifiers

This section concerns elements with meanings like 'same', 'another, other(s)', 'some, some other', 'other, a certain', etc. Some elements are purely comparative, while others have both a comparative and a non-comparative sense (hence the often-used label 'logical modifiers'). This non-comparative sense seems to involve indefiniteness (as with 'some') and/or specificity (as with 'a certain'), which can be linked back to the discussions in section 3.2 and perhaps section 3.6 above. Consequently, this section focuses on the comparative senses. Unfortunately, these modifiers are not often discussed explicitly in grammatical descriptions - especially in terms of their distribution in the NP. For about 11 languages, we do have a mention of these elements as having the same distribution as determiners or occurring in the determiner slot. It is unclear what the distribution of these elements is in other languages, although it is likely that they also often appear in non-determiner modifier slots.

The use of comparative modifiers in a determiner slot is not surprising if we look at their semantics, which again encode a feature of identifiability. The speaker believes the hearer can identify the referent because it is the same as one previously mentioned, or because it is another referent than the one mentioned before but, for instance, with similar characteristics. As argued by Breban & Davidse (2003) and Breban (2002, 2010) in studies on the determiner use of English and Dutch 'adjectives of comparison', this (post)determiner use is the result of a process of grammaticalisation (see also example (3-7) in chapter 3). It is unclear whether we can go this far for the languages of the sample; a discourse or corpus study of each individual language as well as diachronic information would be needed to answer this question. In a non-determiner modifier use, one can presume that the non-determining semantics is profiled, viz. the descriptive quality of difference or same-ness (cf. also the 'lexical' uses in English as described by Breban [2002]).

An example of a language where comparative modifiers are used in the determiner slot is Kayardild (Evans 1995: 240). The NP template is given in (5-45a), and an example of *niid-a* 'same' filling the determiner slot in (5-45b). This element has a feature of identifiability as part of its semantics: "Here the speaker assumes that the hearer can identify the referent, because it is identical to something that has just been talked about" (Evans 1995: 240).

(5-45) Kayardild (Evans 1995: 235, 240; see also fn. 101)
   a.   Template (G): (Determiner) (Number) (Qualifier) Entity (Modifier)
   b.   (After talking about the responsibilities of the father-in-law):

   rar-umban-ji   *dulk-i*   **niid-a**   **warngiid-a**   **mungkiji**
   south-ORIG-LOC   country-LOC same-NOM   one-NOM   own(NOM)
   kardu   *kala-th*
   father-in-law.NOM   cut-ACT
   'In the south land (i.e. on Bentinck Island) the same one true father-in-law performed the circumcision.'

There are also examples of comparative modifiers occurring in the qualifier slot, e.g. (5-46b) from Uradhi (compare section 2.1 for an example of determiner use of 'other' in Uradhi). According to my analysis, 'other' is a qualifier in this position (viz. following the head) and attributes a quality of being different to the referent, rather than having a determiner function. There are also examples of these elements occurring as head in several languages (as in (5-46c)).

(5-46) Uradhi (Crowley 1983: 399)

(story of how the narrator signed up in the army and had to work as a cook)

a. *ayu*   *wa-ɣa:*   *wa-ɣa:* *wa-ɣa:* *ayi*

1SG.NOM   cook-PST   cook-PST cook-PST   food.ABS

ula:mu   *umay-ku*

3NSG.GEN.ABS   European-DAT

'I cooked and cooked and cooked the food for the Europeans'

b. **umaɲ**   **uɲiṉa** *ana-a:lu*   *ayi*   *ayu*   *u-ka:*

European.ABS other.ABS go.PRS-HERE food.ABS 1SG.NOM give-PST

'Other Europeans would come and I would give them food.'

(...)

c. *ulaβa*   *ana-n*   **uɲiṉa**   *ana-a:lu*

3NSG.NOM go-PST   other.ABS come.PRS-HERE

'They would go and others would come'

3.8.   Conclusion

This section provided an overview of the categories of elements that can occur in determiner slots. Some elements more typically occur in determiner slots than others, which correlates with their semantics. For instance, articles and ignoratives/interrogatives/indefinites only encode the identifiability status of the referent and thus exclusively occur in the determiner slot when used adnominally (articles are even restricted to this adnominal use). Other elements, like third person pronouns and demonstratives, still have a prominent feature of identifiability in their semantics but also encode other things (like number or deictic contrast). Accordingly, they are most typically used as determiners, but they also allow non-determiner use in some languages. Finally, there are elements where the feature of identifiability is not very prominent, like qualifiers and numerals; accordingly, these are found only occasionally in a determiner slot.

Table 11 gives an overview how a particular part of speech typically behaves with reference to a determiner slot (for the languages that have a determiner slot and have the relevant part of speech, of course). For instance, in all languages that have an article, it is specialised in the determiner slot; in many languages that have a possessive pronoun, it is specialised in the determiner slot, but in some it is flexible between the

determiner slot and another position, and in some it never occurs in the determiner slot.

Element	Specialised in determiner slot	Flexible (determiner slot or elsewhere)	Only outside determiner slot
Article	all languages	/	/
Ignorative, interrogative, indefinite	all languages	/	/
Third person pronoun	almost all languages	a few languages	/
Demonstrative	most languages	some languages	/
Possessive pronoun	many languages	some languages	some languages
Quantifier, numeral	some languages	some languages	many languages
Logical/ comparative modifier	at least some languages	at least some languages	?

Table 11: Elements filling determiner slots. See also map 12.

4. Languages without determiner slots

The previous sections identified a determiner slot or zone in half of the languages of the sample, and discussed the types of elements that can occur in it. In this section, I address the question of what happens in the other half of the sample. It is certainly not the case that all 50 languages show clear evidence against a determiner slot. For some of these languages there simply is not enough information available to decide either way (this is the case for 13 languages; see table 18 for an overview). Another group of 13 languages shows mixed evidence, and a set of 25 languages shows at least some evidence against a determiner slot. I now discuss these last two groups in more detail.

4.1.   Languages with mixed evidence

There are 13 languages that show mixed evidence of different types. An overview can be found in table 16 (to be found at the end of this chapter, p. 221); see also map 12 above. These languages are mainly situated in the north-west of Australia, with a few other languages in the centre (Yankunytjatjara and Pitta-Pitta) and the northeast (Yidiny).

A subset of eight languages have a fixed position for one or two elements with a determining function (initial for seven languages), while all other modifiers (with determining or non-determining functions) have a flexible position relative to the head and usually also to each other. A possible analysis here is that there is an initial/final determiner slot with only one or two possible fillers. This was suggested for the indefinite 'one' in Bininj Gun-wok in section 3.6.[95] Another example is Marra (Heath 1981: 64, 290; Baker 2008: 139), which was mentioned in section 3.1 as the only language of the sample that has an article. This article is the only element in the NP that has a fixed position, as shown in the NP template in (5-47). The Marra NP could be analysed as having an initial determiner slot, with the article and potentially even the demonstrative as fillers. Analysing the pre-head demonstrative as a determiner is supported by the fact that demonstratives more frequently precede the head, while adjectives and possessive pronouns usually follow. The post-head demonstrative would, under this analysis, function as qualifier (like the adjective and possessive). This analysis cannot, however, be confirmed based on the available material, so I can only analyse the article as a determiner in this case, which is also why this language was not included in section 2.1.

(5-47) Marra (Heath 1981: 64, 290, examples)

    Template (W+E):   article – dem – head – A/poss

                        (article) – A/poss – head[96]

                        head – dem *(less frequent)*

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[95] Bininj Gun-wok actually allows other determining elements to occur between the head and other modifiers, and thus also belongs to the category of languages with evidence against a determiner slot (see section 4.2; it is accordingly counted twice). This is a good illustration of the fact that the presence of a determiner slot may be restricted to certain NPs (which again ties in with the idea of NP construal put forward in chapter 4).

[96] "The article (…) is omitted when the Genitive pronoun precedes the noun, and is often omitted when an adjective-like modifying noun precedes it (…)." (Heath 1981: 290)

The other five languages show a variety of features and different types of evidence. Table 16 specifies the NP structure, a possible determiner analysis, and evidence for and against the identification of a determiner slot for each of these five languages. I illustrate this situation with just one example, viz. Wardaman (Merlan 1994: 227-234, examples). The NP template is given in (5-48a), showing how all types of modifiers are flexible relative to the head, as illustrated in (5-48b-d). There is, however, a clear tendency for the demonstrative to occur in initial position, and a similar, but weaker tendency for the possessive pronoun (Merlan 1994: 229, 231). Additionally, if a demonstrative or possessive pronoun is combined with an adjective, the elements either occur on different sides of the head (as in (5-48b)) or on the same side with the demonstrative or possessive at the edge (as in (5-48c)) (Merlan 1994: 232-234). In other words, while the criterion of clear delineation from other modifiers is not met (because all modifiers are flexible), the edge criterion is fulfilled. If we were to identify a determiner slot despite the lack of clear delineation, there are two analytical options, viz. type 2 (determiner – head – modifier) or a variant of type 3 (determiner – modifier – head – modifier – determiner). In a type 2 analysis, the post-head demonstrative and possessive pronoun have a non-determiner function, while in a type 3 analysis they have a determiner function.[97]

(5-48) Wardaman (Merlan 1994: 227-234, 388; own glossing for b-c)

    a. Template (W+E): dem/poss – A – N – A;

                              interr – N;

                              N – dem/poss;

                              num – N or N – num

    b. *nana*   *yijad*   *wurren*

       that.ABS big.ABS child.ABS

       'the big child'

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[97] This is in fact a more general problem: when can we analyse post-head use of demonstratives (or other elements) as having an non-determiner function, and when can we posit a second, post-head determiner slot? This of course depends on the exact function of the modifiers in post-head position, which can only be decided for each language individually, following a detailed study of NPs. For some languages, it seems that the function of the post-head demonstrative is still determiner-like: their use is associated with certain discourse contexts, which points to a function similar to the 'topic determiners' Stirling & Baker (2007) described (cf. chapter 3, section 1.2). In Wardaman, for instance, the post-head demonstrative is associated with a shift in participants (Merlan 1994: 245). Other possible reasons to posit a second determiner slot could be a clear, systematic distribution between both determiner positions in terms of use (as argued for Umpila/Kuuku Ya'u by Hill [2015]), or a functional similarity between the two slots.

c. *nana* *wurren* *yijad*
 that.ABS child.ABS big.ABS
 'the big child'

d. ***mernden*** ***nana*** *dimana-warra-yi* *Ø-we-ndi*
 white.ABS   that.ABS horse-having-ADV 3SG-fall-PST
 'that whitefella fell down with his horse'

4.2. Languages without a determiner slot

There is a group of 25 languages that do show at least some evidence against a determiner slot. An overview is given in table 17 (to be found at the end of this chapter, p. 225); see also map 12 above. These languages are mainly situated in the north-west of Australia (including several Ngumpin-Yapa, Mindi and Gunwinyguan languages – though not all) and in New South Wales. The group mostly consists of languages where all types of modifiers can occur on either side of the head.

In six of these languages, modifiers with determining functions (such as demonstratives) are not clearly delineated from other modifiers and do not necessarily occur at the edge, i.e. they violate both of the syntagmatic criteria discussed in section 2. In other words, while there may be elements that mark identifiability, they do not coalesce into a single morphosyntactic slot or category. An example is Ngan'gityemerri / Ngan'gikurunggurr, in which the NP shows a "loose ordering of modifiers" following a fixed-initial head (see the NP template in (5-49a)) (Reid 1997: 167). For instance, an adjective and a demonstrative can occur in either order following the head, including a non-edge position for the demonstrative (5-49b-c). A similar example was given in (5-6) above for Jaminjung.

(5-49) Ngan'gityemerri / Ngan'gikurunggurr (Reid 1990: 291; 1997: 167, 168, 201)

a. Template (W):
 generic – specific – modifier(s)

b. *mi-menem*   *yerr=syari* *yerr=kinyi*[98]
 VE-billygoat.plum TREE=dry TREE=this
 'this dry billygoat plum tree'

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[98] See chapter 1, section 6, example (1-37) on the variable gender agreement between head and modifiers in this example.

c. *mi-menem*   *yerr=kinyi*   *yerr=syari*   *yubu-ket-Ø*
    VE-billygoat.plum   TREE=this   TREE=dry   2SG.S:AUX-cut-IMP
    'Chop down this withered billygoat plum tree!'

The other 19 languages in this group also show flexible word order for all modifiers, but there is limited or no information on multiple-word NPs.[99] In Garrwa, for instance, all types of modifiers are flexible w.r.t. the head (Mushin 2012: 103-104, 256-257, examples; see also the discussion in chapter 4, section 3.1.3). Apart from a few examples, no information is available on the relative order of modifiers. There is, however, a clear preference for demonstratives and possessive pronouns to occur in initial position, but this is analysed as a pragmatic tendency rather than a syntactic one (Mushin p.c.). An alternative analysis, viz. that there is an initial determiner slot and that its typical fillers can occasionally occur in another modifier position, also seems plausible, but needs more evidence.

5. Conclusion

This study has identified a determiner slot or zone in at most 50 Australian languages (with less evidence for 21) out of my total sample of 100 languages. This determiner slot/zone is manifested in four different ways, each showing edge position, and (mostly) clear delimitation from other modifiers. We speak of a 'determiner zone' when determiners co-occur, which creates determiner complexes. In most languages, this determiner slot or zone is optional, in the sense that bare nouns can be used for all values in the system (e.g. definite or indefinite, specific or non-specific).

The function of the elements occurring in the determiner slot can broadly be described as 'marking the identifiability status of the referent'. There are a few elements in the sample which seem to encode only that, and are specialised in this slot, such as the article in Marra. Most other elements, however, encode other things as well. Accordingly, they can occur either as determiner or as another type modifier (or even as head), thus profiling or backgrounding the feature of identifiability. Preferences vary: some elements, such as demonstratives or personal pronouns, are more typically used as determiners, with an inherently more prominent feature of

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[99] For some languages, a few examples of multiple-word NPs are attested, showing the demonstrative further from the head than the adjective, or a combination of a demonstrative and a possessive pronoun as modifiers, but the evidence is too limited to properly identify a determiner slot.

'identifiability', while other elements, such as quantifiers, are typically used as non-determiner modifiers, highlighting another feature that is more prominent (such as quantity or quality). Other elements hover in between these two, having more equally distributed features of 'identifiability' and description in their semantics. In any case, what this shows is that in the majority of cases examined in this study, there is no necessary link between categories or parts of speech and determiner slots.

As mentioned in chapter 3, section 1, this many-to-many relation between parts of speech and functions has also been amply demonstrated for other languages, including 'classic' determiner languages like Spanish, English and Swedish (see chapter 3, section 1 for examples). What this analysis has added, however, is a systematic overview of the degree and distribution of flexibility across languages. This overview also included some less typical cases like quantifiers and numerals, which suggests proposals for a general link between determination and quantification (like Davidse 2004) may also be relevant cross-linguistically.

Appendix: Tables

As mentioned in the introduction to Part II, decisions about each individual language are brought together in tables (one for each parameter studied), with reference to the precise part of the sources on which the analysis is based. All of the tables are put together at the end of this chapter, so as not to interrupt the flow of the text.

Table 12: Determiners: languages of type 1

Type 1: determiner(s) – HEAD – modifier(s)		
language	**possible fillers of determiner slot/zone**	**reference**
clear evidence		
Dalabon*	pron, dem, ?num, log	(Cutfield 2011: 50-58, 91-96, 113, 122-123, examples)
Dyirbal	dem, poss *co-occurrence (example): poss – dem*	(Dixon 1972: 60-61, examples)
Gaagudju*	interr-indef, dem, (poss)pron, log *co-occurrence: dem – log*	(Harvey 2002: 316-320)
Limilngan*	interr(-indef), dem, poss, ?num, log	(Harvey 2001: 112-113, examples)
Uradhi	pron, dem, poss/possNP, log *competition & co-occurrence: pron/dem – poss/possNP*	(Crowley 1983: 371, 377, examples)
mixed evidence		
Dhuwal (at least Djapu)	indef, pron, dem, poss, inal.poss, ?num/quant, ?log, ?loc *co-occurrence: pron – dem*	(Morphy 1983: 83-87, examples)
Ndjébbana	interr, pron, ?dem, ?quant, log	(McKay 2000: 293-294, examples)

Table 13: Determiners: languages of type 2

Type 2: determiner(s) – modifier(s) – HEAD – modifier(s)		
language	**possible fillers of determiner slot/zone**	**reference**
clear evidence		
Gooniyandi*	indef, pron, dem, poss/possNP, num, indef-log, NP-ABL *co-occurrence: any – indef-log*	(McGregor 1990: 253-276)
Martuthunira*	?interr-indef, dem, poss, log	(Dench 1994: 189-193, examples)
Mawng*	?interr, pron, dem *co-occurrence: pron – dem or reverse*	(Forrester 2015: 45)
Mayi	interr, pron, dem, ?num *competition: pron / dem / interr*	(Breen 1981b: 63)
Nyulnyul*	interr, pron, dem, poss, log *co-occurrence: pron or dem – log*	(McGregor 2011: 399-413)
Panyjima*	dem, ?num, ?log *co-occurrence: dem – num or log*	(Dench 1991: 186)
Tiwi*	pron, dem, poss/possNP, ?quant/num, log, 'definites' *co-occurrence: log – def – dem – quant/num/log*	(Lee 1987: 221-230)
more limited or mixed evidence		
Biri	interr, dem, ?quant	(Terrill 1998: 29, 45-46, examples)
Bundjalung	dem, poss, ?num, log *co-occurrence: dem(VIS) – dem (NVIS); dem – poss (ambiguous example of reverse order)*	(Sharpe 2005: 98, examples)
Gathang	pron, dem, poss	(Lissarrague 2010: 39, 103-105, examples)
Mangarrayi	interr-indef, dem, poss (but rarely used)	(Merlan 1989: 29-30, 51, examples)

Nhanda	dem, ?poss	(Blevins 2001: 77, 83, examples)
Wadjiginy	indef, pron, dem	(Tryon 1974: 209; Ford 1990: examples)
Yanyuwa	interr, pron, dem, ?poss, log *co-occurrence: dem – log – poss;* *competition: dem / poss*	(Kirton 1971: 10, examples; Kirton & Charlie 1996: examples)
Yindjibarndi	interr(-indef), dem, num	(Wordick 1982: 160, examples)

Table 14: Determiners: languages of type 3

Type 3: determiner(s) – HEAD – modifier(s) – determiner(s)		
language	**possible fillers of determiner slot/zone**	**reference**
clear evidence		
Arabana/ Wangkangurru	interr(-indef?) (only initial), pron, dem, poss	(Hercus 1994: 284, examples)
Diyari	interr-indef (only initial), pron(-deictic), poss/possNP, loc *co-occurrence (initial): pron(-deictic) – poss/possNP*	(Austin 2011: 100, examples)
Djabugay	dem, poss, ?num	(Patz 1991: examples)
Guugu Yimidhirr	pron, dem, poss, quant, log *co-occurrence (initial): pron – any*	(Haviland 1979: 104, examples)
Kuku Yalanji	interr-indef, pron (only initial), dem, poss, ?quant/num	(Patz 2002: 119-121, 202, examples)
Matngele	dem *(note: position poss unknown)*	(Zandvoort 1999: examples)
Paakantyi	interr-indef (only initial), dem, poss *! modifiers pre-head: determiner(s) – modifier(s) – head – determiner(s)*	(Hercus 1982: 98-101, examples)
Umpila / Kuuku Ya'u *	?interr-indef, pron, dem, poss, quant, log *co-occurrence (initial): pron – dem – quant; competition : poss / rest*	(Hill 2015)
Worrorra	pron, dem, poss *co-occurrence (examples): dem & poss: one in each slot (either way), ana dem – def dem – head, def dem – head – contextual dem*	(Clendon 2000, 2014: examples)
Yandruwandha	interr(-indef) (only initial), pron(-deictic), poss	(Breen 2004a: 47, 67-68, examples)

Yir Yoront	pron, dem	(Alpher 1973: 281-289, examples)
	most common co-occurrence: head – dem – pron	

more limited or mixed evidence		
Alawa	dem, poss (only final)	(Sharpe 1972: examples)
	! modifiers pre-head	
Anguthimri	pron (only initial), dem	(Crowley 1981: 162, 178, examples)
	co-occurrence (examples): pron – dem – head, pron – head – dem	
Duungidjawu	interr-indef (only initial), pron (only initial), dem, poss, ?num	(Kite & Wurm 2004: 95-96, examples)
	co-occurrence (examples): head – dem – poss, 'one' – dem – head	
Emmi	interr (only initial), dem, ?compound modifier containing numeral	(Ford 1998: 138, 148, examples)
Nyungar*	dem(=pron) (only final), poss (only initial)	(Douglas 1976: 44-45)
Wajarri	?pron (only initial), dem (only final), poss,[100] possNP (only initial), quant	(Douglas 1981: 240-244, examples)
	co-occurrence: poss – quant (initial), quant – dem (final)	
Yalarnnga	interr (only initial), pron (only initial), dem, poss, num (only initial)	(Breen & Blake 2007: 57-58, examples)
	co-occurrence (examples): dem – poss – head, dem – num – head	
	<u>note:</u> position of A uncertain; only one example of adnominal use, Blake p.c.	

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[100] The status of the possessive pronoun is not entirely clear: the NP template in Douglas (1981: 241) suggests that the possessive only occurs in initial position and together with the head noun forms the head of the NP. However, some examples have also been found of a possessive pronoun following the head noun. The categorisation of Wajarri as a type 3 language depends on how the possessive pronoun is analysed: if it has a determiner function, we have an initial determiner slot (which can, incidentally, also include a quantifier), in addition to a final slot containing a demonstrative and possibly also a possessive pronoun.

Table 15: Determiners: languages of type 4

Type 4: HEAD – modifier(s)…determiner(s) OR determiner(s) … modifier(s) – HEAD			
language	**position head**	**possible fillers of determiner slot/zone**	**reference**
clear evidence			
Arrernte	initial	ʔinterr, pron, dem, ʔquant, ʔindef 'one' *co-occurrence: ʔquant – dem – pron (cut-off point mod vs. det unknown)*	(Wilkins 1989: 102-103)
Kayardild*	final[101]	interr, indef, pron, dem, poss/possNP, log, compass *co-occurrence: dem – compass, 'same'*	(Evans 1995: 235-241; Round 2013: 133-135)
Kuuk Thaayorre	initial	interr-indef, dem (pron or adnom), ʔposs, ʔquant *co-occurrence: poss – quant – dem.pron – interr-indef – adnom.dem (cut-off point mod vs. det unknown)*	(Gaby 2006: 297-298)
Lardil	final	ʔinterr, ʔpron, dem, ʔquant *(cut-off point mod vs. det unknown)*	(Klokeid 1976: 11, examples)
Marrithiyel	initial	dem, poss, ʔnum *competition & co-occurrence: num – dem/poss or reverse*	(Green 1997: 246)
Umpithamu*	initial	pron, poss *competition & co-occurrence: num – poss/pron (cut-off point mod vs. det unknown)*	(Verstraete 2010)

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[101] Round (2013: 133-135) and Evans (1995: 235) differ in their analysis of the Kayardild NP. Evans proposes a post-head modifier, which Round (2013: 135) discards because it "fails to restrict the function of the nominal word which fills it." In both analyses, there is a clear initial determiner slot.

more limited or mixed evidence			
Kala Lagaw Ya	final (usually)	pron, dem, poss, ?num *co-occurrence: pron – dem or reverse, dem – poss - ?num* *(cut-off point mod vs. det unknown)*	(Ford & Ober 1987: 10; Ford & Ober 1991: 124-126; Stirling 2008: 177; examples throughout all sources)
Kugu Nganhcara	initial	?interr-indef, ?pron, dem, ?poss, ?poss/COM/PRIV.NP, ?quant *co-occurrence: quant – poss/COM/PRIV NP- dem*	(Smith & Johnson 2000: 419-421, examples)
Oykangand	initial	?pron, dem, poss	(Hamilton 1996: 2, 6; Sommer 1970: examples)
Yingkarta*	final (usually)	pron, dem, poss	(Dench 1998 : 50-51)

Table 16: Determiners: languages with mixed evidence

Fixed determiner slot for one element			
Bininj Gun-wok	indef 'one' *(cf. also table 17 below)*	initial	(Evans 2003a: 243-244, examples)
Burarra	interr, pron	initial	(Green 1987: 22, examples; Carew p.c.)
Djinang/ Djinba	pron note: Possibly also the demonstrative, as it has a tendency to precede the head	initial	(Waters 1989: 195-196)
Giimbiyu	interr	initial	(Campbell 2006: 53, examples)
Jaru	interr note: Possibly also dem and pron, as they prefer to precede the head	initial	(Tsunoda 1981: 95, p.c.)
Marra	article	initial	(Heath 1981: 64, 290)
Ungarinyin	interr, anaphoric pron note: The anaphoric pronoun rarely precedes the head noun; this occurs with a highlighting function (Spronck 2015: 175). Spronck (2015: 167-168; 175-176) also identifies certain 'determiner constructions', which are combinations of determining elements that together have specific discourse functions	final	(Rumsey 1982: 58, 138; Spronck 2015: 37-38, 166-168, 175-176, examples, p.c.)

Wambaya	interr-indef, pron	initial	(Nordlinger 1998:
	<u>note:</u> The personal pronoun can also		130-136, examples)
	switch position with the initial		
	demonstrative. The other modifiers		
	can precede or follow the head. When		
	they precede the head, they have a		
	fixed order: dem – poss.pron – num –		
	A, which reminds us of the languages		
	of type 4 (i.e. with an initial determiner		
	slot). It is unclear how to analyse the		
	post-head modifier if we would want		
	to maintain the type 4 analysis.		

Other mixed evidence

Pitta-Pitta	<u>Template (W+E):</u>	(Blake 1979: 214,
	head – A;	p.c.)
	poss – head (or head – poss);	
	head – pron (or pron – head)	
	<u>Potential determiner slot:</u>	
	Type 3 with poss and pron as fillers (each	
	having a preferred position)	
	- <u>Evidence in favour:</u>	
	Delimited from A in the sense that they	
	are flexible, while A (possibly) have a	
	fixed order.	
	- <u>Evidence against determiner slot:</u>	
	No information about edge position;	
	limited information on position of A	
	(possibly also flexible)	

Wardaman	<u>Template (W+E):</u> dem/poss – A – N – A; N – dem/poss; interr – N; num – N or N – num <u>Potential determiner slot:</u> Variant on type 3 with dem and poss as fillers - <u>Evidence in favour of determiner slot:</u> Edge position for dem / poss - <u>Evidence against determiner slot:</u> All types of modifiers flexible (i.e. no clear delineation)	(Merlan 1994: 227-234, examples)
Yankunytjatjara	<u>Template (W+E):</u> dem – generic – dem – specific – descriptive A(s) – quant – def – dem; poss – N or N – poss; non-attributive modifier – N ('syntactic compound'); def – pron(head); N – interr <u>Potential determiner slot:</u> Type 3 with dem, poss and def (pron) as fillers - <u>Evidence in favour of determiner slot:</u> Edge position; clear delineation from other modifiers - <u>Evidence against determiner slot:</u> Dem can also occur immediately following the generic noun (but there is a functional difference, see table 6)	(Goddard 1985: 47, 49, 55-56, 60, examples)
Yawuru	<u>Template (W+E):</u> pers.pron – N ("always") dem – N ("usually") N – poss.pron ("almost always")	(Hosokawa 1991: 80, 443, 472, 491, 740, examples)

A – N or N – A

interr – N

Potential determiner slot:

Type 2 (with pron, dem and rarely poss as fillers, and post-head elements as qualifiers) OR variant on type 3 (with pron, dem and poss as fillers, having different preferences for a particular determiner slot)

- Evidence in favour of determiner slot: Determining elements seem to be generally more fixed than adjectives (i.e. there is some delineation)

- Evidence against determiner slot: Most types of modifiers flexible; no information on edge position

Yidiny	Template (W): interr-indef – N; poss – N *(almost always);* dem – N or N – dem or "sometimes between other elements"; N – A/num/log (or num – N *(rare))* Potential determiner slot: Type 1 or type 3 (both with interr-indef, poss, dem and possibly num as fillers) - Evidence in favour of determiner slot: Determining elements delimited from other elements (one can precede the head, the other cannot) - Evidence against determiner slot: No information on edge position, and demonstrative can also occur between other elements	(Dixon1977: 247-249)

<u>Table 17:</u> Determiners: languages with (some) evidence against a determiner slot

Potential determiners can occur between the head and other modifiers	
Bardi	(Bowern 2012: 327-336, 768, p.c.)
	<u>note:</u> Poss always at one of the edges; post-head modifier is non-restrictive or contrastive; poss, dem and pron seem to be in complementary distribution
Bininj Gun-wok	(Evans 2003a: 243-244, examples)
	(cf. also table 16)
Jaminjung	(Schultze-Berndt 2000: 44-45; Schultze-Berndt & Simard 2012: 7)
	<u>note:</u> Dem always precedes other modifiers, most commonly dem – mod – head – mod or head – dem – mod
Muruwari	(Oates 1988: 51, 55, 82, 87-88, examples)
	<u>note:</u> Poss always follows the head noun
Ngan'gityemerri/ Ngan'gikurunggurr	(Reid 1997: 267)
Warrongo	(Tsunoda 2011: 347-352)
All types of modifiers have a flexible position w.r.t. the head, but there is no or limited information on the relative order modifiers	
Bilinarra	(Meakins & Nordlinger 2014: 103-104)
	<u>note:</u> Dem and poss tend to precede the head
Dharrawal / Dharumba / Dhurga / Djirringanj	(Besold 2012: 287-289)
Enindhilyakwa	(van Egmond 212: 303)
Garrwa	(Mushin 2012: 103-104, 256-257, examples)
	<u>note:</u> Dem and poss tend to occur in pre-head position (Mushin 2012: 256-257), and there are some examples showing a dem-A-head, dem-poss-head or poss-dem-head order. All these preferences in word order are not grammatical but pragmatic (Mushin p.c.).
Gumbaynggir	(Eades 1979: 313, examples)
	<u>note:</u> The examples seem to show a tendency for dem, pron and poss to precede the head, and for other modifiers to follow the head

Jingulu	(Pensalfini 2003: examples)
Mathi-Mathi/ Letyi-Letyi / Wati-Wati	(Blake et al. 2011: 79, examples) note: The examples show a strong tendency for dem to occur in pre-head position
Miriwung	(Kofod 1978: 52, examples) note: There is a tendency for dem (examples) and poss (Kofod 1978: 52) to precede the head
Ngiyambaa	(Donaldson 1980: examples) note: Almost all examples show a head-final word order
Nyangumarta	(Sharp 2004: 301-313) note: A functional analysis is made (Sharp 2004: 304-313), but it is not entirely clear whether the functions are associated with a certain modifier slot, as Sharp also mentions that "[i]n this arrangement ordering is not fixed" (2004: 304). In any case, dem usually occur initially, num tend to precede the head, adj and poss tend to follow the head (Sharp 2004: 301, 304), and it is unknown whether pron show a preference for a particular position
Rembarrnga	(Saulwick 2003: 81; McKay 1975: 67-70) note: Tendency for dem to precede head (McKay 1975: 67)
Rimanggudinhma	(Godman 1993: 78)
Walmajarri	(Richards 1979: 99, examples; Hudson 1978: examples)
Wangkajunga	(Jones 2011: 232, 235-240)
Warlpiri	(Hale et al. 1995: 1435)
Warray	(Harvey 1986: 59, 246)
Warumungu	(Simpson 2002: 42, examples)
Wirangu	(Hercus 1999: 81, examples) note: There is a very strong tendency for pron to follow the head (Hercus 1999: 81)
Yuwaalaraay	(Williams 1980: 96-97; Giacon 2014: 428-434)

Table 18: Determiners: identification of determiner slot unknown

Alyawarra	(Yallop 1977: 116-117)
Atynyamathanha	(Schebeck 1974: 61, examples)
Bunganditj	(Blake 2003: 52, examples)
Dharumbal	(Terrill 2002: 48, examples)
Karajarri	(Sands 1989: 65-66)
Malakmalak	(Birk 1976: 146-148; Hoffmann p.c.)
Margany/ Gunya	(Breen 1981a: 335, examples)
Ngarrindjeri	(Yallop 1975: 28; Bannister 2004: 66)
Ritharngu	(Heath 1980: examples)
Tharrgari	(Klokeid 1969: examples)
Umbuygamu	(Sommer 1998: 22, 28; Ogilvie 1994: 39; examples throughout both sources)
Wathawurrung	(Blake 1998 ed.: 84, examples)
Yorta Yorta	(Bowe & Morey 1999: 106, examples)

Conclusion

In this dissertation, I have studied NP structures in Australian languages, based on data from a sample of 100 languages. I have analysed these structures from two different perspectives, each with its own aims and focus: a general survey in Part I, and a more in-depth analysis in Part II.

Part I of the dissertation offered a general survey of NP features, using the Australianist and the general typological literature, as well as data from the grammars of my sample, in order to develop a consolidated account of the literature. My hope is that this survey can serve as a basis for further research for both fieldworkers and typologists. The survey was organised in terms of five basic functional domains, viz. classification, qualification, quantification, determination, and the overall question of NP constituency. For each of these domains, the survey tried to situate the Australian material in a broader typological context, bring out the main lines of research in the available literature, and highlight the most important questions that remain. The survey of classification was the most extensive, as this is the aspect of NP structure that has been studied most intensively in the Australian literature. Even here, however, there are a few questions that remain, most prominently the syntactic analysis of generic-specific constructions, and the role of class variation and perspectivisation in noun class systems. The surveys of qualification and quantification were somewhat less extensive, focusing mainly on the question of word class status for qualification, and number marking for quantification, the two issues that have received most attention in the literature. Some of the questions to come out of these surveys include the relative weight of the various criteria used to posit a separate class of adjectives, the delimitation between syntactic qualification and compounding, and the relative lack of attention to semantically more specific means of quantification, like quantifiers and numerals. The surveys of determination and NP constituency were the briefest, bringing to light the largest gaps in the literature. Determination is only rarely discussed in the Australianist literature, especially as concerns the syntactic status of determiners, and NP constituency, while frequently mentioned, has not really been tested beyond a handful of languages.

Part II of the dissertation presented a more in-depth analysis of the two major questions to come out of the survey. Chapter 4 took up the question of (the lack of)

NP constituency, which featured prominently in both the theoretical and typological literature, especially in relation to Australian languages. I used a set of concrete criteria for constituency, like word order, locus of case marking, diagnostic slots and prosody, to show that there is no strong evidence against NP constituency in my sample; in fact, about two thirds of the language show clear evidence in favour of NP constituency. More interestingly, the results also show that the other languages, which have flexible order of nominal elements and thus seem to conform to received ideas about absence of NPs, do not in fact lack NP constituents completely. Most of these languages do allow NP construal, for instance when occurring in diagnostic slots, with phrasal marking, or in other specific cases (e.g. with particular determiners). These results led to the conclusion that it may be more interesting to investigate where and how languages allow NP construal, than to categorise entire languages according to a simple yes-no distinction. This idea was also applied to the analysis of discontinuous structures, which we argued are a separate construction type, in addition to other types of construal a language may have available. Chapter 5, finally, investigated the syntactic status of determining elements. I used a combination of syntagmatic and paradigmatic parameters to show that a determiner slot can be identified in about half of the languages of the sample (manifested in four ways), while there is evidence against the presence of a determiner slot in about a quarter of the languages. For the languages that have determiner slots, I also surveyed the types of elements that can occur in such a slot. These elements are often not specialised, but tend to occur both as determiner and as other type of modifier (e.g. a qualifier or number marker). This can be linked to their semantics: they often encode not only a feature of identifiability, but other features as well, like number, possession or deictic information. Each of these features can be highlighted when occurring in a particular slot. This part of the analysis also brought to attention some elements that are somewhat under-studied as determiners, like personal pronouns, or less expected in determiner uses, like quantifiers.

The analysis in this dissertation has also raised a number of questions for further research. A first set of questions concerns the domains that I have discussed in the survey but not analysed in greater detail, especially qualification and quantification. Some specific questions that need further research here concern the status of word classes, and the relation between word class and function in the NP. It is clear from a number of individual grammars that there is no fixed or one-to-one relation between word class and function – as also reflected in the analysis in terms of functional slots

in a number of grammars (see chapter 4, section 3.1). For instance, other elements than adjectives may function as qualifiers (e.g. possessives), and adjectives may also have another function than qualification (e.g. certain adjectives can be used as quantifiers). It is still unclear, however, how widespread such class-function flexibility is, how it patterns across functional domains, and where the Australian patterns stand in a broader typological perspective. An additional question concerns the expansion of the dataset to include complex NPs. The analysis in this dissertation was limited to simple NPs, but complex NPs invite a whole range of new questions, like what the semantic range of embedded NPs is, how to delimit these from apparently similar constructions (like secondary predication), and especially also what this tells us about the status of NPs. I have briefly commented on adjective and quantifier phrases in chapter 2, but other types of complex NPs are also attested in Australian languages, e.g. embedded NPs with adnominal case-marking (see e.g. Dench & Evans 1988), different types of complex possessive structures, and inclusory constructions (Singer 2001). The availability of complex NPs can also be used in extending arguments about NP constituency (see chapter 4).

Another question that has not been touched upon yet concerns the link between patterns of determination and patterns of constituency. There are several suggestions in the literature that there is such a connection, from different theoretical traditions. From a generative perspective, for instance, Gil (1987) argues that 'configurational' languages (e.g. with a fixed NP-internal word order) have obligatory marking of definiteness, while 'non-configurational' languages (e.g. with flexible NP-internal word order) do not have such obligatory marking (see also Lyons [1999: 154-156] for a comment on this). From a constructional and diachronic perspective, Himmelmann (1997: 156) argues that languages with NPs with looser internal structures do not have strongly grammaticalised determiners ("D-elements"), but not the other way round – i.e. languages with clearly structured NPs do not necessarily have grammaticalised determiners. Building on these ideas, Schultze-Berndt & Simard (2012: 1025) also link the absence of obligatory determiners (especially definite articles) in a particular language to the availability of discontinuous structures in the same language. Focusing on Himmelmann's hypothesis, a quick comparison between the results of chapters 4 and 5 shows that it does seem to largely hold for the languages of the sample. For most languages with some evidence against NP constituency (i.e. with flexible word order), no determiner slot (and accordingly no specialised determiners) could be identified, whereas languages with clear evidence in favour of NP constituency

include both languages with a clear determiner slot and languages without one. Obviously, as amply demonstrated in chapter 5, the presence of a determiner slot in a particular language does not necessarily imply that this language has specialised determiners (i.e. there is no one-on-one relation between function and class). On the basis of my data, I can only point out some cases of specialised, and thus more grammaticalised, determiners. Personal pronouns in adnominal use, for instance, are almost always specialised in the determiner slot in languages which have one. In some languages, such pronouns even show further signs of grammaticalisation, like semantic bleaching (originally '3sg' forms are used for different number values), semantic generalisation (both animate and inanimate referents are allowed), and/or paradigmatisation (the use of the pronominal determiner is obligatory in specific contexts, and its absence is a paradigmatic choice) (Louagie & Verstraete [2015: 178-183]; see chapter 5, section 3.1 for an example from Nyulnyul). Having said this, there are also some interesting cases which at first sight seem to contradict Himmelmann's hypothesis. Some languages with good evidence against NP constituency (viz. flexible order in the NE) do seem to have determiners which are grammaticalised to some extent, in that they are the only elements to have a fixed position in the NE: these cases include the article in Marra (see chapter 5, sections 3.1 and 4.1), the third person pronoun in Wambaya (see table 16), or the indefinite 'one' in Bininj Gun-wok (see chapter 5, sections 3.6 and 4.1). However, in my analysis, these are not really exceptions to the hypothesis. It is important to keep in mind that NP constituency is not an all-or-nothing phenomenon, and interestingly, this seems to be true for determiner slots as well: a language like Bininj Gun-wok was analysed as allowing NP construal only in marginal ways, one of which involves precisely a determiner slot (viz. with an indefinite 'one'). These are of course only first impressions, and this is a question that needs much more work.

In addition to typological questions, the analysis also raises a number of questions that require other methods, specifically discourse-based studies of individual languages. This is especially the case for further study of determination and NP constituency. First, as already mentioned, our analysis of NP constituency led to the idea that it may be more interesting to typologise languages on the basis of where and how they allow NP construal, than on the basis of its mere presence or absence. In this analysis, we proposed a rough typology of three types (simply called A-B-C, see chapter 4): two extremes, one with default NP construal and one with no or only marginal NP construal, and a third type in the middle. This is of course just a starting

point, based on secondary sources (grammars) rather than a direct analysis of primary materials (texts). In order to develop a more fine-grained typology, we would have to focus on individual languages, drawing up inventories of available construals in the nominal domain and analysing corpora of texts to determine how and where each construal is used, and then bring together the results across languages. We have already hinted at a range of potential construals in chapters 4 and 5, such as classic NP constructions, specific determiner constructions, discontinuous structures, and motivated alternations between phrasal and word marking. Other relevant construals include motivated alternations between word orders, dislocated nominal expressions, repetitions, and ellipsis. In addition, structures with different types of heads also need to be taken into account: compare, for instance, Hill's (2015) suggestion that different types of heads prefer different types of modifiers in Umpila. Not all languages will have the same range of construals available, and even if they do, they may be implemented quite differently in discourse. By exploring these questions, we could develop a more fine-grained typology of NP structures, based on what construals languages have available and how these carve up the nominal domain.

A second question that requires further discourse work concerns the semantics of determiners. So far, I have defined this quite broadly as 'marking the identifiability status of the referent' (following the general literature on this topic), and I have presented some general ideas about the semantics of individual determining elements, and how this affects their use as a determiner or as another type of modifier. Individual grammars provide a range of semantic descriptions, however, and there are also some general ideas about semantically distinct classes of determiners (like Stirling & Baker's [2008] 'topic determiner'). Discourse-based work is required to pinpoint the precise semantics of determiners in individual languages, and to determine how this fits in with larger categories of determines. This type of work has been done for a number of languages, as mentioned in chapter 5, but for many others it has not, and it would be interesting to see whether the analyses that are available in the literature are more broadly applicable across the sample.

Finally, there is also the question in how far our findings in the domains of NP constituency and determination can be extrapolated outside Australia. For the question of constituency, as mentioned in chapter 4, we believe that an alternative typology, based on types and uses of nominal construal rather than its simple presence or absence, can (and should) also be applied to languages outside Australia. There are some indications that this may be a good way to go. For instance, the idea that certain

types of modifiers tend to be more tightly 'integrated' in the NP than others has been established for a range of languages, either depending on the type of modifier (as in several South-American languages [Krasnoukhova 2012: 177-181], see chapter 3, section 2.1), or on its position relative to its semantic head (as in Dutch, where post-head modifiers are argued to be syntactically independent [Van de Velde 2009: 51-129]). Another relevant point is the specific functional motivation of discontinuous structures, which has been demonstrated for several languages around the world (e.g. Polish [Siewierska 1984], see chapter 3, section 2.1; Fox [Dahlstrom 1987], Swampy Cree [Reinholtz 1999: 208], and Croatian [Fanselow & Ćavar 2002], all cited in [Schultze-Berndt & Simard 2012: 1038]; see also [Rijkhoff 2002: 258-259] for more references). In chapter 5, we discussed the absence of a one-to-one relation between word class and function in the domain of determiners. Again, this is cross-linguistically quite common. Possessives are a particularly well-known case; they can have qualifier, determiner or (sub)classifier functions in different languages (see chapter 3, section 1.1). There are other examples as well, like certain types of adjectives that have (or have acquired) determiner functions (e.g. Davidse et al. 2008; Van de Velde 2010). Given that languages differ quite widely in terms of the organisation of word classes (see Hengeveld et al. [2004] and Hengeveld & Rijkhoff [2005]; see chapter 2, section 1), the extent to which they allow flexibility of word classes across different functions in the NP presumably also differs quite widely. From a more theoretical perspective, this also ties in with general questions about the relation between constructions and word classes, as discussed in various types of construction grammar (for instance Croft 2001).

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