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Abstract:

This paper examines whether Australian languages generally lack clear noun phrase structures, as has sometimes been argued in the literature. We break up the notion of NP constituency into a set of concrete typological parameters, and analyse these across a sample of 100 languages, representing a significant portion of diversity on the Australian continent. We show that there is little evidence to support general ideas about the absence of NP structures, and we argue that it makes more sense to typologize languages on the basis of where and how they allow 'classic' NP construal, and how this fits into the broader range of construals in the nominal domain.

Keywords: Australian languages, noun phrase structures, constituency

Noun phrase constituency in Australian languages: A typological study

Dana Louagie & Jean-Christophe Verstraete

University of Leuven

1. Introduction

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 (e.g. Blake 1983; Heath 1986; Harvey 2001: 112; Evans 2003a: 227-233; Campbell 2006: 57; see also McGregor 1997: 84; Cutfield 2011: §3.3.1; 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 (1)-(3) below.

(1) Bininj Gun-wok (Gunwinyguan)

   a.   *"wanjh,* **an-dehne**   **gukku**   *nga-bo-bawo-n*   *bedberre munguih-munguih*

      well   VE-that   water   I-liquid-leave-NPST   for.them   for.ever

      'Yeah, I'll leave that water for them forever…' (Evans 2003a: 707)

   b.   **gun-barlkbu**   **an-ege**   *bi-rrerlme-ng*

      IV-digging.stick   VE-that   3/3H.P-throw-PST.PFV

      'She threw that digging stick at him.' (207)

(2) Warlpiri (Ngumpin-Yapa)

    wawirri   *kapi-rna panti-rni*   **yalumpu**

    kangaroo   AUX   spear-NPST   that

    'I will spear that kangaroo.' (Hale 1983: 6)

(3) Kalkatungu (Kalkatungic)

   a. ***cipa-yi***   ***ṯuku-yu***   ***yaun-tu***   *yaṉi*   *icayi*

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

       'This big dog bit/bites the white man.' (Blake 1983: 45; cited in Nordlinger 2014:

       229)

   b. ***cipa-yi ṯuku-yu*** *yaṉi icayi* ***yaun-tu***

   c. ***ṯuku-yu cipa-yi*** *icayi yaṉi* ***yaun-tu***

   d. ***yaun-tu cipa-yi ṯuku-yu*** *icayi yaṉi*

   e. ***cipa-yi*** *icayi yaṉi* ***ṯuku-yu yaun-tu***

   f. *yaṉi icayi* ***cipa-yi yaun-tu ṯuku-yu***

The two Bininj Gun-wok structures in (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 (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 (3), which allows at least six different structures for a demonstrative, adjective[1] 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 (1)-(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).

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[1] This paper uses the term 'adjective' as comparative concept (cf. Haspelmath 2010), without making any assumptions about the morphosyntactic status of word classes in individual languages. For many Australian languages there is no clear morphosyntactic evidence for distinct 'noun' and 'adjective' classes, but there is one 'nominal' word class instead (e.g. Nordlinger 2014: 237-238). Even so, most grammars do distinguish 'adjective-like' or 'descriptive' nominals from others in their discussion of nominal expressions.

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; see also Nordlinger 2014 for a recent overview), linking the issue of NP constituency with aspects of clause structure like null anaphora and free word order. The same literature 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 study 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 (following the basic iconicity principle assumed to underlie constituency, see for instance Langacker 1997). We try to answer this question by addressing the two main problems in the existing literature. On the one hand, we try to 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 checking these parameters in a large sample of 100 Australian languages (65 Pama-Nyungan and 35 from the various non-Pama-Nyungan families), which represents a significant portion of diversity on the Australian continent. The results of this study, we argue, 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 grammatical 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 (e.g. Nordlinger 1998: 131 on Wambaya; Gaby 2006: 277 on Kuuk Thaayorre; Hill ms on Umpila). More generally, our 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 generalizations about NP structure in Australian languages for granted.

The rest of this paper is structured as follows. Section 2 discusses the make-up of the sample we use in this study. Section 3 presents the set of parameters we use for determining constituency status, discussing the rationale behind each parameter. Section 3.1 discusses external parameters, which define NP constituency in terms of its interface with clause structure, e.g. the locus of case marking or diagnostic slots in clausal morphosyntax, while Section 3.2. discusses NP-internal parameters like word order and contiguity. Section 4 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 5 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 6 wraps up with some conclusions, including the argument that it makes more sense to typologize 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. <u>Sample</u>

The sample used for this study consists of 100 Australian languages, which represents about 40% of all Australian languages (on conservative counts of about 240 languages at first contact[2]; see Dixon 2002: 5-7). About 180 languages of these 240 belong to the Pama-Nyungan family, covering most of the continent, while the other 60 belong to several families commonly known as non-Pama-Nyungan, spoken in the country's north and northwest. This

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[2] There are also more recent counts, like Bowern (2012b), who lists 391 languages but is probably more liberal in distinguishing languages (see comments in Bowern 2011). On this count, our sample would represent about 25 % of all Australian languages.

genetic diversity is represented in the sample: we included 65 Pama-Nyungan languages, covering most subgroups (and geographical areas), as well as 35 non-Pama-Nyungan languages, representing almost all families and isolates.

An overview of the sample can be found in Table 1, showing the genetic classification and the grammatical descriptions used for each language. For the Pama-Nyungan languages, both the well-established lower-level subgroups and the higher-level subgroups proposed by Bowern & Atkinson (2012) are mentioned. The genetic classification of the non-Pama-Nyungan languages is based on Evans (2003b), except for Enindhilyakwa, which has been re-classified as Gunwinyguan, following van Egmond (2012).

Table 1 here

3. **Parameters**

As mentioned in the introduction, the aim of this paper is to study NP constituency in its own right, independently from the more general theoretical question of non-configurationality (see also Nordlinger 2014). 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 3.1, 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 3.2, identify a constituent in terms of its internal structure, e.g. the relative order of nominal elements or the contiguity of these elements.

Before we move on to the analysis, a terminological note is in order. Given that constituency is the object of our analysis, we cannot simply use the term 'noun phrase' (NP) for the entities we investigate. Henceforth, therefore, we use the general term 'nominal expression' (NE) to refer to a group of elements in the nominal domain that belong together semantically, regardless of whether they form a constituent (i.e. a syntactic unit) or not (following the terminological convention used in Himmelmann 1997). Whenever we need to be more specific, we use the classic term NP ('noun phrase')[3] for nominal expressions that show evidence for syntactic constituency.

3.1. External parameters

External criteria for constituency focus on the interaction of a constituent with the structure of the clause: where case markers are located (§3.1.1), where nominal expressions can occur relative to diagnostic slots for constituency (§3.1.2), and how prosody suggests unithood (§3.1.3). 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.

3.1.1. *Locus of case marking*

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[3] In this study, we will not go into the question whether nominal expressions are better analysed as DPs (determiner phrases) or NPs. Our focus is on syntactic unithood; a study of headedness would go beyond the scope of this paper.

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 our sample, we find 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 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), thus showing that the nominal and its modifier can be analysed as a single NP, with the modifier forming its right edge.

(4) Yandruwandha (Karnic)

   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.' (Breen 2004a: 77)

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 (3) above from Kalkatungu (not in our sample, but see footnote 15), repeated below as (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.

(5) Kalkatungu (Kalkatungic)

cipa-yi	*ṯuku-yu*	*yaun-tu*	*yaɲi*	*icayi*
this-ERG	dog-ERG	big-ERG	white-man	bite

'This big dog bit/bites the white man.' (Blake 1983: 45)

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 (6) below. In this language, word order is quite fixed, with modifiers preceding the nominal head, which constitutes independent evidence for constituency (see also in Section 4.1 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.

(6) Yingkarta (Kartu)

kutharra-lu	*mayu-ngku*	*pinyarri-nyi*
two-ERG	child-ERG	fight-PRS

'Two children are fighting.' (Dench 1998: 19)

Next to phrasal marking and word marking, the third option is that case is not marked in nominal expressions 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 (7), although case affixes are available for certain roles[4] (e.g. ablative, purposive or object of hunt; McKay 2000: 155, 191).

(7) Ndjébbana (Maningrida)

karrddjúnja *njana-bá-la-yángaya*

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

'A stingray bit me.' (McKay 2000: 191)

Obviously, 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 4.2. 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 4.

3.1.2. '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

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

only some languages have such slots, but there are some famous cases like Warlpiri, where the verbal auxiliary has a fixed position as 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 (8), the nominal *wawirri* and the demonstrative *yalumpu*, both preceding the second position auxiliary, must be analysed as forming a syntactic unit.

(8) Warlpiri (Ngumpin-Yapa)

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

'I will spear that kangaroo.' (Hale 1983: 6)

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.

3.1.3. 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 5), we will refer to prosodic information whenever it is available.

3.1.4. 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'). While such criteria are often part of the basic toolkit of initial fieldwork, they rarely find their way into grammars[5], which means they are difficult to apply to our sample, and have not been used in this study.

3.2. <u>Internal parameters</u>

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 §3.2.1, and word order, discussed in §3.2.2.

3.2.1. 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 (5) above, and Sections 4.2 and 5 below). When they are not contiguous, however, as in the Garrwa structure in (9) below, this has often been interpreted as evidence

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[5] One grammar in our sample that does at least discuss the criteria, and identifies a number of difficulties with them, is Bowern (2012a: 328-329) on Bardi.

against NP constituency. Thus, for instance, Mushin (2012: 260) argues on the basis of structures like (9) that "the capacity for discontinuity suggests that nominal groups do not constitute a clearly defined syntactic unit."[6]

(9) Garrwa (Garrwan)

nayinda   *langi-na*   **wirringarra**   *badajba=yi*

this   north-ABL   cyclone   come=PST

'This cyclone came from the north.' (Mushin 2012: 259)

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 language cannot be analysed as genuine NPs (see further in Section 5 on this argument). Therefore, we will investigate discontinuity separately in Section 5 below.

3.2.2. Word order

Word order is the most important internal criterion for constituency in this study, 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 (10a) and the structure in (10b).

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[6] 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)

(10) Umpithamu (Middle Paman)

    a.   [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).' (Verstraete ms)

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 will show in Section 4.1 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 (11) below, where the order of the head nominal 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 nominal and the modifier.

(11) Umpila (Middle Paman)

    (Det) (N) (Mod) (Det)

    with Det: ⌈ [(Pron) (Dem) (Quant)] or

           ⌊ [Poss.Pron]

    (Hill ms)

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 (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.

(12) Warrongo (Maric)

  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.' (Tsunoda 2011: 688)

  b. *ngaya*   **bori-Ø**   **ngona-Ø**   **gagal-Ø**   *wajo-n*   *ngaya*

     1SG.ERG   fire-ACC   that-ACC   big-ACC   cook-NFUT   1SG.ERG

     bori-wo   *goyba-lgo*   *yori-Ø*

     fire-DAT   throw-PURP   kangaroo-ACC

     'I made a big fire so that I could throw a kangaroo to the fire.' (596)

  c. **jarribara-Ø**   **yarro-Ø**   **banggo-Ø**

     good-NOM   this-NOM   hollow-NOM

     'This nice hollow.' (348)

3.2.3. Other

Two other criteria that are sometimes mentioned in the literature are gender and number agreement. 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 3.1.1. 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.

3.3. Overview

Table 2 provides an overview of the parameters we will use in our 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.

Table 2 here

4.   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 4.1 and 4.2, we discuss word order and case marking, the two criteria for which we have most information. This is followed by a discussion of prosody and occurrence in diagnostic slots in Sections 4.3 and 4.4. In Section 4.5, 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 5.

4.1. 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 (13a). One function can be realized by elements from different word classes, and elements from one word class can have different functions, like the nominal *nyamani* 'big', which functions as a Quantifier in pre-head position, as illustrated in (13b), or a Qualifier in post-head position, as illustrated in (13c).

(13) Gooniyandi (Bunuban)

    a. (Deictic)^(Quantifier)^(Classifier)^Entity^(Qualifier) (McGregor 1990 : 253)

    b. *nyamani   gamba*

       big   water

'a lot of water' (260)

c. *yoowooloo*   *nyamani*

   man   big

   'a big man' (265)

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. 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 13 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 generalizations allowed by the grammars we use.

Our second methodological note concerns the quality of the data. 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 3.

Overall, we can categorize languages in the sample in terms of three basic types of word order, discussed in Sections 4.1.1-4.1.3 below. At least for the first two types, which together cover 66 languages, patterns of word order provide evidence for NP constituency[7].

Table 3 here

4.1.1. 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 nominal expressions, with distinct templates for NPs with nominal heads, illustrated in (14a-b), and pronominal heads, illustrated in (14c-d).

(14) Kuuk Thaayorre (Southwest Paman)

    a. Nominal head (Gaby 2006: 297-298)

        ((Ngen) (Ngen) (Nspec)) ((Deg) Adj (Deg))* (PosPro) (Quant) (DemPro)

        (IgnPro) (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.' (411)

    c. Pronominal head (297-298)

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[7] Incidentally, most languages of the sample seem to follow general word order tendencies for nominal expressions as discussed in Dryer (2007: 111-113) or Rijkhoff (2002: §10.2.4). 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 [2007: 111-113]). Unfortunately, for many languages limited information is available 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 tendency described above.

PersPro / DemPro/ IgnPro (AdnDem)

d. ***nhul***   ***inh***   *kanpa-tam*   *inh*

3sg(NOM) DEM.SP.PROX first-ABL   DEM.SP.PROX

'She here's the first (born).' (289)

Some of these languages allow a change in word order for emphasis or focus, as in Tiwi, where the head nominal normally occurs in penultimate position, as shown in (15a), but can be fronted for focus or for stylistic effect, as in (15b) (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.

(15) Tiwi (Tiwi)

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

   (Lee 1987: 222)

b. pilayiki   yirrara

   flag(M)   two(M)

   'two flags' (224)

4.1.2. Restricted flexibility

There are 45 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 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 18 languages in the sample. An example is Yingkarta, for which Dench (1998: 50-51) argues that 90% of the NPs follows the pattern in (16a), while there is also a minor pattern illustrated in (16b).

(16) Yingkarta (Kartu)

    a. (Determiner) (Modifier) Head

        Pronoun (Modifier) (Dench 1998: 50-51)

    b. *Wanthawu   yurlu-ja   nyintangu?*

        where   camp-DEF   2SG.GEN

        'Where is your camp?' (50)

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 (15) 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 (16b) 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 shows flexibility of determining elements (such as demonstratives[8]) 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 (17a), where the deictic element can either come at the left edge (17b) or the right edge (17c) of the nominal expression. The same applies to Umpila, as illustrated in in (11) above.

(17) Worrorra (Worroran)

   a. Dem / Poss.Pron – N – A – Dem / Poss.Pron (Clendon 2014: examples)

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

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

      'the big man' (144)

   c. **kanbanerri**   **birdeen-ya**   **aaya**   *rlerlewa*

      crab   small-3SG.M   3SG.M.REF   crawl

      ka-Ø=murrka-rla-eerri

      3SG.M-3=go.to-PST-PROG

      'A little crab went crawling up to him.' (428)

The other subtype has flexibility of adjectives with reference to the head, while determining elements[9] have a fixed position at one of the edges. There are 10 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 3rd person pronoun) have a fixed position at the left edge (Forrester 2015: 45). The flexible position of the adjective is illustrated in (18b).

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[8] 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.
[9] Again, the possessive pronoun usually behaves in the same way as demonstratives, but in some languages, it has a flexible position (like the adjective).

(18) Mawng (Iwaidjan)

a. (art)^(DETERMINER) (art)^(DETERMINER) (art)^(MODIFIER) (art)^HEAD

(art)^(MODIFIER) (Forrester 2015: 45)

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

   DEM.DIST.LL-EMPH1   tiny   creek   little.bit   3LL-flow-PST.CONT

'The small creek was flowing.' (46)

Taken together, this implies that there are 45 languages for which apparent flexibility actually supports NP constituency.

4.1.3. Flexibility

29 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 (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 adjective-like elements and determiner-like 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-categorized 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 2012a: §8.2). At first sight, word order is quite free: all types of modifiers (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 three important qualifications. First, when a modifier follows the nominal head, it has a non-restrictive or contrastive meaning (Bowern 2012a: 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 2012a: 332-333), which delineates the boundaries of the NP. And finally, there is a restriction on the number of modifiers in the NP (Bowern 2012a: 329). These features even lead the author to questioning a 'flat structure' analysis for nominal expressions in Bardi (Bowern 2012a: 329), although we still decide 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 (19), the 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.

(19) Bilinarra (Ngumpin-Yapa)

(modifier) (modifier) head (modifier) (modifier) (Meakins & Nordlinger 2014: 103-104)

4.2. Locus of case marking

This section discusses the locus of case marking in contiguous nominal expressions (see Section 5 on discontinuous structures). As already mentioned, the basic options here are phrasal marking (case marked once in a nominal expression), word marking (case marked for all elements in a nominal expression) 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 4, 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.

Table 4 here

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 (20) below, and 39 that have a choice between phrasal marking and word marking, as illustrated for Wirangu in (21) below.

(20) Yawuru (Nyulnyulan)

    a. *manydya-yi*   *wamba*

       many-DAT   man

    b. **manydya-yi*   *wamba-yi*

       many-DAT   man-DAT

       'to/for many people' (Hosokawa 1991: 81)

(21) Wirangu (Thura-Yura)

    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.' (Hercus 1999: 48)

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[10], 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

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[10] 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).

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 (22).

(22) Gooniyandi (Bunuban)

thaaddi	*nganyi-ngga*	*gardlooni*
mistakenly.believed	I-ERG	I:hit:him

ngooddoo-ngga	***yaangya-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.' (McGregor 1989: 213)

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 nominal expression, as in (23a), but when the nominal expression consists of a demonstrative and a noun, it can also be marked on the initial element or on both elements, as in (23b,c) (Hamilton 1996: 19-20).

(23) Oykangand (Southwest Paman)

a.	*aber*	*unggul-gh*	*uw*
	woman	DEM.DIST-PURP	give

'Give it to that woman there.' (Hamilton 1996: 20)

b. *aber-agh*   *unggul*   *uw*

    woman-PURP   DEM.DIST   give

c. *aber-agh*   *unggul-gh*   *uw*

    woman-PURP   DEM.DIST-PURP   give

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, as shown for Diyari in (24) 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: 48 for Djabugay).

(24) Diyari (Karnic)

a. ***kanku***   ***kundukundu-nthu-yali***   *nganha*   *yakalka-yi*

    boy   cough-PROP-ERG   1SG.ACC   ask-PRS

    'The boy with a cough is asking me.' (Austin 2011: 144)

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' (97)

4.3. Diagnostic slots

At least 14 languages 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 (8) above). Usually, the diagnostic elements are

pronominal markers, but other types also occur, e.g. discourse clitics in Lardil (Klokeid 1976: 261), as illustrated in (25) below for the clitic *thada* 'meanwhile'. An overview can be found in Table 5.

(25) Lardil (Tangkic)

yalange	**wurtuu**	thada	niya	waa
other.LOC	corner.LOC	meanwhile	3SG.NOM	go

'Meanwhile, he went over to another corner.' (Klokeid 1976: 261)

Table 5 here

There are two languages in this set, viz. Wangkajunga and Walmajarri, where the diagnostic element shows variation in position, either following the first constituent or the first word (see Table 5 for more details).[11] Obviously, this implies that the criterion is somewhat weaker here than in the other languages, as it does not invariably identify the first constituent. 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.

4.4. Prosody

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[11] We have found no further claims to this effect in our sample, but there may, in fact, be more languages in the sample that show this variation. There are some examples in Warlpiri (e.g. Swartz 1982: 98, 112), 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). Obviously we only focus on the first set here (see example (25)).

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, for example, "the NP is typically produced under a single intonation contour" (Hill ms), which is taken as criterion for the identification of NPs (Hill ms). 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 intonation contour; (c) a primary stress peak" (Gaby 2006: 278). An overview can be found in Table 6.

Table 6 here

In themselves, the results discussed in the preceding sections are telling: internally, 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 7 provides an overview of the four criteria discussed in the previous sections, organized mainly around word order and locus of case marking, with underlining for presence of diagnostic slots and italics for prosodic evidence.

Table 7 here

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). First off, there is a set of 16 languages 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. Secondly, there is a set of 49 languages 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 28 languages with flexible word order, for which the internal structure does not point towards NP constituency[12]. 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 4.1.2[13]. 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 organize nominal expressions, but NP construal is available at least as an option: through phrasal case marking, via construal in a diagnostic slot, or both[14]. In this sense, NP constituency is not an all-or-nothing phenomenon: some languages have it as the dominant way to organize the nominal domain, while others

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[12] The introduction to this paper 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]).

[13] 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 2012a: 333). In addition, there are several other restrictions on word order flexibility in Bardi nominal expressions (see further in Section 4.1.3 above).

[14] 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 (Gumbaynggirr, 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).

have it as an option available in a few circumstances. In the next section, we will 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 organize nominal expressions.

5. <u>Discontinuous structures</u>

In the previous section, we applied our criteria to 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. 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 (1997) 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 (26), 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 [Hill 2010: 9, pc] and Yuwaalaraay [Williams 1980: 96]). This is illustrated in the Umpila example in (27), where it is difficult to have the two qualifiers 'old' and 'big' in the same NP (as in 27b), and they have to be split over two NPs, as in (27a). 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.

(26) Bilinarra (Ngumpin-Yapa)

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.' (Meakins & Nordlinger 2014: 352)

(27) Umpila (Middle Paman)

a.	kampinu-lu	tha'i-na	pu'ala yilamu/	mukana
	man-ERG	hit-NFUT	drum old	big

'the man hit the big old drum' (Hill 2010: 9)

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

   man-ERG   hit-NFUT   drum old   big

   'the man hit the big old drum' (Hill pc)

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 our 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 generalizations we can make about the nature of discontinuity as found in our 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 generalization 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), and in Gooniyandi, discontinuous NPs "amount to less than 5 per cent of all NPs" (McGregor 2004: 276). 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 (1997, 2004) shows that discontinuity in Gooniyandi is generally restricted to one structure per clause, and that discontinuous structures rarely have more than two words. Our 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 [2012a: §8.3] 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 emphasized, as in the Wambaya example in (28). Other elements that are often split off in instances of discontinuity in the sample are different types of determiners, e.g. demonstratives, as in (29), possessive pronouns, as in (30), and personal pronouns, as in (31).

(28) Wambaya (Mindi)

garngunya	*gin-aji*		*yabu*	*garirda-rdarra*	*garndaugini-ni*
many.II(ACC)	3.SG.M.A-HAB.PST		have	wife.II-GROUP(ACC)	one.I-LOC

'One (man) used to have many wives.' (Nordlinger 1998: 133)

(29) Thargari (Mantharta)

yiṉa   ŋaḍa   muḍuru-ṇi-nʸa   waya

that   I   straight-VBLZR-PST   wire

'I straightened this wire' (Klokeid 1969: 37)

(30) Atynyamathanha (Thura-Yura)

yata   naku-ankataṯu   vanʸtʸuṟu

ground see-PST.III-INS/A   his

'I have seen his ground' (Schebeck 1974: 74, 109)

(31) Yingkarta (Kartu)

pinya-tha   yanma-nu-nyi   muntungu

3SG.NOM-DEF go.IMM.PST-AFF-*nyi*   European

'Them fellas have all gone.' ('That (group of) Europeans has gone.') (Dench 1998: 52)

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 our sample, viz. McGregor (1997) 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 (32) 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 (33).

(32) Jaminjung (Mindi)

bulayi	*yirra-ma-na*	**^*guju~gujugu***	*na *
fly/tent1	PL.EXCL-have-IPFV	PL~big	now

'We had big tents then.' (Schultze-Berndt & Simard 2012: 1038)

(33) Jaminjung (Mindi)

jarndu	*ga-ram*	***luba***	*mangurn=mij!*
boat	3SG-come.PRS	big	white.person=COM

'There comes a big boat with white people!' (Schultze-Berndt & Simard 2012: 1041)

Obviously, we do not have such detailed analyses for many languages in our 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 (2012a: 328-329) associates the use of discontinuous structures with focus in Bardi: in (34), for instance, the contiguous structure in (34b) is pragmatically neutral, while the discontinuous structures in (34a) and (34c) focus on 'two' and on 'fish', respectively.

(34) Bardi (Nyulnyulan)

a. *gooyarra i-na-m-boo-na aarli*

   two 3-TR-PST-spear-REM.PST fish

   'He speared two fish.' (Bowern 2012a: 329)

b. *gooyarra aarli i-na-m-boo-na*

two	fish	3-TR-PST-spear-REM.PST

c. *aarli*   *i-na-m-boo-na*   *gooyarra*

   fish   3-TR-PST-spear-REM.PST   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 (1997), 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[15].

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[15] There is only a small set of languages in our 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 (i), or there may be multiple discontinuous structures in a single clause, as in the Dyirbal example in (ii). Given the nature of the examples, one wonders in how far such structures are attested beyond elicitation.

(i) Jaru (Ngumpin-Yapa)

jalu-ŋgu	*lani-i*	*mawun-du*	*ḏaḏi*	*jambi-gu*
that-ERG	spear-PST	man-ERG	kangaroo	big-ERG

'That big man speared a kangaroo.' (Tsunoda 1981: 94)

(ii) Dyirbal (Herbert River)

a.

bayi	*waŋal*	*baŋul*	*yaṟaŋu*	*bulganu*
there.NOM.I	boomerang.NOM	there-GEN.I	man-GEN	big-GEN.I

baŋgun	*ḏugumbiṟu*	*buṟan*
there.ERG.II	woman-ERG	see-PRS/PST

'woman saw big man's boomerang' (Dixon 1972: 107)

b.

bayi	*yaṟaŋu*	*ḏugumbiṟu*	*buṟan*	*waŋal*
there.NOM.I	man-GEN	woman-ERG	see-PRS/PST	boomerang.NOM

baŋgun	*baŋul*	*bulganu*
there.ERG.II	there-GEN.I	big-GEN.I

'woman saw big man's boomerang' (107)

6. Conclusion

To round off this study, 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-generalization 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 4.5, about two thirds of the languages in our sample show good evidence for NP constituency. In this sense, theoretical or typological work (for instance on non-configurationality) cannot take simple generalizations about NP structure in Australian languages for granted.

Apart from this obvious conclusion, there are some other points that emerge from our 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 the about one third of languages in the sample that seem to conform to received ideas about 'flexible' nominal expressions, NP constituency is not completely absent. As shown in Section 4.5, 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 typologize 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 grammaticization of syntactic structure.[16] 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 typologized 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), 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).

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, 1997) 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

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[16] In other words, the more dominant NP construal is in a language, the more strongly we could regard its NE as grammaticized. 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.

of where Australian languages stand in the typology of nominal construal, and if and how they are really different from other types of languages.

Address for correspondence:

Department of Linguistics

University of Leuven

Blijde Inkomststraat 21, PO Box 3308

3000 Leuven

Belgium

dana.louagie@arts.kuleuven.be

jcv@arts.kuleuven.be

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Abbreviations

Examples are glossed according to the Leipzig Glossing Rules (http://www.eva.mpg.de/lingua/resources/glossing-rules.php). Other glosses used are: I-IV noun classes, AFF affective, C catalyst, CONT continuative, EMPH emphatic, H higher object, IMM immediate, INTERJ interjection, IO indirect object, KIN kin suffix, LL land gender, NE nominal expression, NP noun phrase, MIN minimal, POT potential, PROP proprietive, RDP reduplication, REF contextual deictic, REM remote, SEQ sequential, SP.PROX speaker proximate, SUB subordinate , UNSP unspecified tense, VBD verbid, VBLZR verbalizer, VE vegetable gender.

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Tables

Table 1: Overview of the sample

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 (2010, ms), Thompson (1988)
Kugu Nganhcara	Middle Paman	Northern PN	Smith & Johnson (2000)
Umpithamu	Middle Paman	Northern PN	Verstraete (ms)
Umbuygamu	Lamalamic	Northern PN	Ogilvie (1994), Sommer (1976, 1998)
Rimanggudinhma	Lamalamic	Northern PN	Godman (1993)
Kuuk Thaayorre	Southwest Paman	Northern PN	Gaby (2006)
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	Herbert River	Northern PN	Dixon (1972)
Warrongo	Maric	Northern PN	Tsunoda (2011)
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)
Mayi	Mayi	Northern PN	Breen (1981b)
Duungidjawu	Waka-Kabi	South-Eastern PN	Kite & Wurm (2004)
Gumbaynggirr	Gumbaynggirr	South-Eastern PN	Eades (1979)
Bundjalung	Bandjalangic	South-Eastern PN	Cunningham (1969), Sharpe (2005)
Yuwaalaraay	Central New South Wales	South-Eastern PN	Giacon (2014), Williams (1980)
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/Dji rringanj	Yuin-Kuri	South-Eastern PN	Besold (2012)
Wathawurrung	Kulin	South-Eastern PN	Blake (1998)
Mathi-Mathi /Letyi-Letyi/Wati-Wati	Kulin	South-Eastern PN	Blake et al. (2011)
Yorta Yorta	Eastern Victoria	South-Eastern PN	Bowe & Morey (1999)
Bunganditj	Bunganditj	South-Eastern PN	Blake (2003)
Ngarrindjeri	Lower Murray	South-Eastern PN	Bannister (2004), Yallop (1975)
Arabana/ Wangkangurru	Karnic	Central PN	Hercus (1994)
Pitta-Pitta	Karnic	Central PN	Blake (1979b, pc)
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)
Jaru	Ngumpin-Yapa	Western PN	Tsunoda (1981, pc)
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)
Thargari	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)

Ritharrngu	Yolngu	Western PN	Heath (1980)
Dhuwal (Djapu/ Djamparrpuyngu)	Yolngu	Western PN	Morphy (1983), Wilkinson (1991)
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)
Lardil	Tangkic		Klokeid (1976)
Garrwa	Garrwan		Mushin (2012)
Marra	Marran		Heath (1981)
Alawa	Marran		Sharpe (1972)
Mangarrayi	Marran		Merlan (1989)
Wambaya	Mindi		Nordlinger (1998)
Jingulu	Mindi		Pensalfini (2003)
Jaminjung	Mindi		Schultze-Berndt (2000)
Emmi	Western Daly		Ford (1998)
Marrithiyel	Western Daly		Green (1989)
Matngele	Eastern Daly		Zandvoort (1999)
Ngan'gityemerri/ Ngan'gikurunggurr	Southern Daly		Reid (1990, 1997)
Malakmalak	Northern Daly		Birk (1976), Tryon (1974), Hoffmann (pc)
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		van Egmond (2012)
Bininj Gun-wok	Gunwinyguan		Evans (2003a)
Dalabon	Guwinyguan		Cutfield (2013)
Burarra	Maningrida		Green (1987), Glasgow (1994), Carew (pc)
Ndjébbana	Maningrida		McKay (2000)
Mawng	Iwaidjan		Singer (2006), Forrester (2015)
Gooniyandi	Bunuban		McGregor (1990)
Nyulnyul	Nyulnyulan		McGregor (2011)
Bardi	Nyulnyulan		Bowern (2012a)
Yawuru	Nyulnyulan		Hosokawa (1991)
Worrorra	Worrorran		Clendon (2000, 2014)
Ungarinyin	Worrorran		Rumsey (1982), Spronck (2016, pc)

| Miriwung | Jarrakan | Kofod (1978) |

Table 2: Parameters for constituency

	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 3: Word order (based on word classes). Languages analysed in terms of functional classes in the grammatical descriptions are marked with *.

Fixed order (21 languages)	
Alyawarra	(Yallop 1977: 116-117; no information about longer NEs)
	note: Reverse order of demonstrative possible (Yallop 1977: 112), but no examples found in grammar
Anguthimri	(Crowley 1981: 162, 178; no information about longer NEs)
Arrernte (Mparntwe)	(Wilkins 1989: §3.1)
	note: Some modifiers "more fluid" w.r.t. each other, but no examples found in grammar
Dalabon *	(Cutfield 2013: 51-56, 122-123)
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, examples)
Limilngan *	(Harvey 2001: 112)
Marrithiyel	(Green 1989: 48; Green 1997: 246)
	note: Numeral and demonstrative/pronoun 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 ms)
Uradhi	(Crowley 1983: 371)
Restricted flexibility (45 languages)	
Limited in frequency (18 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)
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 pc; 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; limited information about longer NEs)
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: examples)
Paakantyi	(Hercus 1982: 98-101, examples)
Thargari	(Klokeid 1969: examples; no information about longer NEs)
Umpila / Kuuku Ya'u *	(Hill ms)
Worrorra	(Clendon 2000, 2014: examples)
Yalarnnga	(Breen & Blake 2007: 57-58, examples; no information about longer NEs)
Yandruwandha (Innamincka)	(Breen 2004a: 47, examples)
Yankunytjatjara	(Goddard 1985: 47, 49, 55-56, 60)
Yir Yoront	(Alpher 1973: 281-289)

Flexibility of adjective-like modifiers; determining elements fixed at one edge (10 languages)

Bundjalung	(Sharpe 2005: 98)
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)
Muruwari	(Oates 1988: 51, 55, 82, 87-88, examples; limited information on longer NEs)
Nhanda	(Blevins 2001: examples; no information about longer NEs)
Wadjiginy (Bachamal)	(Ford 1990: 88, examples; Tryon 1974: 209; no information about longer NEs)
	note: According to Tryon (1974: 208), adjectival modifiers have a fixed position, but we rely on the most recent source for our categorization
Wajarri	(Douglas 1981: 240-244)
	note: Only the quantifying adjective is flexible, the rest of the modifiers has a fixed

Yindjibarndi	order. Also, younger speakers often switch to A-N order instead of the regular N-A. (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 (29 languages)

Bardi	(Bowern 2012a: 331-336)
Bilinarra	(Meakins & Nordlinger 2014: 103-104)
Bininj Gun-wok	(Evans 2003a: 243-244, examples)
Burarra	(Green 1987: (few) examples; Carew pc)
Dharrawal/Dharumba /Dhurga/Djirringanj	(Besold 2012: 287-288; 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: examples; no information about longer NEs)
Gumbaynggirr	(Eades 1979: 313, examples)
Jaminjung	(Schultze-Berndt 2000: 44-45; Schultze-Berndt & Simard 2011: 7)
Jaru	(Tsunoda 1981: 95, pc)
Jingulu	(Pensalfini 2003: examples)
Marra	(Heath 1981: 64, 290)
Miriwung	(Kofod 1978: 52, examples)
Ngan'gityemerri/ Ngan'gikurunggurr	(Reid 1997: 267) 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)
Ritharrngu	(Heath 1980: examples; no information about longer NEs or about the position of adjectival modifiers)
Ungarinyin	(Rumsey 1982: 58, 138; Spronck 2016: 37-38, 166, pc)
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 generalizations concerning word order

Bunganditj	(Blake 2003: 52, examples)
Dharumbal	(Terrill 2002: 48, examples)
Margany & Gunya	(Breen 1981a: 335, examples)
Wathawurrung	(Blake 1998: 84, examples)
Yorta Yorta	(Bowe & Morey 1999: 106, examples)

Table 4: 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 (Mparntwe)	(Wilkins 1989: §3.1)	right edge
Atynyamathanha	(Schebeck 1974: examples)	right edge
Bardi	(Bowern 2012a: 169-170)	left edge
Dalabon	(Cutfield 2013: 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 ms)	right edge
Umpithamu	(Verstraete ms)	right edge
Wadjiginy (Bachamal)	(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)	- right edge ("normally") - each element ("not ungrammatical")
Arabana / Wangkangurru	(Hercus 1994: 114, 282-284)	- right edge - last two or all elements (emphatic)
Diyari	(Austin 2011: 97-99)	- right edge - each element ("special emphasis or contrast")
Djinang / Djinba	(Waters 1989: 196)	- one element (unclear which one) - 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)	- one element - 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)	- right edge - each element (Dem-N)
Ngarrindjeri	(Yallop 1975: 29)	- only on modifier (dropped from head N) ("frequently") - each element
Nyulnyul	(McGregor 2011: 398, 419)	- left edge - each element (prominence to each element)
Oykangand	(Hamilton 1996: 19-20; Sommer 1970: 17)	- right edge - also left edge or each element (Dem)
Paakantyi	(Hercus 1982: 100)	- right edge - each element (when Dem/Interr-N)
Rembarrnga	(McKay 1975: 71)	- prefixes left edge, suffixes right edge ("normally") - any or all elements note: Author only tested this for N+A sequences
Thargari	(Klokeid 1969: 13)	- only one noun ("generally"; unclear which one) - each element (examples)
Uradhi	(Crowley 1983: 334, 371-372)	- head - each element (but A "rarely" take case)
Wajarri	(Douglas 1981: 241; Marmion 1996: 33)	- right edge ("very common") - each element
Warray	(Harvey 1986: 252-253)	- right edge - also each element or left edge (for LOC and GEN)
Wirangu	(Hercus 1999: 48)	- right edge - each element ("emphatic or stilted")
Yandruwandha (Innamincka)	(Breen 2004a: 101)	- right edge - one element other than right edge or each element ("much less commonly")
Yir Yoront	(Alpher 1973: 291-292; Alpher 1991: 67-69)	- right edge (case postpositions only option; suffixes main option) - each element (suffixes minor option)

Phrasal marking as minor option (11 languages)

Bilinarra	(Meakins & Nordlinger 2014: 106)	- each element - head (rare, analysed as language shift phenomenon)
Djabugay	(Patz 1991: 48)	- each element - right edge (casual speech)
Duungidjawu	(Kite & Wurm 2004: 27-28, 37, 96, examples)	- each element - 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)	- each element ("greatly prefer[red]") - one element (unclear which one)
Kuku Yalanji	(Patz 2002: 119)	- each element - right edge ("occasionally" but corrected by speakers when editing their own narratives)
Margany &	(Breen 1981a: 337)	- each element: "usual practice"

Gunya		- but "not obligatory" note: Unclear which element is marked when there is phrasal marking
Ngiyambaa	(Donaldson 1980: 232)	- each element - 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)	- each element - one element (fast or conversational speech; unclear which one)
Warumungu	(Simpson 2002: 87-88; Simpson & Heath ms: §4.3)	- each element - right edge ("occasionally")
Yindjibarndi	(Wordick 1982: 142)	- each element - one element (unclear which one)
Yingkarta	(Dench 1998: 52)	- each element - 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)	- first or last element - each element note: Unclear what main option is
Guugu Yimidhirr	(Haviland 1979: 102-104)	- right edge ("often") - each element
Jaminjung	(Schultze-Berndt 2000: 43)	- any one element - more than one element note: Probably conditioned by differences in information structure
Jingulu	(Pensalfini 2003: 176)	- right edge - left edge (Dem attracts case marking) - each element
Karajarri	(Sands 1989: 69)	- left edge - each element note: Unclear what main option is
Mayi	(Breen 1981b: 63-64)	- any one element - more elements note: Personal pronouns and numerals unmarked in two-word nominal expressions
Muruwari	(Oates 1988: 7, 55, 62, 67, 68, 82)	- right edge (N-A; Dem-N (ERG); A-N (ERG); LOC, ALL/DAT) - left edge (LOC, ALL/DAT) - 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)	- one element (usually but not always right edge) - each element
Ritharrngu	(Heath 1980: examples)	- right edge - each element
Warlpiri	(Hale et al. 1995: 1434;	- right edge

	Nash 1980: 159-160)	- 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)	
Gumbaynggirr	(Eades 1979: examples)	
Jaru	(Tsunoda 1981: 94-95, pc)	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)	note: Complementizing case shows head marking
Nyangumarta	(Sharp 2004: 302-303)	
Panyjima	(Dench 1991: 125)	
Pitta-Pitta	(Blake 1979b: examples, pc)	
Wambaya	(Nordlinger 1998: 131-132)	note: Possessive phrase unmarked
Wangkajunga	(Jones 2011: 10)	
Wardaman	(Merlan 1994: 105)	
Warrongo	(Tsunoda 2011: 342, 361)	exception: Possessive pronoun unmarked
Wathawurrung	(Blake 1998: 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, pc)	

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"
		note: Some dialects use ABL or INSTR as an optional ergative marker.
Burarra	(Green 1987: 16-18, examples)	LOC/INST prefix (Green 1987: 17-18), marked on all elements of the NE
Emmi	(Ford 1998: 103)	right edge for INST, DAT/ALL, ABL/CAUS, COM, LOC
Enindhilyakwa	(van Egmond 2012: 1, 302-304)	for LOC, ABL, ALL, INST: - 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 INST
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: INST 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 pc)	right edge for "non-grammatical cases"; sometimes other element
Worrorra	(Clendon 2014: 18, §10.6, 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 5: '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)
Garrwa	(Mushin 2012: 6-7, 36-37; Simpson & Mushin 2008; Mushin pc)	pronominal cluster in 2nd position, but usually verb-initial basic word order
Jaru	(Tsunoda 1981: 107)	catalyst *nga-* plus enclitic pronouns in 2nd position
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
Ritharrngu	(Heath 1980: 43, 90)	pronominal enclitics, attached to first constituent of clause
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 complementizer, 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
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 6: Prosody

Prosody		
Atynyamathanha	(Schebeck 1974: 61)	intonation distinguishes between one or more noun phrases (no further comment)
Bilinarra	(Meakins & Nordlinger 2014: 102-103)	- absence of pause - same intonational phrase
Dalabon	(Cutfield 2013: 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 <u>note:</u> 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 ms)	- 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

| | phrasal marking | phrasal + word marking | | | word marking | no marking | unknown |
		main phrasal	*minor phrasal*	*unclear*			
fixed word order	Anguthimri Arrernte *Dalabon* * *Kuuk Thaayorre* Marrithiyel Nyungar * Umbuygamu Umpithamu *	Alyawarra *Gooniyandi* * Ngarrindjeri Nyulnyul * Uradhi			Dyirbal Kayardild * Lardil *Martuthunira* * Panyjima *	*Gaagudju* * *Limilngan* * Tiwi *	
restricted flexible word order	*Atynyamathanha* Kala Lagaw Ya Kugu Nganhcara Malakmalak *Umpila /Kuuku Ya'u** Wadjiginy Yankunytjatjara Yawuru	Arabana/Wangkangurru Diyari Mathi-Mathi /Letyi-Letyi/ Wati-Wati Oykangand *Paakantyi* Thargari *Wajarri* *Warray* Yandruwandha Yir Yoront	Djabugay Duungidjawu Kuku Yalanji Ngiyambaa Yindjibarndi Yingkarta	Guugu Yimidhirr Karajarri Mayi Muruwari (equal) 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	Bilinarra Garrwa Walmajarri Warumungu	Dharrawal/ Dharumba/ Dhurga/ Djirringanj *Jaminjung* Jingulu Ritharrngu Warlpiri	Gumbaynggirr Jaru *Marra* Nyangumarta Wambaya *Wangkajunga* *Wardaman* Warrongo Yuwaalaraay	Burarra Bininj Gun-wok Enindhilyakwa Giimbiyu Ungarinyin	Miriwung
word order unknown				Margany & Gunya	Wathawurrung Yorta Yorta		Bunganditj Dharumbal

Table 7: Overview of languages in the sample. Underlining marks diagnostic slots, italics marks prosodic evidence. Analyses in terms of functional classes are marked with *.