

# **NOUN-ADJECTIVE COMPOUNDS IN GUNWINYGUAN LANGUAGES**

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Abstract: In Gunwinyguan languages (Northern Australia), nouns may incorporate not only into verbs, but also adjectives. These N-Adj compound structures have interpretations identical to those of noun phrases modified by an adjective in English. A consideration of the evidence nevertheless argues that the morphological head of the N-Adj construction is the adjective. We show that this paradox can be resolved using inside-out function application to allow the compound to be headed by the adjective at c-structure, but by the noun at f-structure. We show further that the same analysis extends to cases of nominal ‘classification’ where the incorporated nominal is construed as a generic classifier together with an independent specific noun in apposition.

## 1. Introduction

In this paper we examine the incorporation of nominals into adjectives in Gunwinyguan languages (from Arnhem Land, northern Australia), including Ngalakgan (Merlan 1983, Baker 2008), Nunggubuyu/Wubuy (Heath 1984), Ngandi (Heath 1978), and Bininj Gun-wok (Evans 2003), as in (1).<sup>†1</sup>

- (1) Ngalakgan
- |                        |                              |
|------------------------|------------------------------|
| a. <i>ceŋ-ŋolkko</i>   | ‘big fish’                   |
| fish-big               |                              |
| b. <i>kuŋtu-joccoŋ</i> | ‘clear (not sacred) country’ |
| country-clear          |                              |
| c. <i>laŋka-kaŋa?</i>  | ‘small waterhole’            |
| billabong-small        |                              |

These N-Adj compounds involve a subset of nominals with ‘generic’ or classifying functions and exist alongside phrasal N + Adj combinations of the more familiar type, as in (2).<sup>2,3</sup>

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<sup>1</sup> Examples, except where noted, are drawn from Baker’s fieldnotes and Baker (2008). We have represented language examples throughout with standard IPA, rather than the orthography of each language. Abbreviations are listed at the end of the paper. Loanwords in examples are represented in italics.

<sup>2</sup> The standard reference work for this language (usually, though incorrectly, referred to as ‘Nunggubuyu’) is Heath (1984).

<sup>3</sup> Note that we use the term ‘compound’ throughout the paper in a neutral sense, interchangeably with ‘incorporation’, as a combination of two lexical roots or stems. However, as discussed briefly below, compounds in GN languages have different



other languages, for instance, N-Adj compounds in GN languages do not have interpretations as types or kinds (like ‘blackbird’, ‘brown bear’, etc). Rather, compounds such as ‘big fish’ only have strictly compositional interpretations, identical to the phrasal combination of the same adjective and noun (or their equivalents in English). We therefore do not find Bloomfield’s (1949:197) famous contrast between ‘blackbird’ and ‘black bird’ in GN languages. Most of the time, only the ‘black bird’ interpretation is possible.<sup>5</sup>

Most of the essential properties of this type of incorporation are thus similar to what we find in nominal incorporation into verbs (as discussed in Nordlinger & Sadler, this volume), and demand a similar analytical approach. Different issues also arise however, since in this case, the morphologically incorporated element (i.e. the nominal), is functionally equivalent to the head in the phrasal counterpart. In this paper we provide an LFG account of these N-Adj compounds which exploits the flexibility of the LFG architecture to provide an explanatory account in which the compound is headed by the adjective at c-structure level, but by the noun in the f-structure.<sup>6</sup>

In §2 and §3 we present the core data that we will be concerned with and argue that these N-Adj combinations are (i) compounds rather than phrases (§2); and (ii) morphosyntactically headed by the adjective (§3). Despite being headed by the adjective, these N-Adj compounds have the same interpretations as Adj + N phrasal combinations (in both these languages, and in English), which are headed by the noun. In §4 we provide our analysis which captures both the morphosyntactic facts discussed in §2 and §3 as well as the functional equivalence with Adj + N phrases. In §5 we extend our analysis to constructions in which the incorporated nominal is in a generic-specific relationship with an external nominal, building on the analysis presented by Nordlinger & Sadler (this volume). Finally in §6 we show how our analysis interacts with the analysis of nominal incorporation into verbs presented in Nordlinger & Sadler (this volume).

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<sup>5</sup> Many GN languages have a small class of terms for biological taxa which are formally compounds. For instance, Wubuy has names such as /ɲuta-lartark/ (lit. ‘midriff-rough’) ‘king brown snake (*Pseudichis australis*)’. However, such terms always involve a body part and an adjective, and are semantically exocentric. Crucially, they never involve a biological hypernym on the model of ‘blackbird’.

<sup>6</sup> Our analysis is therefore different to that of Broadwell (2007), who provides an account of similar data from Zapotec which makes use of lexical-sharing. We prefer our analysis for the Gunwinyguan data since it allows for integration with Nordlinger and Sadler’s analysis (this volume) of nominal incorporation into verbs in these languages, thereby providing a unified account for both types of incorporation. It is also not clear how Broadwell’s approach would extend to the co-occurrence of N-Adj compounds with external nominals, as discussed in §5. However a detailed comparison of the merits of the two different approaches is yet to be undertaken.

## 2. Compounds, not phrases

Here we'll concentrate on the morphological criteria distinguishing compounds from phrases in this group of languages.<sup>7</sup> In GN languages, compounds take affixation only at the word edges, and not internally. In example (4), the Ngalakgan compound takes an initial noun class prefix, and a final case suffix.

- (4) Ngalakgan  
jini-munku-ɬa,                      ku-colkko-maʔ-kaʔ  
2sg/1pl-follow-FUT              NEUT-ground-good-LOC  
'You follow us, to the good [i.e. soft, sandy] ground.'      [5/9/97:1A]

Compounds of this form can therefore be distinguished from phrases, which would never take a single set of affixes on each edge, since Ngalakgan does not, in general, allow case-marking on a single constituent of a (notional) phrase. So examples such as (5), where the noun is prefixed for noun class but the coreferential adjective is suffixed for case, are not accepted by speakers.<sup>8</sup>

- (5) Ngalakgan  
\*ku-colkko              maʔ-kaʔ              jini-munku-ɬa  
NEUT-ground              good-LOC              2sg/1pl-follow-FUT

Secondly, there is morpho-phonological evidence from Wubuy for a compound analysis. In Wubuy, there is a phonological rule which inserts a meaningless epenthetic string /-ŋu-/ before stop-initial stems, following another stem or a consonant-final prefix.<sup>9</sup> N-Adj compounds are subject to the rule, just like verbs. The rule only applies within words, hence the forms in (6) are ungrammatical.

- (6) Wubuy (Heath 1982:277)
- a. ana-jir-ŋu-ʈiku                      'green leaves, foliage'  
NEUT.TOP-leaves-EPENTH-raw
- b. ana-jir-ŋu-ʈaʈark                      'dried-up leaves'  
NEUT.TOP-leaves-EPENTH-dry

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<sup>7</sup> There are also prosodic criteria distinguishing compounds in GN languages from phrases; see Baker (2008); Baker & Harvey (2003); Evans (2004).

<sup>8</sup> Merlan (1983:81) makes the contrary claim, that only the head of NP need take overt case marking. In fact, this is only true with respect to demonstratives, which may omit a case suffix if the case-marked noun immediately follows. It is not true of sequences of noun and adjective, in Baker's data.

<sup>9</sup> See Heath (1984:35-7) for discussion of this rule.

c. \* ɲu-t̪iku, \* ɲu-t̪aʔark

In short, the phonological evidence suggests that we are dealing with domains of phonology that are typically regarded as ‘words’ of some kind.

### 3. Compounds as adjectives

In this section, we show that in GN languages, N-Adj compounds are morphologically headed by the adjective and thereby take the full range of inflectional possibilities open to other (non-compounded) adjectives. We propose here that N-Adj compounds are always headed by the adjective, even where they function as arguments, as in (4).<sup>10</sup> If we regard them as words of adjective category, then their other properties follow, as we now show.

The arguments that N-Adj are of the Adj class morphologically, rather than the N class, come principally from two sources: noun class assignment, and potential for TAM inflection. On these criteria, we can distinguish two classes of ‘nominals’ in the lexicon of GN languages:

	Class 1	Class 2
Noun class	Variable/contingent	Fixed/inherent
Inflection for TAM	Possible	Impossible

Fig 1. Classes of Nominals in the GN lexicon

Class 1 consists of nouns referring to ‘human status’ (the equivalents of ‘person’, ‘child’, ‘old person’, ‘initiated man’, ‘young girl’, ‘thief’, ‘good hunter’, etc) and kinship on the one hand, and adjectives on the other. Adjectives realise properties and attributes of size, colour, quality, age, and so on as in English. Class 2 consists of, on the one hand, names (personal and placenames, and names for species and particular kinds of implements), and on the other ‘generic terms’, such as the equivalent of ‘billabong’, ‘fire’, ‘water’, ‘(any kind of) spear’, ‘(any kind of) kangaroo’, ‘camp’, ‘rock’, ‘(any kind of) tree’ and so on. N-Adj compounds always consist of a class 2 nominal followed by a class 1 nominal, in that order. Moreover, they must consist of a ‘generic’ nominal compounded with an ‘adjectival’ nominal.

#### *Inflection for Tense-Aspect-Mood*

Nominals in class 1 can be inflected for TAM when functioning as clausal predicates. Normally, inflection for TAM is made possible by the addition of a finite auxiliary root (/me-/ in Ngalakgan, /ma-/ in Wubuy):

<sup>10</sup> Here we differ from Evans (2003), who takes the nominal element to be the head, when the compound is functioning referentially. As we show below, this category indeterminacy arises from the fact that these compounds exhibit a mismatch between the c-structure head and the f-structure head—a mismatch that is straightforwardly accounted for on our analysis.

(7) Ngalakgan (Merlan 1983:58)

ɲajkka? ko?je ɲu-**miɲppara-menij**  
I here 1sg-child-STAT.PC  
'I was a child'

N-Adj compounds functioning as clausal predicates can also be inflected for TAM, in the same way as other class 1 nominals. Here, the N-Adj compound takes a tense-specific negative suffix, which can only be used on verbs, and class 1 nominals functioning as clausal predicates.

(8) Ngalakgan

ku-kunɲu-**cappuru-ʔmolk** kunman?  
NEUT-country-sacred-PRNEG maybe  
'it might not be sacred country' (Ngalakgan)

In contrast, nominals from class 2 (species terms, 'generic' terms, specific implement terms) cannot be inflected for TAM, even when they function as clausal predicates. Existence or identity can be predicated of (apparently) any noun, as in the following Wubuy example:

(9) Wubuy

**matamu mana-jirpa.ɲa,** a-ciici-jipun  
VEG-PROX VEG.TOP-ironwood, NEUT-sore-REL  
*dijan iya ayinwud tri, im blanga so* 'ironwood here, it's [used] for  
sores.'

Thus, the fact that these N-Adj compounds can be inflected for TAM shows them to be class 1 nominals, morphologically.

Another piece of evidence that N-Adj compounds are adjectives comes from verb agreement morphology. As well as TAM marking, adjectives (and other class 1 nominals) can take verb agreement morphology when functioning as clausal predicates, as shown in (10). Class 2 nominals, on the other hand, can never take this type of agreement morphology, as shown in (10). N-Adj compounds pattern as class 1 nominals in this respect, as shown by the example in (10). (10) is a compound of a generic noun /jan/ 'voice' and an adjective /waɲawaɲat/ 'strong, firm' (which is reduplicated in this case). Since it was used as a predicate in this example it takes a verbal argument prefix /ni-/ '3 masculine singular' agreeing with the referent, a man. This prefix cannot occur on common (non-adjectival) nouns, and hence (10) is ungrammatical.

- (10) Wubuy
- a. /ni-waʔawaʔat/  
3M-strong  
'he is strong'
  - b. \*/ni-jaŋ/
  - c. [nijambaʔawaʔawaʔad]  
/ni-jaŋ-waʔa-waʔawaʔat/  
3M-voice-INTENS-strong  
'his voice is strong, he is strong voice-wise' [9/4/07: tk1]

What this demonstrates, as with the other examples, is that (10) cannot be considered to be a phrase consisting of two morphological words, because the putative first word is ungrammatical. Rather, it is a morphological word (in some sense), which takes prefixation appropriate to its head, the adjective.

*Agreement for Noun Class*

Nominals in class 1 can take variable noun class prefixation, consonant with the idea that the noun class 'agrees' with a referent. In BGW, where 'noun class' on heads and 'agreement' on modifiers can be distinguished (Evans 1997, Evans et al. 2002), compounds take agreement, rather than noun class, where these differ (Evans 2003:177). They therefore take the same inflectional morphology as adjectives, agreeing with the incorporated noun, rather than taking the gender prefix that noun takes when it is an independent word. In example (11), from the Gundjeihmi dialect of BGW, the compound /an-tulk-ɬajek/ 'hard wood' takes VEG agreement with prefix /an-/, because the noun /tulk/ governs VEG agreement on cooccurring modifiers (adjectives, demonstratives). However, the noun /tulk/ itself, when independent, takes the NEUT noun class prefix /kun-/. Similarly with the (b) example (from the Kunwinjku dialect; both examples from Evans 2003:177):

- (11) Bininj Gun-wok
- a. /an-tulk-ɬajek/ VEG-tree-hard 'hard wood'
  - c.f. /kun-tulk/ NEUT-tree (Dj)
  - b. /man-piɬi-kimuk/ VEG-flame-big 'big flame'
  - c.f. /kun-piɬi/ NEUT-flame (W)

This appears to be solid evidence against the proposal that the noun is the morphosyntactic head of the compound, even where the compound is used referentially. If it were, there would be no reason for the compound to take gender agreement, rather than noun class prefixation.<sup>11</sup> On the other

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<sup>11</sup> See Evans (2004) for an alternative view.



hand, it is also solid evidence that the incorporated noun is the controller for the purposes of gender agreement, a property that is usually associated with an f-structure head.

If we allow that compounds are adjectives, then their other properties follow, since adjectives can be referential in GN languages (as in Australian languages generally, cf. Hale 1983 on Warlpiri):<sup>12</sup>

(12) Ngalakgan

**ɲolkko**    ɲu-pawun?-mij  
big            1sg-leave-AUX.PP  
*bigmob ai bin libim*  
'I left a lot.'

(13) Ngalakgan

a. jekke    ɲu-ku-ceɲ    mokkol    ku-ɬapon?  
INTERR   MA-TOP-fish father    3NP-go.PR  
'Dad, any fish [here]?'  
b. **ɲolkko**    cecepaɲɲ?    ɲu-ɲaniɲ,    **ɲolkko**    ku-ɬapon  
big    yesterday    1sg-see.PC, big    3NP-go.PR  
*O bigmob fish im wokabaut*  
'I saw a lot yesterday, a big mob moving around'    [2/9/97:1B]

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<sup>12</sup> These examples are not ideal unfortunately, because the interpretation is quantificational rather than attributive. We find the same shift in BGW examples presented in Evans (2003:178):

na-pe?ɲe    cappilaɲa    ka-po-karme    an-po-kimuk  
MA-that    billycan    3-liquid-have.NP    VEG-liquid-big  
'That billycan has lots of water.'

Ngandi too appears to share the same ambiguity, where the Adj /ka|ɲi/ is translated as 'big, many' by Heath (1982). It could be that (some) adjectives allow quantificational readings as well as attributive ones, and that the reading depends on the kind of noun involved. There has not been enough research on these languages to determine this question. What is also unclear, is under what circumstances adjectives can be referential without some cooccurring nominal. The examples we have so far been able to find in Ngalakgan suggest that there is always an inferred referent supplied by discourse. Thanks to Cliff Goddard for alerting us to this important question.

In sum, N-Adj compounds in Gunwinyguan languages are functionally equivalent to Adj + N phrasal combinations, but exhibit the following distinctive morphosyntactic properties:

- (i) they are compounds rather than phrases, as shown by the morphophonological and prosodic evidence;
- (ii) they belong to the morphological category of class 1 nominals, as shown by the fact that they take TAM inflection and verbal agreement morphology when functioning as clausal predicates, and gender agreement morphology, rather than noun class marking;
- (iii) although the adjective is the morphosyntactic head, the incorporated nominal shows some head properties, such as controlling gender agreement.

Thus in these N-Adj compounds we find a mismatch between the morphosyntactic properties (which show the adjective to be the head), and the semantic/functional properties (which suggest that the incorporated nominal is the head, on analogy with equivalent Adj + N phrasal combinations). This mismatch of properties explains why there is some debate in the literature as to whether these compounds are indeed adjectives or nouns (cf. Baker 2008 and Evans 2003; 2004). In the next section we show how the flexibility of the LFG architecture can be exploited to provide a straightforward account of these compounds and their properties.

#### **4. Analysis of N-Adj compounds**

Using inside-out function application in LFG, these complex empirical facts can be given a straightforward and explanatory account, as follows. As noted above, these N-Adj combinations share many functional similarities with N-V incorporations (as discussed by Nordlinger and Sadler (this volume)), and in fact the same N may be incorporated into both a verb and an adjective in a single construction, as shown in the Bininj Gun-wok example in footnote 12. Our formal analysis, then, aims to capture this relationship by generating the incorporated nouns in the same part of the f-structure irrespective of whether or not they are incorporated into an adjective or into a verb. Thus, the analysis presented here interacts seamlessly with the analysis of N-V incorporations provided by Nordlinger and Sadler (this volume), as we exemplify in §6.

Firstly, we assume the basic c-structure rules provided in (14):<sup>13</sup>

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<sup>13</sup> Heath (1986) argues that sequences of nominals and adjectives do not form phrases in Wubuy, and his arguments could be extended to Ngalakgan and BGW also. However, for expository purposes we are assuming a phrasal level for each constituent type here since it enables us to simplify the f-descriptions in the lexical

- (14) NP → ...A , ...                      N ...  
           ↓ ∈ (↑ ADJ)                      ↓ ∈ ↑  
   ↓ IND = ↑ IND

We assume that a regular adjective with attributive function carries the information provided in (15) (from Wubuy). When combined with an ↓ ∈ (↑ ADJ) annotation from the c-structure, this projects the f-structure in (16):

- (15) /ɬuŋkal/: A  
       (↑ PRED) = 'big'

- (16) [ ADJ { [ PRED 'big' ] } ]

When there is no incorporated nominal, the PRED of the outer f-structure will be provided by an external nominal (as in (2)), or by the pronominal agreement marking on the verb (as in (13)).

When the adjective is compounded with an incorporated nominal, the nominal itself constructs the PRED for the superordinate f-structure, using inside-out function application. The lexical entry for the incorporated nominal /ŋucica/ 'fish (generic)' is given in (17) (this will be revised slightly in §5).<sup>14</sup> This lexical entry is transparently related to the lexical entry of the unincorporated nominal via a lexical redundancy rule which adds the (ADJ ∈ ↑) = ↓ specification and associates all other f-descriptions with ↓.

- (17) /ŋucica-/:  
       (ADJ ∈ ↑) = ↓  
       (↓ PRED) = 'fish (generic)'  
       (↓ INDEX PERS) = 3  
       (↓ INDEX NUM) = SG  
       (↓ INDEX GEND) = RESID

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entries. This analysis could be converted into a completely flat structure, however, if required.

<sup>14</sup> We have not addressed the semantics of the incorporated noun here. One approach is that of Wilkins (2000), who argues that the semantics of generic nouns used in classifier constructions in Arrernte is the same as their semantics in independent use, what is different is the semantics carried by the classifier construction itself and the particular intersection of the generic meaning and the specific meaning. We believe this is a fruitful line of enquiry for GN languages also, but lack the space to fully develop it here.

The N-Adj compound /ηucica-ιιηkal/ ‘big fish’ then has the lexical entry provided in (18), which projects the f-structure in (19).

- (18) /ηucica-ιιηkal/: A  
 (↑ PRED) = ‘big’  
 (ADJ ∈ ↑) = ↓  
 (↓ PRED) = ‘fish (generic)’  
 (↓ INDEX PERS) = 3  
 (↓ INDEX NUM) = SG  
 (↓ INDEX GEND) = RESID

- (19) 
$$\left[ \begin{array}{l} \text{INDEX} \left[ \begin{array}{l} \text{PERS } 3 \\ \text{NUM } \text{SG} \\ \text{GEND } \text{RESID} \end{array} \right] \\ \text{PRED 'fish (generic)'} \\ \text{ADJ } \{ \{ \text{PRED 'big'} \} \} \end{array} \right]$$

In this f-structure, the information associated with the incorporated nominal has been projected into the outer f-structure which the adjective ‘big’ modifies. Thus, despite being a different category at c-structure (i.e. adjective), this N-Adj compound projects an f-structure analogous to that of Adj + N phrasal combinations, such as ‘big fish’ in English. Since the INDEX information associated with the incorporated nominal is also projected into the outer f-structure we capture the fact that it is the incorporated nominal that controls verbal agreement and adjectival gender agreement, despite the fact that it is not the morphological head of the N-Adj compound.<sup>15</sup>

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<sup>15</sup> There are alternative ways to achieve this f-structure formally. For example, one option would be to use a local name for the f-structure associated with the incorporated nominal, and therefore avoid the use of the ↓ in the lexical entry in (17) and (18). Another option would be to use a sub-lexical rule to combine the N and Adj as follows: (Ron Kaplan, p.c.):

NP → A ...  
       ↑ = ↓  
 A → N           A  
       ↑ = ↓   ↓ ∈ (↑ ADJ) (cont. below)

## 5. Generic-specific constructions with an external nominal

N-Adj compounds exhibit a type of classifier noun incorporation (Rosen 1989), except that in this case the incorporation is into an adjective (which may be in an argument position) rather than into a verb. Like other types of classifier noun incorporation discussed in the literature (and in Nordlinger & Sadler, this volume), N-Adj compounds can occur in a ‘generic-specific’ construction with an external nominal, as in the following:

- (20) Biniŋ Gun-wok (Manyallaluk Mayali dialect; Evans 2003:17)  
 an-**carman** ko-no **ko**-ŋermej  
 VEG-kurrajong flower-PRT flower-red  
 ‘Kurrajong (*Brachychiton* sp.) trees have red flowers.’ (An alternative translation is: ‘Brachychiton flowers are red ones [flowers].’)
- (21) Ngalakgan  
 palip? mu-**maj**-pinti **plawa**  
 like VEG-veg.food-real flour  
 ‘like real flour’ [ ‘flour’ < Kriol] [DD]
- (22) Wubuy (Heath 1980:435)  
 nirima-lalwulii **aɹ**-ma-mawuɹaatuc anaa-**kuku**  
 1pl/VEG-soak.PR water-RED-cold NEUT.TOP-freshwater  
 ‘we soak it [gum of wattle sp.] in cold water’
- (23) Wubuy  
**ŋucica**-ɹuŋkal **jiŋkuɹpanti** ŋiini-maŋi  
 fish[RESID]-big barramundi[NA] 1in.pl/NA-get.PC  
 ‘we got a big barramundi [NA gender]’

We follow Nordlinger & Sadler’s (this volume) analysis of these constructions, in which both the incorporated and external nominals contribute to an f-structure set, on a par with their treatment of phrasal generic-specific counterparts (Sadler & Nordlinger 2006).

To illustrate, consider the following example in which the Wubuy N-Adj compound /ŋucica-ɹuŋkal/ ‘big fish’ is combined with the specific external noun /jiŋkuɹpanti/ ‘barramundi’.<sup>16</sup>

- (24) Wubuy  
**ŋucica**-ɹuŋkal **jiŋkuɹpanti**  
 fish-big barramundi ‘big barramundi’

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However, this approach does not allow the adjective to have scope over the entire generic-specific combination when this N-Adj combination co-occurs with an external nominal (see §5), and thus we prefer the analysis presented here.

<sup>16</sup> This constructed example has been tested with Baker’s primary Wubuy consultant. However, it is consistent with similar, naturally-occurring examples such as (20).

Recall the NP c-structure rule, repeated below. We assume (following standard LFG assumptions) that all nodes are optional (which allows for the two elements to constitute two separate discontinuous phrases).

$$(25) \quad \begin{array}{l} \text{NP} \rightarrow \dots A, \quad \dots \quad \quad \quad \text{N} \quad \dots \\ \downarrow \in (\uparrow \text{ADJ}) \quad \quad \quad \quad \quad \quad \downarrow \in \uparrow \\ \downarrow \text{IND} = \uparrow \text{IND} \end{array}$$

The lexical entry for /jɪŋkʊlpanti/ ‘barramundi’ is that given in (26). When combined with the c-structure rule in (25) (in the N position), this projects the partial c-structure and f-structure in (27):

$$(26) \quad \begin{array}{l} /jɪŋkʊlpanti/: \text{N} \\ (\uparrow \text{PRED}) = \text{'barramundi'} \\ (\uparrow \text{INDEX PERS}) = 3 \\ (\uparrow \text{INDEX NUM}) = \text{SG} \\ (\uparrow \text{INDEX GEND}) = \text{NA} \end{array}$$

$$(27) \quad \left[ \begin{array}{l} \left[ \begin{array}{l} \text{INDEX} \left[ \begin{array}{l} \text{PERS } 3 \\ \text{NUM } \text{SG} \\ \text{GEND } \text{NA} \end{array} \right] \end{array} \right] \\ \left[ \begin{array}{l} \left[ \text{PRED 'barramundi'} \right] \\ \left[ \begin{array}{l} \text{INDEX} \left[ \begin{array}{l} \text{PERS } 3 \\ \text{NUM } \text{SG} \\ \text{GEND } \text{NA} \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

Turning now to /ŋucica-ɽɪŋkal/ ‘big fish’, the lexical entry for the incorporated nominal provided in (18) needs to be modified to allow for the fact that the incorporated nominal may contribute information to a set at f-structure. The modified lexical entry is provided below, where we have added the information that the f-structure to which the nominal contributes may *optionally* belong to a set in the outer f-structure to which the ADJ belongs (((ADJ ∈ ↑) (∈)) = ↓).

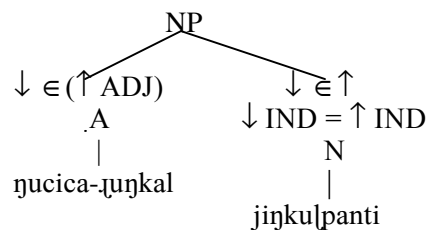
$$(28) \quad \begin{array}{l} /ŋucica-/: \\ ((\text{ADJ} \in \uparrow) (\in)) = \downarrow \\ (\downarrow \text{PRED}) = \text{'fish (generic)'} \\ (\downarrow \text{INDEX PERS}) = 3 \\ (\downarrow \text{INDEX NUM}) = \text{SG} \\ (\downarrow \text{INDEX GEND}) = \text{RESID} \end{array}$$

The c-structure rule ensures that the INDEX of the external nominal will always be projected to the f-structure of the set. Where there is a mismatch between the INDEX values of the external nominal and the incorporated noun (i.e. mismatches in number or gender), it is the values of the external nominal which are always identified with those of the set (as in (23)<sup>17</sup>). We capture this by not projecting the INDEX features of the incorporated nominal to the outer f-structure so that, when an external nominal is present, the INDEX of the set will always be that of the external nominal.

When combined with the adjective /ɬuŋkal/ 'big' this results in the following f-structure for the N-Adj compound:

$$(29) \left[ \left[ \left[ \left[ \text{PRED 'fish (generic)'} \right] \right] \right] \right. \\ \left. \left[ \text{INDEX} \left[ \begin{array}{l} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND RESID} \end{array} \right] \right] \right] \\ \left[ \text{ADJ} \{ [\text{PRED 'big'}] \} \right]$$

Finally, when combined with the f-structure associated with the external nominal, we generate the following c- and f-structure for the whole generic-specific construction.



<sup>17</sup> Wubuy is a good language to test this implication with, since (unlike most GN languages) it religiously distinguishes among 7 genders of objects. In example (23), we find an argument prefix /ɬiini-/ which agrees with the gender of the external noun /jiŋkuɬpanti/ (NA gender), rather than the incorporated generic /ɬucica/ (RESID gender). The corresponding argument prefix for a RESID gender object would be /ɬuru-/.

$$(30) \left[ \begin{array}{c} \text{INDEX} \left[ \begin{array}{c} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND NA} \end{array} \right] \\ \left\{ \left[ \begin{array}{c} \text{PRED 'fish (generic)'} \\ \text{INDEX} \left[ \begin{array}{c} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND RESID} \end{array} \right] \end{array} \right] \right\} \\ \left[ \begin{array}{c} \text{PRED 'barramundi'} \\ \text{INDEX} \left[ \begin{array}{c} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND NA} \end{array} \right] \end{array} \right] \\ \text{ADJ} \{ [\text{PRED 'big'}] \} \end{array} \right]$$

This f-structure is exactly analogous to those provided by Nordlinger & Sadler (this volume) to account for incorporated generics in verbal incorporations, thereby capturing the similarities between the two types of incorporation structures. The only difference here is that the nominal set is modified by an adjective.<sup>18</sup>

## 6. Putting it all together

Now, consider an example in which there is both types of generic-specific incorporation—into a verb and into an adjective—as in the following (constructed) example:

- (31) Wubuy  
**ɲucica-ɲɲkal**    **ɲɲkuɲpanti**    ɲiini-**ɲucica**-maɲi  
 fish[RESID]-big    barramundi[NA]    1in.pl/NA-fish-get.PC  
 ‘we got a big barramundi [NA gender]’

<sup>18</sup> Note that we are assuming that the ADJ function is non-distributive. Here we deviate from Dalrymple (2001:366) in which grammatical functions (GFs) are assumed to be distributive features. However, there appear to be independent reasons for treating GFs as non-distributive, as in the example *She ate her breakfast and put her plate in the dishwasher* where we would not want to distribute the PP across each coordinated VP. We are also assuming that PRED is distributive (as discussed in Nordlinger & Sadler, this volume) to rule out the possibility that ↓ in (30) is identified with the f-structure of the set when there is an external nominal. If PRED is distributive then this identification would result in a PRED clash, rendering the f-structure invalid.



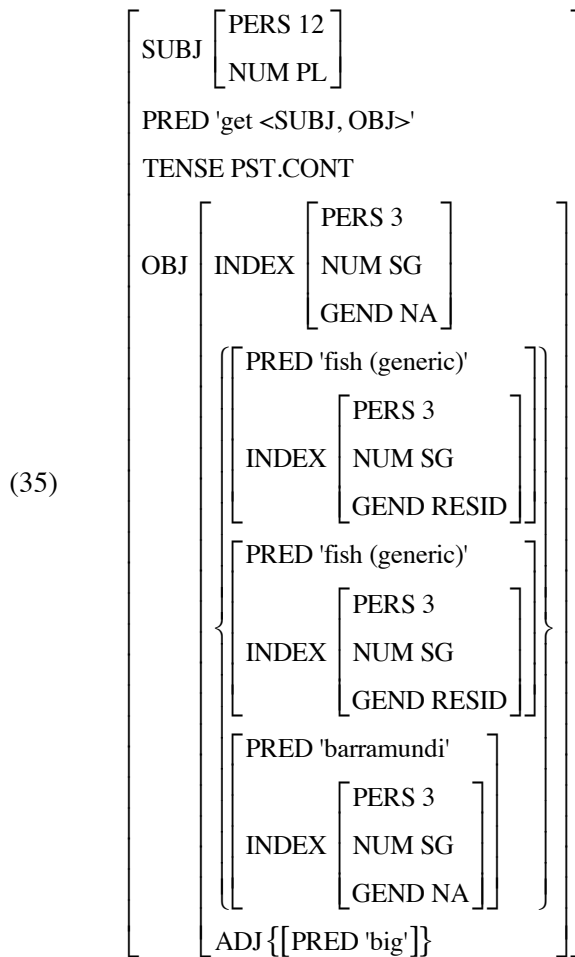
Following Nordlinger and Sadler (this volume), the verb+incorporated nominal projects the f-structure in (32), and, on our analysis, the N-Adj + external nominal projects the f-structure in (33):

$$(32) \left[ \begin{array}{l} \text{SUBJ} \left[ \begin{array}{l} \text{PERS 12} \\ \text{NUM PL} \end{array} \right] \\ \text{PRED 'get <SUBJ, OBJ>'} \\ \text{TENSE PST.CONT} \\ \text{OBJ} \left\{ \left[ \begin{array}{l} \text{PRED 'fish (generic)'} \\ \text{INDEX} \left[ \begin{array}{l} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND RESID} \end{array} \right] \end{array} \right\} \end{array} \right]$$

$$(33) \left[ \begin{array}{l} \text{INDEX} \left[ \begin{array}{l} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND NA} \end{array} \right] \\ \left\{ \left[ \begin{array}{l} \text{PRED 'fish (generic)'} \\ \text{INDEX} \left[ \begin{array}{l} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND RESID} \end{array} \right] \end{array} \right] \right\} \\ \left\{ \left[ \begin{array}{l} \text{PRED 'barramundi'} \\ \text{INDEX} \left[ \begin{array}{l} \text{PERS 3} \\ \text{NUM SG} \\ \text{GEND NA} \end{array} \right] \end{array} \right] \right\} \\ \text{ADJ} \{ \left[ \text{PRED 'big'} \right] \} \end{array} \right]$$

When these two f-structures are combined (assuming the c-structure provides ( $\uparrow$  GF) =  $\downarrow$  annotations for the NPs containing both the N-Adj compound and the external nominal), we end up with the f-structure for the whole clause shown in (33) (next page).<sup>19</sup>

<sup>19</sup> We assume that the generic/classifying nature of the incorporated nominals is accounted for in the semantics, and that it is this semantic property which allows for there to be repeated members in the set.



### 7. Conclusions and further implications

In this paper we have shown how the mixed categoriality of these N-Adj compounds can be accounted for by providing an analysis in which the compound is an adjective at morphological structure, and at c-structure, but headed by the incorporated nominal at f-structure. This allows us to account for the morphosyntactic facts, while capturing the functional similarities with Adj + N phrasal combinations in languages like English. Furthermore, we have shown how our approach can be extended to account for the combination of these compounds with external nominals in generic-specific constructions. In doing so we capture similarities between these constructions and other types of generic-specific constructions including those involving juxtaposed external nominals (Sadler & Nordlinger 2006) and those involving incorporation into verbs (Nordlinger & Sadler, this volume).

### Abbreviations

1, 2, 3: 1st, 2nd, 3rd person; F feminine noun class; M masculine noun class; NC noun class; NA non-human masculine noun class; NEUT neuter noun class; O object; RESID residual noun class (Ngandi and Wubuy); S subject (that is, Agent of a transitive or Subject of an intransitive verb); VEG vegetable noun class; DAT dative; DIST distributive; EPENTH meaningless epenthetic element (Wubuy); ERG ergative; F/FUT future; GEN genitive; IMMED immediate; IN incorporated noun; INST instrumental; INT interrogative clitic; INTENS intensive; INTERR interrogative particle; IRR irrealis; ITER iterative; LAT lative; LOC locative; NP nonpast; PC past continuous; PNEG/PRNEG/FNEG past/present/future negative suffixes; POSS possessive; POT potential; PROX proximal; PP past punctual; PR present; RED (semantically-empty) reduplication; REL relative/subordinator; RR reflexive/reciprocal; SAP speech act participant (1st and 2nd person referents); sp species; STAT stative; TOP topic.

### Language groups

BGW Bininj Gun-wok; Dj Gundjeihmi (dialect of BGW); GN Gunwinyguan (language family); MM Manyallaluk Mayali (dialect of BGW); Ngkn Ngalakgan; Ngdi Ngandi; Wby Wubuy ~ Nunggubuyu; W Kunwinjku dialect of BGW.

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