Song-climbing, line-sitting, word-throwing: Non-body part noun incorporation in the Daly languages

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Abstract

Noun incorporation refers to a linguistic process in which a noun forms a compound with a verb. Globally, the phenomenon is rare, but occurs frequently in several American, Paleo-Siberian and Australian languages. Specifically frequent in Australian languages is the incorporation of body part nouns, a process which has garnered a fair amount of published materials. In Australian languages, incorporation of nouns other than body parts is rare, and no general pattern providing a corresponding systematicity of this process has been found. This study explores this discrepancy by examining the Daly languages of Northern Australia, whose incorporation of non-body part nouns has largely been unexplored, and of which no typological overview has been published. The apparent rarity of non-body-part noun incorporation in the Daly languages is examined by use of a cross-linguistic typological overview based on existing literature, analyzing factors which inhibit or encourage incorporation of such nouns. It is argued that semantic factors, associated with environment, alienability and meronymy, have a significant effect on shaping the syntax and rules of incorporation of these languages. Cross-linguistic analyses show evidence that language contact and diachronic change within the Daly languages has likely resulted in grammaticalization and denominalization of nouns. This study argues that such new lexical items, when found in verbal compounds, should be viewed as constituting instances of noun incorporation, suggesting that non-body-part noun incorporation occurs more commonly than previously attested.

Contents

Glossing abbreviations

Across the literature used, different glossing systems and abbreviations. However, the different glossings were not deemed to be so discrepant that they would conflict significantly.

Therefore, in this paper, the glossings are provided exactly as they were provided in the respective literature. Two exceptions have been made:

for the abbreviations for *Minimal*, where the abbreviation has been changed from *M* or *m* to *MIN*, in order to avoid confusion with the abbreviations for *masculine* (*m* or *M*).

for the abbreviations for *feminine*, *F* has been changed to *Fem* to avoid confusion with *future* (*f*). change from *P* for *perfective aspect* to PERF, to avoid confusion with *past tense* (*P*)

In the list of glossing abbreviations below, several refer to the same function (e.g. 'Subject' is denoted by *S*, *SUBJ*, *SBJ, SUB*).

Glossing abbreviations
1	first person
2	second person
3	third person
=	enclitic boundary
+	bound stress-bearing component boundary
A, AGENT	agent, transitive subject
ABL	ablative
APPL	applicative
anaph	anaphoric
AS	augmented/subject
AUG	augmented
AUX	auxiliary verb
CA	lower animate / flesh food class marker
CAU	causal
COND	conditional
cont, CONT	continuous
COM	comitative
DEIC	deictic
DEM(r)	demonstrative (remote)

do	direct object
dl, DU	dual
E	first person exclusive
F,FUT	future tense
FOC	temporal/spatial focus
G	goal
INC	inclusive
INCH	inchoative
IMP	imperative
IMPF	imperfective
Ir, IRR	irrealis
LOC	locative
O, Ob, OBJ	object
M, m	masculine
MIN	minimal
mp	manipulative
MS	minimal/subject
NC	noun class
NEG	negative
NEW INF	new information
NF, NFUT	non-future
ns	non-singular
P, Pst	past
PERF	perfective
PERS	socially recognized people
PL, pl	plural
PP	past perfective
PR, PRES	present
PRM	?[1]
PRO	free form pronoun
R	realis
rdp, RDP	reduplication
rr	hands as instrument
REFL, RR	reflexive, reciprocal
S, SBJ, SUB, SUBJ	subject
s, sg	singular
SCE	source
w	wood gender
ø	mouth as instrument

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[1] PRM occurs in Harvey, 1989. Harvey does not specify what the abbreviation stands for and it was not found in other glossing lists.

1. Introduction

1.1. Noun incorporation

Noun incorporation (NI) refers to a grammatical process in which a noun forms a compound with a verb. The process may have syntactic as well as semantic implications. In one of the most influential publications on noun incorporation, Mithun (1984) defines four types of NI, which will be summarized below. A language may be classified as belonging to several types at the same time; according to Mithun, if a language exhibits e.g. Type III incorporation, it also does so with Type I and II.

Type I: In Type I noun incorporation, a verb and a noun forms a lexical compound which has a semantic, rather than syntactic, function: the incorporated noun (IN) serves to semantically specify the activity denoted by the verb, or to convey that the activity is a recurring event. Since it does not function as an argument to the verb, the incorporated noun serves no syntactic function in the sentence and is therefore not marked for case, number or definiteness.

Type II: As in type I, the incorporated noun is unmarked and does not function as an argument to the verb. However, the incorporation of the noun allows another oblique argument to fill the vacant case slot left by the IN, thereby manipulating case and argument structure within the clause.

Type III: While retaining the features from Types I and II, certain languages exhibiting Type III noun incorporation may also use this process to manipulate discourse structure; with Type III noun incorporation, the salience of a certain referent can be downplayed by demoting it from an individual constituent to an integrated part of the verbal compound. The noun, typically a generic one, restricts the semantic range of the verb.

Type IV: This type displays the same features as Type III, but differs in that it allows for the verbal compound with an incorporated noun to be followed or preceded by an external, more specific noun phrase. In these cases the IN often functions as a noun classifier or is particularly general, and has a clear role as co-referent.

On a global scale, noun incorporation is relatively rare cross-linguistically, mostly occurring in polysynthetic languages. For instance, Mithun (1984) mentions that American languages such as Mohawk, Blackfoot and Nahuatl employ extensive noun incorporation; as do Paleo-Siberian languages such as Chukchi and Koryak, and several Australian languages, with the Daly language group being the topic of the present paper.

In many languages, specifically those of Type II, the nouns primarily eligible for incorporation are those denoting body parts. This preference, as explained by Mithun (1984), is partially due to the body being a central component in many activities, as well as due to it allowing for a manipulation of case structure, as will be discussed in 2.1. In this paper, *body part nouns* stand in contrast to what will here be termed *non-body part nouns* (NBPN), referring to all nouns which do not denote a body part. For the Daly languages, incorporation of body part nouns is prevalent and systematic in that it mainly occurs for patient objects with some semantic bodily connection (Nordlinger, 2017). Incorporation of NBPN, however, is generally rare, though this varies across the Daly languages. Nordlinger (2017) mentions that NPBN incorporation in the Daly languages is mainly associated with location and instrument, while

Bicevskis (2023) suggests that which nouns are eligible for incorporation depends on their alienability to the agent. While both these suggestions certainly seem plausible, they provide no overarching systematicity covering the process of NBPN incorporation. In analyzing the existing literature on the Daly languages, no overview of non-body part noun incorporation, specifically, has been published. The brief sections on noun incorporation found in the literature only briefly mentions NBPNI, and most often only state that such incorporation is rare, but without going into the details on why this is. By conducting a cross-linguistic typological analysis, this study aims to document possible patterns in NBPNI, including factors inhibiting or promoting the process.

1.2. Daly languages

The Daly languages is a proposed language family of the northern region of the Daly River in Northern Territory, Australia. Every language within the Daly group is highly endangered to varying degrees. The languages are highly polysynthetic and exhibit complex verbal morphology and two-stem predicates. These stems serve to categorize event types as well as to specify lexical semantics, as in the examples from Murrinh-Patha below. Additional characteristics of the Daly language include holophrasis, head marking, ergative-absolutive case and the use of applicatives in syntactic structures (Nordlinger, 2017).

bim-   pun-   ma-yepup
1SG.SBJ.HEAR(16).NFUT-3PL.OBJ-APPL-listen
'I heard (the story) from them.' (Nordlinger, 2019)

ngirra-   dharday-nu
1SG.SBJ.STAND(3).FUT-descend-FUT
'I'll descend straight down.' (Street & Street, 1989)

The proposition of an inherent Daly language family by Tryon in 1974 has been disputed since its introduction. Critiques against the classification include evidence that several languages around the Daly region exhibit very similar grammatical features, such as two-stemmed predicates often consisting of an uninflected verb and a finite verb contributing semantic information to the verb compound. This means that there is limited evidence that many of the features deemed unique to the 'Daly language family' do not also prominently occur in many, if not most, languages in the vicinity of the geographical Daly region (Reid, 2003).

1.2.1. Noun incorporation in the Daly languages

A salient feature of the Daly languages is use of noun incorporation. In fact, noun incorporation has been claimed as being a decisive factor for classifying Northern Australian languages as polysynthetic (Evans, 2017; Bickel and Nichols, 2007[2]). All languages within the Daly region feature noun incorporation to varying degrees (Nordlinger, 2017). Languages vary in what type of nouns they are likely to incorporate into compounds. Certain Daly languages such as Murrinh-Patha, Marri Ngarr and Ngan'gi (Nordlinger, 2017; Reid, 1990) have been claimed to exclusively (or almost exclusively) incorporate body-part nouns. Across the Daly languages, body parts are productively incorporated and can be used as predicates and

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[2] Bickel and Nichols refer to polysynthetic languages in general, not specifically Northern Australian languages.

coverbs to extend the semantic range of the body, but also to specify an activity denoted in an utterance, as shown in the examples from Malak-Malak below (Nordlinger, 2017; Hoffmann 2020):

men-   wu-   net- tjed
stomach-3sg.n-bad-stand
'Unhappy, lit. stomach is bad' (Hoffmann, 2020)

did- mirrit   yi- de-   nu
tooth-leave.mark 3sg.m-go/be.prs-3sg.m
'He teases him' (Hoffmann, 2020)

Body parts are generally polysemous, as they often denote objects with which they are deemed to have iconic similarities. Examples from Malak-Malak include *wurru* 'arm, tree branch' and *numurru* 'eye, seed' (Hoffmann, 2020).

As seen here, the incorporation of body part nouns within Daly languages has been documented by scholars. At the same time, the incorporation of non-body part nouns in Daly languages have been given only brief attention.

Existing literature on noun incorporation in Daly languages shows that, for many languages such as Emmi, it is, at least theoretically, possible for any noun to be incorporated into a compound (Ford, 1998). This stands in contrast with the fact that in spoken language, incorporation of non-body parts is rare in the Daly languages, a discrepancy which is not entirely clear.

1.3. Theme and research questions

This study addresses the apparent gap in our knowledge of non-body part noun incorporation in the Daly languages. Up until now, no cross-linguistic overview on this specific phenomenon has been published. This paper provides an overview and analysis of NBPNI in the Daly languages based on instances identified in the existing literature.

This paper will aim to identify and categorize non-body-part noun incorporation in Daly languages, and whether the nouns suitable for incorporation exhibit patterns, such as belonging to specific noun classes, having morphosyntactic or semantic correlations.

The research questions for this study are as follows:

● Are there any discernible semantic, syntactic and discourse-related patterns in the incorporation of non-body part nouns in the Daly languages? For example, do such nouns belong to particular semantic domains?
● What are the similarities and differences in such incorporation among the Daly languages? Cross-linguistically, how widespread is the phenomenon?
● Can this approach to noun incorporation contribute towards our understanding of genetic relationships, language contact and diachronic change in the Daly context?

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2. Background

In this section, previous research on noun incorporation and the Daly language group is presented.

2.1. Noun incorporation

There is some consensus that a higher degree of transitivity of a verb strongly increases the possibility of noun incorporation, regardless of semantic or syntactic features (Olthof et.al., 2021). Baker (1985) claims that incorporation is a purely syntactic process, and that lexicality does not influence what constituents may be incorporated. He states that only nouns which function as internal arguments can be incorporated; as a result, nouns as objects can be incorporated by transitive verbs, while nouns as subjects can be incorporated by intransitive verbs. The notion of verb classes thus plays a decisive role in restricting noun incorporation, in that non-ergative (and thus intransitive) verbs cannot incorporate any subject arguments since these would intrinsically be external (note that the concept of ergative and non-ergative verbs differs from that of ergative-absolutive alignment mentioned earlier).

Baker's view is challenged by Aikhenvald (2007) and Caballero (2008), who note that semantics do influence restrictions on noun incorporation, exemplified in that many languages only allow for body-part nouns. Mithun (1984) further claims that the transitivity of a verb is linked to semantic features of its patient argument, and that highly affected patient arguments are indicative of a high degree of transitivity. She further notes that verbs usually taking animate, agentive or individuated patient arguments are less fitted to incorporate, and that verbs with high semantic generality are more likely to incorporate.

Mithun's notion is challenged by Olthof (2020), who states that individuated patient arguments are indicative of verbs which are semantically low-transitive, and that arguments of this kind have been found to be more extensively incorporated than their non-individuated counterparts. This would then suggest that noun incorporation is rather more likely to occur with low-transitive verbs. Vigus (2018) finds that for many incorporating languages, noun incorporation is often associated with a low individuation of a patient argument.

Likely, it seems that incorporation is a result of both semantic and syntactic factors. A recent article on noun incorporation (Olthof et.al., 2021) (where the Daly language Marrithiel was examined, among others) shows that both theories hold value: They confirm that verbs that are syntactically high-transitive or patientive intransitive are most likely to incorporate nouns, corroborating Baker's claim. Speaking against Baker's claim, Olthof et.al. find that verbal restrictions on noun incorporation can occur lexically, without exhibiting syntactic, or even semantic, patterns. At the same time, semantics were found to play a significant role, which can be generalized as *the broader the semantics of a verb or a noun, the likelier noun incorporation becomes*. Ford (1998) describes that lexical incorporation "derives a new verb stem whose meaning is idiomatic, that is, not inferable from the meanings of its constituent parts; it must be learnt". Lexically incorporated nouns cannot be paraphrased in external phrases, and are thus part of a non-productive incorporating process.

As stated earlier, Daly languages tend to favor incorporation of body part nouns, with other nouns being much more rare, specifically in languages such as Murrinh-Patha and Marri Ngarr (Nordlinger, 2017). This is often the case for many languages categorized by Mithun as Type II incorporating languages;

when an incorporated noun 'replaces' the slot usually vacated by class markers, creating an effective device for speakers for "manipulating case relations within clauses" (Mithun, 1984). Mithun states that one explanation for why body parts are particularly favored for incorporation cross-linguistically is that body parts are frequently used for, or affected by, commonly occurring activities. This rings true for the English language as well, with lexical compounds including *hand-washing*, *tooth-brushing* and *breast-feeding* (though this is an instance of non-productive noun-verb compounding, not noun incorporation). Another factor in favor of body part noun incorporation is that it allows for a grammatical 'promotion' of certain items through discourse manipulation. Mithun's examples from the Blackfoot language below explains this phenomenon; in example (b.), the possessor of the body part has been promoted from oblique pronoun to a subject, thereby stressing that the *possessor* of the body part is affected by the pain, rather than just the body part itself. As shown in Mithun (1984), the possessor thus has a more agentive role in example (b.) than they do in example (a.)

(a.)   N-o'kakíni á-   isttsi-wa
        my-back   DUR-pain-it
        'My back hurts' (Mithun, 1984)

(b.)   Nit-á-   istts- o'kakíni
        I-   DUR-pain-back
        'I have a backache' (Mithun, 1984)

The phenomenon of incorporation of body-part nouns as well as other nouns has been studied extensively, however this process within Daly languages has been relatively understudied. Specifically, the incorporation of non-body-part nouns in the Daly region has only been described briefly in short sections in grammars on specific languages. On the reason why body parts are favored extensively over generic nouns in incorporation processes, Van Egmond (2012) suggests for Enindhilyakwa, an Australian language of the Northern Territory, that incorporable non-body-part nouns are often originally derived from body parts which have been semantically extended. If noun incorporation is partly a method to effectively convey meaning regarding activities (physically or metaphorically) performed with the body, the question arises of whether other common activities denoted by other common nouns associated with e.g. landscape or spatiality, also promote the use of noun incorporation.

Examining the semantic as well as syntactic components in the process of non-body-part noun incorporation provides an interesting insight into the structure within - and possible interplay between - these domains. It may provide knowledge of how the process of NI into verbal compounds is constituted when denoting activities not explicitly linked to the body, if there are semantic factors, such as environment or culture, or factors involving discourse structure and manipulation, affecting this linguistic phenomenon. Moreover, studying NBPNI may provide valuable contributions to the knowledge of this process generally, and to the limited materials on said process within the Daly languages specifically.

2.2. Previous research on the Daly languages

Some of the early academic publications on the cultures and languages around the Daly River include Mackillop (1893), Basedow (1907) and Capell (1940). The first substantial overview on the languages was published by Tryon in 1974, and was also the first to categorize the languages around the Daly River into a separate language family. Evidence has been presented for a hypothesized proto-Australian

language from which all Australian languages have originated from a proto-Australian language. Other claims have postulated that this proto-Australian subsequently formed into two separate language families, with non-Pama-Nyungan (NPN) languages located in the Australian north and northwest, and Pama-Nyungan elsewhere. More modern hypotheses claim that the categorization of northern Australian language into separate families is misleading, and prefer using the term *clusters* or *Sprachbunds*, which differ in their descendancy (Nordlinger, 2017; Evans, 2003). Tryon's groupings, which were often based upon very short word-lists for the different languages, have been the subject of criticism, with several researchers pointing to insufficient evidence of genetic relationships between the languages for them to be classified as a separate family (Green, 1989). Most of the grammars of non-Pama-Nyungan languages remained undescribed until the 1980s and 1990s. By contrast, a large number of papers on Pama-Nyungan languages had been published and garnered much excitement by the 1970's (Evans, 2003). The discrepancy between the limited research on NPN languages and the multitude of studies on Pama-Nyungan languages is attributed by Evans to the linguistic complexity in the NPN languages, making the use of a comparative method for morphological reconstruction a highly time-consuming task.

More recently, a few documentation projects have targeted the Daly languages. These include Hoffmann's work on spatial references in Malak-Malak (2013), Nordlinger's research on Murrinh-Patha (2019) and a paper on the phonology of Marri Tjevin by Mansfield & Green (2021). Furthermore, Nordlinger and Green are currently undertaking the *Daly Languages Project*, compiling and making accessible existing resources, recordings and field notes on the languages (Green & Nordlinger, 2022).

Studies on the Daly languages have seldomly targeted noun incorporation specifically, but there appears to have been a recent surge in interest in this topic, with a growing number of articles being published on the subject. Examples include Hoffmann's 2020 documentation of semantic body part extensions in Malak-Malak and Leslie O'Neill's comparative study of NI in Australian languages (2020).

2.3. Language statuses

In terms of language protection, several revitalization projects on Australian languages are currently underway, such as First Languages Australia's Priority Languages Support Project, commissioned by the Australian federal government. However, the Daly languages included in this project are limited to Marri Tjevin, Marri Amu and Magati Ke (First Languages Australia, n.d.).

The different statuses and number of speakers of the Daly languages is not readily accessible. There appears to have been insufficient documentation on the endangered linguistic communities, as the most recent figures often date more than a decade (and in many cases the data is as far back as the 1960's), and which only give estimates to the number of speakers of specific languages. Thus, it remains unclear exactly how many speakers the different Daly languages have. In many communities in the Daly region, indigenous languages have also been increasingly replaced with English-based lingua franca Kriol. Table 1 demonstrates the classification of the Daly languages according to contemporary academic consensus (Nordlinger, 2017; Green & Nordlinger, 2022). Table 2, based on data from Nordlinger (2017), displays what type of nouns (body parts only / body parts as well as non-body-part nouns) are eligible for incorporation within each of the respective Daly languages.

Table 1: *Classification of the Daly languages* (based on data from Nordlinger, 2017)

Western Daly

Marri Ngarr	Marrithiyel	Marramaninjsji	Merranunggu
Magati Ke	Marri Tjevin		Emmi
	Marri Ammu		Menthe
	Marridan		

Southern Daly

Murrinhpatha	Ngan'gikurunggurr
Murrinh Kura	Ngen'giwumirri
	Ngan'gimeri

Anson Bay (Wagyadyic)

Batjamalh

Pungu Pungu

Eastern Daly

Matgnele	Kamu
Yunggur	

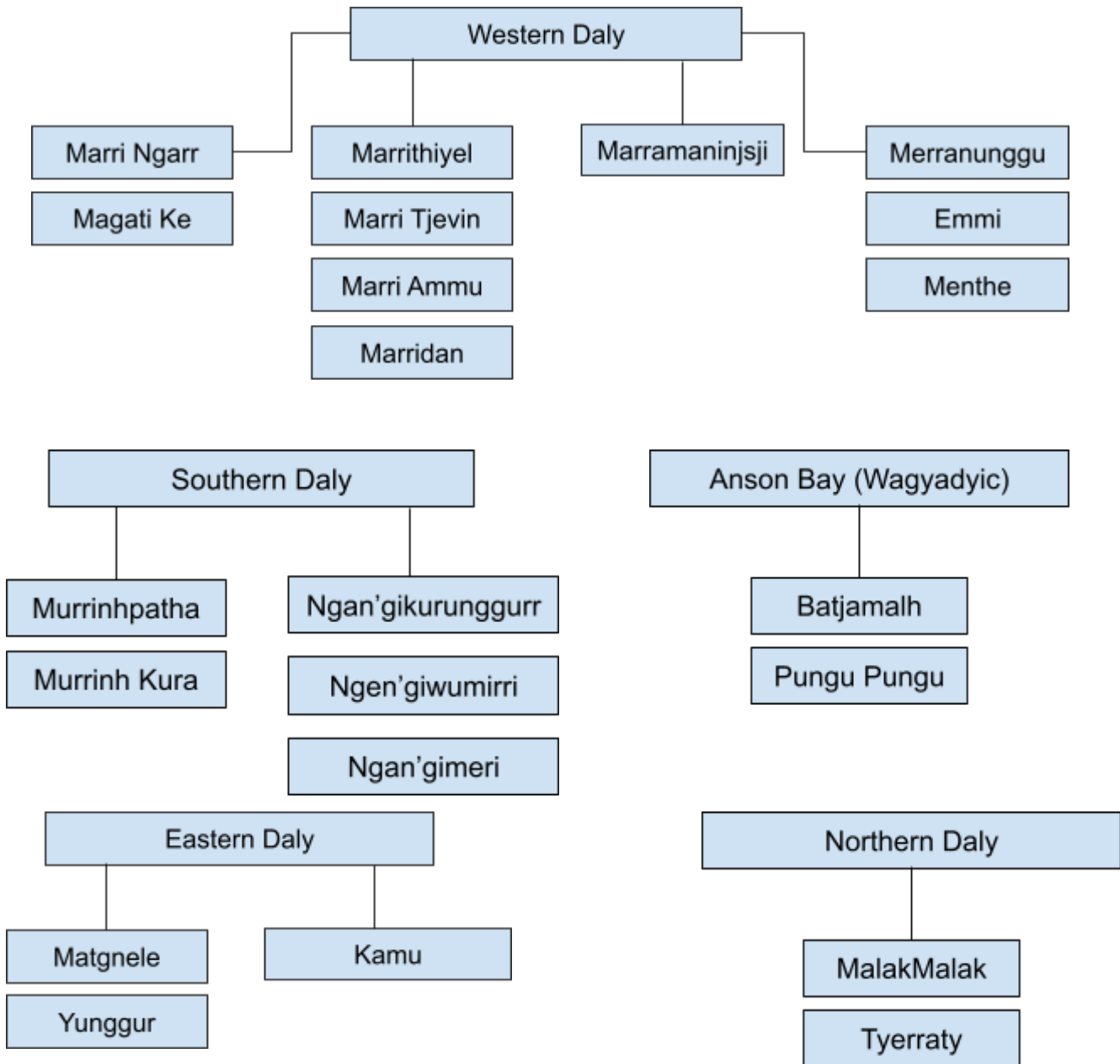**Northern Daly**

MalakMalak

Tyerraty

Table 2: *Types of noun incorporations in the Daly languages.* Languages classified as belonging to the same tertiary subgroup are color-coded correspondingly. Based on data from Nordlinger (2017).

Northern Daly	Noun incorp.
Malak-Malak	Body parts + non-BP
Tyaraity	?

Wagyadyic	Noun incorp.
Batjamalh	Body parts + non-BP
Pungu Pungu	?

Western Daly	Noun incorp.
Marri Ngarr	Body parts
Magati Ke	?
Marrithiel	Body parts + non-BP
Marri Tjevin	?
Marri Ammu	?
Marridan	?
Marramaninjsji	?
Emmi	Body parts + non-BP
Merranunggu	?
Menthe	?

Southern Daly	Noun incorp.
Murrinh Patha	Body parts
Murrinh Kura	?
Ngan'gikurunggurr	Body parts + non-BP
Ngen'giwumirri	Body parts + non-BP
Ngan'gimeri	Body parts + non-BP

Eastern Daly	Noun incorp.
Matngele	Body parts + non-BP
Yunggur	?
Kamu	Body parts + non-BP

3. Methods and materials

The research was conducted as a qualitative typological study drawing on existing sources on the Daly languages. The topic of non-body part noun incorporation (subsequently referred to as NBPNI) was chosen to provide the first ever systematic compilation of such phenomena in the Daly languages to date.

Although there has been recent work regarding the Daly linguistic region, many of the sources used in this paper date back to the 1970's. As Nordlinger and Mansfield have recently demonstrated, diachronic change entailing grammaticalization and extensive allophonic variation have taken place in Marri Tjevin and Murrinh-Patha. It is therefore probable that similar changes have occurred in other languages in the region. The evidence presented here is solely based on glossings and other linguistic data available for the Daly languages, and may thus not be representative of the linguistic features of these languages as of today. Such issues are highly relevant and problematic for research on endangered or extinct languages, not only Daly. Wilson (2008) discusses this issue, arguing that all documentation and

research conducted on endangered languages is of interest and benefit, even though the data and resources on them may be limited.

Obtaining data for this study oftentimes proved challenging, both given the limited resources on the Daly languages and the fact that the respective languages often have different names and spellings (Bachamal, for instance, is also known as Batjamalh, Wogait, Wadjiginy and Murinwargad), depending on the author and date of the given material. Ultimately the literature (on Daly languages and in which relevant data was found) used in this study amounted to 28 books, articles or grammars, and a total of 76 instances of non-body-part noun incorporation were found from 10 languages. Below, short descriptions on the existing documentation and literature on the respective languages used in this study will be given.

Matngele: Very little has been written on the Matngele language. It is briefly described in Tryon (1974), and analyzed in more detail in an unpublished grammar on the language (Zandvoort, 1999). Tryon estimated that in 1974, the language had 15-20 speakers, while Zandvoort, 25 years later, stated that the language was no longer in daily use. According to Tryon, Matngele had a high percentage of mutual cognates with Kamu and Yunggur, as well as significant cognates with Malak-Malak and Tyeraity.

Kamu: Apart from a short mention in Tryon (1974), the language has mainly been academically documented by Harvey (1989, 2003). No fluent speakers of the language remain, and the most recent collection of materials on Kamu was elicited from its last known speaker in 1990.

Ngan'gi: Reid (1990) uses the name Ngan'gityemerri to cover the languages Ngan'gikurunggurr and Ngen'giwumirri. McTaggart & Green treat Ngan'gikurunggurr and Ngen'giwumirri as close varieties of one language, which they term Ngan'gi. Since both language varieties share the same number of finite verbs, 90% lexical cognates and are mutually intelligible, it seems reasonable to also treat them as such in this study.

Murrinh-Patha: Murrinh-Patha is the only Daly language which is not under imminent risk of endangerment and is spoken by over 2000 people (Nordlinger, 2017; SBS census, 2021). It has been the subject of relatively much research, more than any other Daly language, likely because of the robustness of the language, alleviating the obtaining of data. This has made it possible to document diachronic change within Murrinh Patha (Nordlinger, 2019).

Bachamal: The Bachamal grammar and phonology is the subject of a 1990 thesis conducted by Ford, and is also comparatively discussed by Tryon (1980) in relation to the closely related language variety Pungu-Pungu.

Pungu-Pungu: Apart from a sketch grammar by Tryon (n.d.) and the aforementioned comparative 1980 paper, Pungu-Pungu, now extinct, has received virtually no documentation (Green & Nordlinger, 2022).

Emmi: No speakers of Emmi remain (Daly Languages Project, 2022) today. The language is mentioned in Tryon (1974), a comprehensive grammar has been written by Ford (1998) and there are some shorter field recordings and notes (Green, 1992) but apart from that, Emmi remains undocumented.

Merranungu: As is unfortunately the case for many Daly languages, data on Merrangungu (Maranungku, Wargat) is highly limited; It is mentioned briefly by Ford (1998) and Dineen (1990), where they give no more information on the language apart from it exhibiting symmetrical verb root reduplication. It is the subject of a grammar by Tryon (1970) which serves as the key published resource on the language.

Marri Ngarr: Marri Ngarr has, until recently, undergone very little research; It is described briefly in Tryon (1974), and Ford (2005) has published a linguistic analysis of Marri Ngarr songs. More recently, Bicevskis (2023) documents the language's grammar, phonology and syntax in detail in a PhD thesis, a valuable contribution to the limited knowledge of Marri Ngarr.

Marrithiel / Brinken: The name 'Brinken' has often been used to refer to all language varieties (Marrithiel, Marri Ammu, Marri Dan, Marri Tjevin) in one of the four branches within the Western Daly languages. The four varieties have been claimed to be so similar that they should be treated as dialects (Mansfield & Green, 2021). This is corroborated by Green & Nordlinger (2022), who state that there seem to be no grammatical differences between Marri Tjevin and Marri Ammu, and that the two are mainly distinguished by minor lexical and phonological differences. This stands in contrast with the view of the local community in the region, which claims that the four varieties are in fact separate languages. The grammar and phonology of Marrithiel received significant documentation in a 1989 PhD thesis by Green, but has since gotten less attention.

Malak-Malak: Malak-Malak has been the subject of relatively much research during the last decades. Hoffmann, in particular, has written extensively on body part noun incorporation in Malak-Malak (2020), and the verbal structure of the language has been documented by Cahir (2006), while Birk (1976) provided the first and, as of this paper, only extensive overview of the phonology and grammar of the language. It is classified as belonging to a separate northern branch of the Daly languages, however this categorization has subsequently been subject to some criticism. McGregor (2002, in Cahir, 2006) even claims that Malak-Malak rather should be defined as a 'grammaticalized version of Ngan'gi'.

To find resources, digital data collections with compilations of academic papers on the subject were used. These databases included: LubCat, LLBA (Linguistics and Language Behavior Abstracts), Researchgate, Ethnologue, Glottolog. Of great use was the online database dalylanguages.org, run by Rachel Nordlinger and Ian Green, where many academic papers and field notes written on each of the Daly languages were listed. This greatly alleviated finding relevant articles for this paper.

Papers published by the Australian Open University were freely available for downloading. Other resources were not accessed, meaning that the sources used in this paper are not exhaustive. The Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) were contacted and asked if they could provide dictionaries and grammars on specific Daly languages. Unfortunately, the organization was unable to provide said materials.

The process of accessing sufficient resources on the languages that could be relevant to this paper proved challenging, since materials on the Daly languages in general, and non-body part noun incorporation in particular, is very limited. For the languages Yunggurr, Murrinh-Kura, Tyerraity, Menthe, Marramaninjsji, Magati Ke, Marri Ammu, Marri Dan and Murrinh Kura, the resources were either nonexistent or not deemed relevant for this paper; several of them were only mentioned very briefly in Tryon (1974).

Most of the papers included glossings of transcribed utterances from native speakers of the different languages. These glossings were used as a basis for the analysis and evidence provided here. Only examples including non-body part noun incorporation (defined below) were regarded.

The definition of noun incorporation employed in this analysis builds on Leslie O'Neill (2020):

- Noun incorporation is a construction in which a noun is fixed to a verb, while not changing the grammatical role of the verb; in other words, the construction still mainly functions as a verb.
- The incorporated noun must have a syntactic role in the clause, and not just change the semantics of the verb phrase.
- The incorporation must be *productive*, i.e. speakers enjoy relative freedom in incorporating nominals into serial predicate constructions in terms of syntax, and are not heavily restricted in which nominals are suitable for incorporation.

Leslie-O'Neill's criteria will be used in this paper to distinguish noun incorporation from related types of compounding (lexical compounding, noun declension), the reason for this being that they provide a clear definition which is specifically constructed for Australian languages. To these criteria, however, one more is added to tailor to the relevance of the current study, namely that *the incorporated noun must not be a body-part*. An exception to this rule occurs whenever a non-body-part noun shares the same orthography as a body part noun, or is semantically derived from such a noun (a prominent linguistic feature which will be discussed further below). Also, a body-part noun may also be incorporated in the compound if there is also a non-body-part noun incorporated. The data was then compiled and qualitatively analyzed to find possible cross-linguistic correlations, either in the syntactic or the semantic domain, or both.

4. Data and Results

In this section, identified instances of non-body part noun incorporation for each of the relevant Daly languages are provided. The languages are divided into linguistic branches as shown in table 2. The data from this section will be discussed language-specifically and cross-linguistically in the Discussion (Section 5).

4.1. Eastern Daly

Both of the Eastern Daly languages, Matngele and Kamu, are extinct. The following data is taken from two sources, Zaandvoort (1999) and Harvey (1989).

4.1.1. Matngele

Despite the limited resources on Matngele, several examples of non-body-part noun incorporation were found. Semantically, the compounds with NI were often linked to event types regarding spatiality and/or action. Furthermore, Matngele provides one of the only found examples of incorporation of nouns denoting dreamtime narratives and spirits:

(1)   jerrerek yang.gak durk-jeyn-doet-ningiyn
         jerrerek   yang.gak   durk   -   jeyn   - doet   -ningiyn

old man   3MSgoP   **dreaming   -   make**   - INCH - 3MSsitIMPF
"The old man became a dreaming" (Zaandvoort, 1999)

(2)   gawuy   nguru,   **mirr**- darr-denek-   wa-ga-   yang.g-   awa
grandfather 1MIN   **spirit**-see-3MSdoP-   get-come-3MSgoP-1MINO
'My grandfather brought my spirit to me' (Zandvoort, 1999)

In non-noun incorporating verbal compounds, the semantically specifying verb is placed in front of the event verb, as shown in the example below:

(3)   motika-ni   datj-den-nung
car-   AGENT   hit- cut- 3MO
'The car hit him' (Zandvoort, 1999)

Other non-body part nouns incorporated into compounds were concrete nouns, as shown in (4) and (5). When non-body part nouns are incorporated, the noun usually replaces the first verb and syntactically and semantically functions identically to the verb it replaces.

(4)   jiji   **jal**   - wut - burrudam
man   **road**   - lie -   3ASdoPR
'The men lined up' (Zandvoort, 1999)

(5)   jal   - darr - mungu - eynji   ngoeynboerr jut   -   buk- gaynjurdang
road - see - COM - 2MSgoFSubj snake   step on -   ?-   2MSdoCOND
'Watch where you're going. You might step on a snake' (Zandvoort, 1999)

Non-body-part noun incorporation also occurs for non-physical nouns. In the example below, the action of 'talking back' is expressed through a figurative 'throwing' of a word. This type of semantic extension is common in all Daly languages, but is mostly reserved for body parts. The construction in (6) is also unusual as it consists of a noun + verb + verb + coverb, thereby constituting an exception from the previous rule of non-body-part noun incorporation.

(6)   dagatj   mat-   lam-ditj- gatj- awa
NEG.IMP **word**-   talk-return-throw-1MO
'Don't answer me back' (Zandvoort, 1999)

4.1.2 Kamu

Harvey (1989) gives a few examples of non-body-part noun incorporation. The following excerpt is similar to example (44) in Bachamal and example (4) in Matngele:

(7)   werek-giyik may-ma   wabuy=anyayn   **jal**- **warryet**-ma
child-   little that- PRM take=   2MS.Aux.PP **road-walk**- IMPF
'Did you take that kid for a walk on the road?' (Harvey, 1989)

Harvey (1989) suggests that nouns eligible for incorporation in Kamu are restricted to their semantic scope, which he refers to as their *range*. Importantly, this *range* is purely semantic and is to be viewed as such, as it refers to the concrete geographical dimensions and confinements of the place of the action

denoted by an utterance. Only nouns with a *range* function may be incorporated. The *range* or *scope*, in Halliday's (2004) terms, refers to an overarching domain in which a process occurs, but which is unaffected by the process itself. This is exemplified in (7), where the semantic *range* is the *road*, and the process taking place within it is *walking*.

As often found in Daly languages, the infinitive form of many verbs are identical to its nominalized form, as in the example below.

(8)   **yel**- doet=eningiyn
        hide-sit= 1MS.Aux.PP
        'I hid' (Harvey, 1989)

(9)   **yel**-   ma- durrk-ma= birriti
        secret-IMPF-drink-IMPF=3AS.Aux.PI
        'They drank it secretly.' (Harvey, 1989)

'Secret' is also provided in the following form, also in an incorporated compound:

(10) doerrbet=nung=ewuy   nang.ga **barldam**-buy=ganiyn
       tell off= 3MO=1MS.Aux.SUB but   **secret**- go= 3MS.Aux.PP
       'I wanted to tell him off, but he had snuck off.' (Harvey, 1989)

The noun *dawu* 'trouble' is the same for Kamu and Matngele.

(11) **dawu**-   lerr-diyn= ayayn-   ma ngelu mern-ber   =emiyn
       trouble- bite-ABL=1MS.Aux.PP- PRM before heart-calm down=1MS.Aux.PP
       'I was angry before, but I have calmed down (now)' (Harvey, 1989)

(12) manyu-ma **meyn**-   jeljel-ma= bini
       those- PRM **corroboree**-sing- IMPF=3AS.Aux.PI
       'That lot sang corroboree' (Harvey, 1989)

As with Matngele, noun incorporation appears in Kamu in non-spatial verbal compounds:

(13) wanyungu **mat**- biyandak=ngu= birri
       Neg   **word**-listen=   1MO=3AS.Aux.SUB
       'They did not believe me' (Harvey, 1989)

4.2. Southern Daly

4.2.1. Ngan'gi

In comparison with other Daly languages, Ngan'gi exhibited a relatively low degree of NBPNI according to the criteria mentioned in the Methods section. Instead, the language has some significant differences regarding its highly salient use of lexical compounding. It would seem likely that many nouns in lexical compounds have undergone grammaticalization, as several common words categorized as adverbs or

adjectives consist of a noun and a demonstrative, which subsequently only retain their semantically specifying function only in conjunction with each other.

A useful example of this phenomenon is the place noun *ganggi* 'sky, top'. The noun can be productively incorporated with a large number of lexical items, forming new, sometimes polysemous, items:

(14) **mirr** - **ganggi** - ninggi
      sun - **top** - during
      In the daytime'
          (Hoddinott & Kofod, 1988)

(15) **ganggi**-wirribem
      top -stand
      'Be high up/overhead (of sun)'
          (Hoddinott & Kofod, 1988)

(16) **ganggi**-derri
      top- stand
      'Up on the bank'
          (Hoddinott & Kofod, 1988)

(17) **ganggi**-derri
      top- ridge
      'High plain'
          (McTaggart & Reid, 2008)

The same is true for *kuri* 'water':

(18) **kuri**- tyerr
      water-mouth
      'Liar'
          (McTaggart & Reid, 2008)

(19) **ngangi**- **kuru**- nggurr
      language-**water**-middle
      'The language of the middle of the water'
          (Hoddinott & Kofod, 1988)

Apart from being used in lexical compounding, *ganggi* can also be incorporated into a verbal compound:

(20) dim-**ganggi**
      sit- **top**
      'Be able to sit up (baby)'
          (Hoddinott & Kofod, 1988)

(21) dem+**ganggi**
      lift-**top**
      'Lift up'
          (McTaggart & Reid, 2008)

Other examples of non-body part noun incorporation include physical objects such as *misyin* 'hearth' and *kuri* 'water'. Also found incorporated was the abbreviated form of water *ku*. It can be compounded to the coverb *buk* to form a verbal compound meaning 'soak up'. McTaggart and Reid (2008) provide no glossings for the following examples but it is clear from their description that these are instances of non-body part noun incorporation.

(22) Lawa ngerim melpe, nganam **misyinkuli** yenggi
      'I spread the dough out flat, and dropped it onto the coals.' (McTaggart & Reid, 2008)

(23) miringgi yu-   fi- **misyin**-wurity
      leaf   2sg.Slash-Mp-**hearth**-place
      'Throw the tealeaf into (the billy) the fire!' (Reid, 1990)

(24) Wuruni   guniguni dem   mentyi-fityi malarrgu yi
      C(ii).DEM(r)   old woman 3s.P.VC13.PRES   neck- wring turtle   and
      yengki-nide   yenim   **misyin**-kulli
      fire-   LOC   3s.P.go.PRES **oven**- throw
      'That old woman wrung the turtle's neck and threw it on the fire' (Hoddinott & Kofod, 1988)

In (22), *misyinkuli* is a compound of the noun *misyin* 'hearth' and *kuli* 'throw'. Reid (1990) notes that *misyin* can only be lexically incorporated and may not be freely compounded with a verb, but does not delve deeper into the explanation of this rule. Several other verbal compounds containing *misyin* were found:

(25) **misyin**-kulli   put on a fire
(26) **misyin**-pudup   blow fire and make it burn
(27) **misyin**-pul   uncover (food in fire)
(28) **misyin**-pup   put beside fire/put in fire
(29) **misyin**-wa   take out of fire
(30) **misyin**-wurity   make an oven, put in fire   (Hoddinott & Kofod, 1988)

Reid and McTaggart's dictionary further describes a compound verb *gubuk* 'soak in' consisting of *gu* 'water' and an unidentified coverb, *buk*:

(31) Ngupun kurr kuri kana dinging **gu**buk ngityirr → 'I dug up the soil the water could soak in'
                                                              (McTaggart & Reid, 2008)

'Water' is found commonly incorporated into verbal compounds in Ngan'gi.

(32) kuru   wibem-**bu**-   tyerr
      water 3sgLie-**water**-stop
      'Water is lying (across the road)'
(33) ngaganim-**bu**y → 'I'm going along underwater'
(34) ngerim-**bu**bu → 'I fetch water'
(35) deminy-**bu**bu → 'It (turtle) blowing bubbles' (Hoddinott & Kofod, 1988)

As seen with many other Daly languages, the coverb *mirrmirr* appears in Ngan'gi. A cross-linguistic comparison of instances of *mirrmirr* will be discussed in 5.2.1.

(36) müdiga wirribem=   mirrmirr-nyine
      car   3sg.Stand= thunder -FOC
      The car's running now. (Reid, 1990)

4.2.2. Murrinh-Patha

Based on the data used in this study, Murrinh-Patha, together with Marri Ngarr, was deemed the most restrictive in its non-body part noun incorporation of all the Daly languages. Commonly found were constructions that resembled noun incorporation, but which rather were instances of incorporation of noun class/animacy markers. The following example was the only one found in which non-body-part noun incorporation occurs, if the criteria are strictly followed.

(37) kardu **palngun**-nyi-   ma
      PERS **woman**- 2S.DO-HAVING
      'Do you have a wife/girlfriend?' (Mansfield, 2014)

Here, 'ma', glossed by Mansfield as 'having' is used as an applicative but originates from the body part noun 'arm'. It would therefore seem that when non-body-part noun incorporation occurs, it always does so in conjunction with body part nouns (even though the body part noun in question has been grammaticalized into an applicative). This supposed pattern can be substantiated by looking at the examples of lexical compounds below, where nouns are compounded with body part nouns. These examples were more difficult to define as being instances of noun incorporation, if the previously mentioned criteria are to be followed. Several glossings found exhibit both body-part nouns and non-body-part nouns incorporated into compounds, but had no explicit verbs. Syntactically, though, auxiliary verbs can be productively replaced by body part nouns. As the body part nouns in the examples can be said to function as predicates, they will be treated as such here, and the compounds will be treated as examples of non-body-part noun incorporation.

(38) lirwi-   ŋi-   ɟi
      sore - 1sg- buttocks
      'I have a sore on my buttocks' (Walsh, 1976)

(39) dʸebdʸeb- ø-   tayyi
      food-   3sg-lip/mouth
      'He's greedy for food (vegetable)' (Walsh, 1976)

Though there may seem to be a correlation between NBPNI and the simultaneous occurrence of body-part nouns, more data from the language is needed in order for such any generalizations to be reliably made. The low number of tokens that arguably could fit into and substantiate this hypothetical pattern does not constitute sufficient evidence for drawing any definite conclusions on the matter. Nevertheless, given that Murrinh-Patha is a relatively viable language with a significant number of speakers, there is potential for further exploration of this domain in future studies.

4.3. Anson Bay

4.3.1. Bachamal

Bachamal displays a relatively high flexibility when it comes to non-body-part noun incorporation. Ford (1990) shows that 33 lexemes in object function are incorporated, 15 of which denote body parts. The incorporation process in Bachamal also has semantic implications; a compound consisting of an incorporated noun and an intransitive verb from noun incorporation denotes a 'unitary concept' (Ford, 1990) and more intimately intertwines the noun into the activity.

A good example of this is the verb *mønme/piŋc* 'climb' (no distinction between these verbs was found in Ford 1990 grammar), which cannot stand alone and must be preceded by a nominal or coverb in order to be syntactically acceptable. Therefore, a number of nouns, when in the function of the object, can be syntactically and productively incorporated with 'mønme/piŋc', exemplified below:

(40) kel-mønme   (41) paŋan-piŋc
      path-climb   **song**-climb
      'Climb' (Ford, 1990)   'Sing' (Ford, 1990)

Other examples in which an incorporated noun can semantically specify an activity include the nouns *nitirr* 'line' and *kel* 'path'.

(42) nitirr-pe
      line-go
      'Go fishing' (Ford, 1990)

(43) nitirr-mi
      line-sit
      'Sit fishing' (Ford, 1990)

(44) nitirr-par
      line-walk
      'Go off fishing' (Ford, 1990)

(45) kel- cetpe
      path-take out
      'Take the lead' (Ford, 1990)

(46) **wik**- nime
      water-fetch
      'Fetch water' (Ford, 1990)

Four additional examples of non-body-part noun incorporation were found (Ford does not provide a glossing for (50)):

(47) pik- karr-   ipe-makka   ŋawulaŋ-makka kaŋ-   pø-mene
      rope-3plA.3sgmONF-hold-PERF   woman- CAU   3sgA.3sgfONF-hit-NF
      'They gaoled him for killing a woman' (Ford, 1990)

(48) **naŋka**-   pø
      clapsticks-hit
      'Play clapsticks' (Ford, 1990)

(49) **yirril**- pikica
      shell-pick at
      'Shed shell' (Ford, 1990)

(50) **mal**-pøce-pø-mene – 'Make **noise'** (Ford, 1990)

4.3.2. Pungu-Pungu

In his sketch grammar on Pungu-Pungu, Tryon (n.d.) does not mention any type noun incorporation or compounding. This is surprising given Nordlinger's (2017) suggestion that noun incorporation is present in all Daly languages. Tryon's glossings consist only of separate words, with a few exceptions where a demonstrative suffix is added to a noun. However, at several points it is mentioned that suffixes are combined with nouns, but in the glossings these suffixes are written as separate words. The omission of hyphens leads this writer to speculatively assume that this omission may extend to possible instances of noun incorporation that were not considered by Tryon, though no convincing examples were found. More data would be needed to make any type of conclusions on the incorporating process in Pungu-Pungu, but, since the language is extinct, it is unlikely that any more will ever appear.

4.4. Western Daly

According to Evans (2003), Emmi, Marranunggu and Menthe together form the dialect continuum Marranj. Ford (1998) instead claims that Emmi and Menthe are dialects, while Marranunggu is a separate, but very closely related, language, citing considerable morphological differences between Emmi and Marranunggu. Apart from being briefly mentioned in Evans (2003), Ford (1998) and Tryon (1974), no relevant data on Menthe could be accessed. According to Green & Nordlinger (Daly Languages Project, 2022), Menthe does not differ grammatically from Emmi. Thus, it seems reasonable to treat Emmi and Menthe as dialects here, assuming that the latter retains a similar grammatical and syntactic structure, with the same flexibility for noun incorporation as the former. To avoid the risk of generalization, Marranunggu will be treated as a separate language.

4.4.1. Emmi (Menthe)

Ford (1998) discusses noun incorporation in detail and claims that in Emmi, any non-body-part noun can theoretically be incorporated into a compound. She describes Emmi as exhibiting incorporation of full productivity, citing Evans' 1996 definition of this term as "Full productivity: syntactically incorporated nominals can appear with any semantically compatible verb lexeme; lexically incorporated nominals cannot". There are, however, some rather strict syntactic rules for productive incorporation; only nouns functioning as a non-reflexive object, or as a locative, are possible to incorporate. Also, the non-body-part noun must always be preceded by a coverb, only one non-body-part noun is allowed per compound and non-body-part nouns may not be incorporated if there is an applicative marker on the verb. A non-body-part noun can, however, appear in a compound in which a body part has also been incorporated, as in example (55).

Ford (1998) lists six tokens of non-body-part incorporated nouns, or what she calls 'general objects': *katpilak* 'bucket', *pedji* 'handle', *dorr*, 'ground', *lektja* 'lecture', *yeri* 'hole' and *wuda* 'water'.

(51) ngarra-   vutitj- **dorr**=   eyi
      1MIN.A.R.handle-clean-**ground**=PERF
      'I cleaned the place' (Ford, 1998)

(52) ganhdha-   wuda=nhdheni gaya
      3MIN.S.R.perch-**water**=now   3MIN.S.R.lie
      'He's anchored (lit. perches on water) now' (Ford, 1998)

(53) ngama-   ngani+   pirr+   **wuda**=   nhdhi=   yi   vere
      1MIN.S.R.stand-1MIN.REFL+throw down+**water**= TOWARDS=PERF   arm (creek)
      'I swam the creek' (Ford, 1998)

(54) ngarrabala yawana=   nene=   nhdha=ya
      1AUG.PRO 3MIN.M.AnaphDEIC=NEW.INF=really= AWAY
      game+   **lektja**= nhdha=ya   gana   perregut
      3MIN.A.R.say+**lecture**=really= AWAY 3MIN.S.R.walk white man
      'That white man I mentioned really keeps lecturing all of us.' (Ford, 1998)

(55) gana-   purr- nunggu-katpilak=enhdheni ganen
      3MIN.SBJ.R.WALK-dance- **hand**- **bucket**= NOW   3MIN-SBJ.R.SIT

'She's sitting beating time (lit. hand-dancing) on a bucket now' (Ford, 1998)

One instance was found in which a non-body-part noun was incorporated while also expressed in an external noun phrase:

(56) pedji   uma+   ngalh+ **pedji**= nhdheni
      handle 2MIN.A.IR.poke+mouth+**handle**=now
      'Sew the handle now!' (Ford, 1998)

Other instances of NBPNI included incorporation of *wuda* 'water':

(57a) gila+**wudi**+yi
      3MIN.A.R.consume+**water**=PERF
      'S/he died' (Ford, 1998)

Compare this with the following example, which is identical to (57a) except for it not having incorporated its noun. The semantics of the two sentences differ greatly:

(57b) wudi gila=yi
      water 3MIN.A.R.consume=PERF
      'S/he drank water/grog' (Ford, 1998)

4.4.2 Merranungu

In his grammar on Merranungu, Tryon does not mention noun incorporation or any verbal compounding (excluding reduplication), according to his glossings. For the most part, Tryon does not write out hyphens between lexical morphemes and affixes, making it difficult to ascertain whether the glossings provide examples of compounding. As Nordlinger (2017) says, all of the Daly languages exhibit noun incorporation to some degree, so it will be assumed that so is also the case in Merranungu. Indeed, Tryon does describe a process which certainly looks very similar to noun incorporation: "When the direct object is a part of the body it occurs twice in the sentence, both before and after the affix unit and verb stem". If we then assume that Tryon has not taken noun incorporation into consideration and omitted hyphens that should actually be written out, we might assume (58) to constitute an instance of NI. This is further corroborated by the very similar construction, both syntactically and semantically, found in Emmi in (57a).

(58) tyaltyara kila   **wuta** yi
      yesterday he drink (NF) **water** past aux.
      'Yesterday he died' (Tryon, 1970)

(58) is assumed to be an instance of noun incorporation since the object (water) is placed after the verb, whereas otherwise in Merranungu, the object would precede the verb (Tryon, 1974), as shown in the following examples:

(59a) tyaltyara wuta   turwu kengila   yi
      yesterday water bitter I drink (NF) past.aux.
      'Yesterday I had a drink of beer' (Tryon, 1970)

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(59b) wuta nungu anya   kur   ngenila
     water here   you(F) get   for.me
     'Bring me some water' (Tryon, 1970)

If (58) is in fact an instance of NI, we might also assume that so is the case for (60), as the object is placed after the verb:

(60)   ngal kangaman tim   **ngal** ayi
      door I.hold (NF) shut **door** past.aux.
      'I shut the door' (Tryon, 1970)

4.4.3 Marri Ngarr

According to Bicevskis (2023), Marri Ngarr is the only Daly language which explicitly does not allow for non-body part noun incorporation. NBP nouns are instead expressed through external noun phrases.

Only one exception to this rule was found in Ford (2005), in which *derri* 'creek' is incorporated:

(61)   awu   pulimi   kumun   +nal   +**derri** kant
      animalINC   white eagle   3SG A R hit.vertically +fly   +**creek** 3SG.SR.walk

      Altjama   Altjama   =ga
      NAME   NAME   =FOC
      'White eagle keeps swooping above the creek at Altjama.' (Ford, 2005)

4.4.4. Marrithiel / Brinken

Unfortunately, Marrithiel was the only language in the Brinken group for which sufficient data was deemed to be found. As was done with the Ngan'gi varieties Ngan'gikurunggurr and Ngen'giwumirri, with a risk of generalization, it will be assumed that all Brinken language varieties share an effectively identical grammatical and syntactic structure, including that for noun incorporation (Mansfield & Green, 2021). The data below is thus taken from Marrithiel.

It will simply be noted here that, although no glossings are provided, Marett et.al. (2013) state that a speaker of Marri Tjevin was recorded incorporating the noun *mandha* 'song' while singing, as shown in (62):

(62)   gidji-djedjet-**mandha**-ya 'he sings out that **song**' (Marett et al. (2013)

According to Green, (1989) non-body-part noun incorporation in Marrithiel is only syntactically productive in just one type of construction, in which the noun functions as a non-reflexive direct object. Marrithiel is also unique in relation to other Daly languages in that an incorporated noun can appear in two different positions in the verbal complex depending on whether it is *syntactically* versus *lexically* incorporated; as in Emmi, lexically incorporated nouns can appear either before or after the lexical stem. In Emmi, this is also true for syntactically incorporated nouns, but not in Marrithiel, where such nouns must always appear after the lexical stem of the verbal complex (Nordlinger, 2017).

As in Emmi, although non-body-part noun incorporation is rare, Green states that any object noun is eligible for incorporation, as exemplified in the diversity of NBP-nouns in the examples below.

(63) titha   yikin-kin   ki-   tin-   ø-   kirr-   thami- ya karrila-kin
      father 1s-   ERG 3sSu-see- 3Ob-sharpen-**point**- past rock-   INST
      "It was my father who sharpened the point with a rock." (Green, 1981)

(64) yibi -njsja nang   ngigin   -ferri-thit   -a   muku -wedi
      there- now   3msPRO 1sS.R.claim foot-put down- Pst **woman**-having
      'I left him (permanently) in that place with his wife' (Green, 1989)

(65) ngirrimun'gi- dutj- **gungguli**- fini ngininj-   fini-wa
      1ES.Ir.paint- pick up-**long yam**-dl 1ES.Ir.go-dl- Fut
      'We (exc, dl) will go gathering long yams' (Green, 1989)

(66) arri-   fesjirr-demi-**ngata**- ya
      2sS.Ir.rr-clean-side- **house**-Pst
      'You (sg) should have cleaned up around the side of the house' (Green, 1989)

(67) garri-   duk-   miri- **yeri**- ya
      3sS.R.rr- pull out-eye-**child**-Pst
      'She delivered the baby' (Green, 1989)

(68) gi   -ingin-fup-   **awu**- ya
      3sS.R.ø-1sG- put.down-**meat**-Pst
      'He gave me the meat' (Green, 1989)

(69) wadi- ng gullik-njsjan / gurr-   ingin- butj- **thawurr**- wa   thawurr gan-gin
      male- s.1 blind-now   3sS.R.rr-1.s.O- have-**stick**- Fut stick   this- INS
      'I'm blind now. He'll lead me with this stick.' (Green, 1989)

(70) ngirrinjinggi-   git-muwarri-**buluki**-fini-wa
      1EXCL.SBJ.IRR.NJ-cut-testicles-**bull**-   DU-FUT
      'We (excl, du) will cut (off) the bull's testicles.'(Green, 1989)

An interesting construction that can be understood only through knowledge of linguistic context in Marrithiel is found in example (71). Here, *yeri* 'child' is compounded with the verb root *batj* 'lie down', functioning as a predicate meaning "to sleep together (as man and wife with the consequence of having children)" (Green, 1989). Green states that *yeri* cannot be paraphrased via an external noun phrase, thereby making noun incorporation obligatory.

(71) ngirr-   iginj   -**yeri**- batj-   ø-wa muku   ganda
      1ES.Ir.rr- 1EG=REFL-**child**-lie down- p-Fut woman there
      'We (exc,pl) and those women (pl) will camp together' (Green, 1989)

Examples (72a) and (73a) below are equally acceptable if the incorporated root instead is expressed via an external noun phrase in object function, as shown in (72b) and (73b). The translations for (72a-b)

and (73a-b), respectively, are identical, so the communicative differences between (a) and (b) are not entailed by these glossings.

(72a) guninj-   felbatj-ngusra- nimbini -ya
      3nsS.R.go-jump- **creek**- trial-   Pst
      'They (3) jumped over the creek' (Green, 1989)

(72b) ngusra guninj-   felbatj-nimbini-ya
      creek 3nsS.R.go-jump- trial-   Pst
      'They (3) jumped over the creek' (Green, 1989)

(73a) ginidin-   mel- **themberri** gininjarr- a
      2sS.R.see-watch-**road**   2sS.R.go-Pst
      'You (sg) were (going along) watching the road' (Green, 1989)

(73b) themberri ginidin-   mel   gininjarr- a
      road   2sS.R.see-watch 2sS.R.go-Pst
      'You (sg) were (going along) watching the road' (Green, 1989)

Though perhaps not an explicit instance of noun incorporation, it will be noted here that similar reduplication processes, as in (74), occur across the Daly languages. A salient example of this is the coverb *mirrmirr* 'thunder', appearing in Marrithiel, Merranunggu, Matngele and Ngan'gi.

(74) ambi ngi   -imbi-sjang-njsjan-ø tharr guwa   -mirrmirr-nganan yigin-   gin
     NEG 1sS.R.ø-2sG- hear- now- Pr thing 3sS.R.stand-thunder-SCE   1sPRO-ERG
     'I can't hear you (sg) now, because of that 'thundering' thing' (Green, 1989)

The semantic factors of such reduplication is then perhaps irrelevant, as Green (1989) does not consider reduplication to have any implications in terms of giving rise to completely new lexical items which still retain semantic connections from the original word from which the reduplicated item derived. For verbs, reduplication will usually denote that an action is repeated, and nouns do not reduplicate together with a verb stem when in a compound. However, no non-reduplicated form of *mirr* in verbal function was found, only *mirr* as a noun meaning 'shadow'. This raises questions regarding the etymology and function of *mirrmirr*, specifically as the word is found across the other Daly language. This will be further discussed in 5.2.1.

In Marrithiel, it is common for two words, either two nouns or one noun and one adjective, to form a lexical compound:

(75) nitji- ngani   (76)   wudi- sradi
      night- body   water-back
      'Morning' (Green, 1989)   'Billabong' (Green, 1989)

Similarly, a noun and a verb can be compounded, the result of which appears to resemble the syntactic function of an adjective, noun or adverb:

(77) **wudi**- wedi   (78)   **muku**- wedi
     liquid-having   **woman**-having

'Drunk' (Green, 1989)   'Wife' (Green, 1989)

Technically, (77) and (78) could be examples of noun incorporation if the previously mentioned criteria are adhered to; they contain a non-body-part noun, compounded with a verb. It becomes more diffuse whether these compounds still mainly function as verbs, however; oftentimes, Marrithiel does not exhibit nouns which easily correspond to English abstract nouns, such as 'fear' or 'heat'. These concepts are instead communicated via complex verb constructions. This phenomenon was found in all of the other Daly languages as well. It should be noted, however, that it would be erroneous to claim that the Daly languages have fewer lexical nouns than English. Many nouns in these languages are instead featured as what a native English speaker would categorize as adjectives, or even verbs. For instance, in the Ngang'i dictionary, *mulfang* 'pointed' is categorized as a noun, while a native English speaker would more likely view 'pointed' as an adjective. When analyzing translation of languages, one must keep in mind that translations are not always easily transferable, either in terms of syntax or semantics (Reid & McTaggart, 2008).

The apparent 'lack' of non-body-part noun incorporation could likely be partly attributed to a semantic domain, namely meronymy. Green (1989) states that the incorporation of body part nouns often pertain to part-whole relations. Noun phrases with object functions are not allowed if the object has a meronymous relationship with the incorporated root, as exemplified below. Compared to the other Daly languages, Marrithiel was unique in this respect.

(79a) a- muning ngirr-   ful-   a   a- muwa
      CA-wing   1sS.R.rr-break-Pst CA-bone
      'I broke the wing-bone' (Green, 1989)

(79b) *a- muning ngirr-   ful-   muwa-ya
       CA-wing   1sS.R.rr-break-bone- Pst (Green, 1989)

Example (79b) is unacceptable, since the semantic relationship between a *wing* and the *bone* within it is meronymous. This provides an interesting insight in how semantic domains can effectively shape the syntax of the language.

4.5. Northern Daly

4.5.1. Malak-Malak

Non-body-part noun incorporation into verbal compounds is rare in Malak-Malak. Only a few examples were found, the following taken from Birk (1976):

(80) piny.waka   (81)   pinywapl
      get **water**.pick up.come   get **water**.pick up.take
      'Get water and bring it' Birk (1976)   'Get water and take it' Birk (1976)

Salient examples of noun incorporation are found in proper names denoting places.

(82) **wak**-purrar-ma
water-go.round-CONT
'Whirly water' (placename, Wakpurrarma) (Yungguny Lindsay et.al, 2016)

A similar process of noun incorporation is also found within another construction, but which here functions as an independent noun:

(83) **wak**-purrar
water-go.round
'Whirly water' (Yungguny Lindsay et.al, 2016)

Many of the instances of non-body-part noun incorporation include landscape nouns such as *wak* 'water':

(84) **wak**- tyaen   tut   woengyoen
water-make?/comit? cause 3wM-GO-impf
'It's becoming wet outside' (Cahir 2006)

Malak-Malak is rather flexible in its verb-noun compounding. However, the absolute majority of these compounds seem to function as noun phrases or adjectives:

(85) **yelk**-ngarrik-purrarr
moon-cheek-go round
'Half moon' (Yungguny Lindsay et.al, 2016)

(86) **yelk**-many
moon-cover up
'Lunar eclipse' (Yungguny Lindsay et.al, 2016)

(87) **wakyɛn**   mataman^y
water.having rain.
'Wet from the rain.' (Birk, 1976)

It seems that in the example below, *noen* 'person, thing' should serve a function as a noun class marker, though this is not corroborated by Cahir. This demonstrates the apparent grammatical flexibility of nominals:

(88) nikita-many taty -ma   yida-   noen muyini
what- for   hit- impf 3mM.GO.past -**thing** dog
'Why is he always hitting that dog?' (Cahir 2006)

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5. Discussion

This section discusses and interprets the data from the Data and Results section. Firstly, in 5.1. we discuss languages for which data deemed most relevant were found. In 5.2., a cross-linguistic

analysis is conducted. A brief discussion on the data's possible implications regarding the genetic statuses of the languages is found in 5.3.

5.1. Language-specific findings

5.1.1. Ngan'gi

According to Green, (1989), Ngang'i only allows for body part incorporation. Green (1989), citing Harvey, also states that in the languages in northern Australia, the 'class of incorporable nouns always includes body parts'. However, McTaggart and Reid's 2008 dictionary contains several examples of non-body-part noun incorporation. Furthermore, Kofod's and Hoddinott's 1988 grammar on Ngan'gikurunggurr from 1988 also clearly show that non-body part noun incorporation is not only possible, but more prevalent than previously claimed (Kofod and Hoddinott do not explicitly discuss the concept of noun incorporation, however, further exemplifying the understudied nature of this linguistic phenomenon).

'Water' is only incorporated into verbal compounds as opposed to noun phrases when it is in the form of *ku/bu* or *bu*, but not as *kuru* or *kuri*. The item is also only syntactically incorporated. The reason for this is unclear, but one explanation might be that *ku/gu* could be a grammaticalized form of *kuri*. Grammaticalization of body part nouns has been documented in the closely related language Murrinh Patha (Nordlinger, 2019).

In many instances, landscape nouns are described using body part nouns. The body appears to not only semantically function as a center of emotion, but is extended to relate the body to its surrounding environment. An example of this are the semantic senses of nouns *derri* 'back' and *madi* 'chest' that have been extended to include ridges and hills, respectively. When body parts are semantically extended to domains outside of the human body, they lose their de- prefix. Many place and landscape nouns however, are typologically identical to their (semantic) body counterpart, and function as independent lexical items, which the prefix-less body parts do not. It could therefore be argued that in many cases, the incorporated noun is not in fact a body part, but a separate landscape noun (regardless of its etymology and possible diversion from the body part nouns.)

5.1.2. Murrinh-Patha

Nordlinger (2019) has demonstrated a diachronic development in which the Murrinh Patha body part noun *ma*, 'arm' has undergone grammaticalization, effectively transforming it into a widely used applicative. She suggests that such applicatives with a noun 'source' may be used to denote animacy in relation to the object, and that this pattern appears to be an aerial phenomenon of the Daly River Region. It is as of yet unclear whether this process also occurs for non-body-part nouns in Murrinh-Patha. In the case of a similar grammaticalization, certain nouns would diachronically change into applicatives, perhaps to the extent that they are no longer considered independent nouns, thus 'explaining' the apparent lack of non-body-part noun incorporation in Murrinh-Patha.

5.1.3. Emmi (Menthe)

As we have seen with Marrithiel, Emmi does not allow incorporation of an object if it has a meronymous relation to an already incorporated root. This is shown in example (53) where the object *vere* 'creek' is

generically related to the incorporated *wuda* 'water'. The object must therefore be paraphrased via an external noun phrase. The external noun thus serves to determine which part of the incorporated noun that denotes the whole (Ford, 1998).

Ford stresses the difference between lexical and syntactic incorporation. In Emmi, all of these six non-body-part nouns may be syntactically incorporated, but only *yeri* and *wuda* have been found lexically incorporated. Emmi provides a strong argument against Baker's claim of syntactic incorporation; Emmi technically allows for any noun to be syntactically incorporated, but it is rare and often replaced through paraphrasing, which is not possible for lexical incorporation. This is exemplified in (57a) and (57b). The lexically incorporated noun water in (57b) cannot be expressed via an external noun phrase, as that would change the semantic sense of the sentence completely, as shown in (57a). Apart from syntactic relations, incorporated nouns function semantically as patient, experiencer or location in relation to its incorporating verb. There is also some semantic difference between syntactic and lexical incorporation; lexically incorporated nouns convey a metaphorical meaning, while syntactically incorporated nouns have a literal sense.

5.1.4. Marri Ngarr

It could be argued that the incorporation in (61) would partly disprove Bicevskis' claim, since it certainly looks like an instance of non-body-part noun incorporation. There are, however, some factors which make assertion problematic. The word *derri* 'creek' is identical to the same word for *ridge* in Ngan'gi (Reid & McTaggart, 2008), which in turn appears to be derived from the body part *dederri* 'backside, spine'. The shape of the spine can then be iconically linked to that of a ridge, patterning with the common phenomenon of semantic body-to-landscape extension within many Daly languages. Although the Ngan'gi word *derri* may originally have been derived from a body part, it can function independently with 'ridge' as its semantic function.

The etymology of the word *derri* as 'creek' in Marri Ngarr is more unclear. The iconicity of a lengthy, meandering creek could certainly be argued to resemble that of a backside or spine. However, the word for 'back' in Marri Ngarr is *zadi*, which phonologically seems very distant from *derri*. A phonologically closer word with *derri* is *der* 'tooth'. It seems, however, unlikely that *derri* should be an inflected form of *der*, as the existence of an -i suffix is not found elsewhere in either Ford (2005) or Bicevskis (2023), as well as the fact that a tooth appears to be iconically more distant to a creek than, say, an edge or a riverbank (Reid & McTaggart, 2008).

The non-body-part noun incorporation in example (61) is rather difficult to explain. It is certainly true that the overwhelming majority of nouns incorporated in Marri Ngarr are body parts, and the above example was the only one found where this was not the case. However, the non-body-part noun incorporation in the example remains a fact. It is possible that a diachronic change has occurred in Marri Ngarr between the publications of Ford and Bicevskis, where the language has gradually disallowed this kind of incorporation. It also appears likely that *derri* 'creek' is a loanword from other languages in the Daly Region, which originally then would have been a body part noun, thus explaining why *derri* is found incorporated in a compound despite being a non-body-part noun.

Bicevskis interestingly discusses the reluctance of Marri Ngarr verbs to incorporate non-body-part nouns as having to do to with a semantic concept of alienability: "inalienable possession, where there is a permanent relationship between possessor and possesum (e.g. a person and their body part), is expressed via incorporation whereas alienable possession, which may be terminated at some point [...]

is expressed in the NP". It should be noted, however, that inalienable kinship nouns are non-incorporable, and body part nouns can only be incorporated when they are non-agentive and semantically plausible (Bicevskis, 2023).

5.1.5. Marrithiel / Brinken

Marrithiel exhibited the most extensive and varying incorporation of NBP nouns, and some interesting patterns were found. Both (72a-b) and (73a-b) are equally grammatically acceptable, and seem to exhibit no significant differences, neither semantically nor syntactically; Both constructions are equally marked, the only difference being that the object noun is located in a separate noun phrase in (72b) and (73b). If both constructions seemingly do not differ significantly, it raises the question of why constructions of the type (72b) and (73b) are found much more commonly in Marrithiel, as well as most other Daly languages. Green (1989) theorizes that this phenomenon can be attributed to subjective discourse structure manipulation; noun incorporation can be used to de-emphasize certain objects which may be syntactically or lexically important for the construction, but which provide no new information of significant relevance semantically. This manipulation of discourse structure (NI Type III) is commonly found in incorporating languages. It provides an effective way of 'controlling' other listeners' attention; objects denoting already known information or information of secondary relevance, which would otherwise be expressed as an individual constituent and thereby might wrongfully divert the listener's focus, can instead be incorporated into an existing verbal compound (Mithun, 1984). This suggests that in informal discourse in familiar settings, noun incorporation may be more salient than in discourses in which new information is provided regularly. The process of noun incorporation for the sake of discourse manipulation draws parallels to the common use of prosody, such as accentuation, to highlight certain constituents within an utterance.

5.1.6. Malak-Malak

As Hoffmann (2013) states, Aboriginal placenames can often consist of words linking a specific place to the people inhabiting it and its surrounding landscape. Over time, or due to phonological changes, the semantics of many place names may reduce in recognizability and the etymology of toponymous terms become more unclear. Thus, there may be more instances of noun incorporation within place name constructions, perhaps extending beyond this domain, than in the instances identified in this study.

As in many other Daly languages, the word *mirrmirr* 'thunder' also appears in Malak-Malak. However, while *mirrmirr* is usually defined as a coverb in other Daly languages, in a Malak-Malak dictionary (Lindsay et al., 2016) it is defined as a noun. In most other Daly languages, *mirr* means 'sun', and Malak-Malak has the very similar word *miri*, suggesting a clear lexical connection between the languages. We will return to a cross-linguistic discussion on *mirr* in 5.2.1.

5.2. Cross-linguistic findings

From the data, we can see that the previous assertions that non-body-part incorporation is not allowed in Murrinh-Patha, Marri Ngarr and Ngan'gi are generally borne out, but that there certainly are instances of exceptions to this rule. The data suggests that non-body-part noun incorporation may be more widespread than previously attested. Admittedly, only one example on NBP noun incorporation was found for Murrinh Patha and Marri Ngarr respectively, but this does suggest that the syntactic and

semantic restrictions for noun incorporation may be more flexible than previously assumed. This is especially true for Ngan'gi, which had previously been assumed to not allow NBP noun incorporation at all (Green, 1989) but which, in later studies as well as the present study, has been shown to extensively exhibit this feature. However, this process was found to be generally restricted to a few sets of nouns. All identified non-body-part nouns incorporated into compounds are shown in Table 3 (see Appendix).

NPBNI was most common in the Western Daly language Marrithiel, where 10 tokens of non-body part nouns were found incorporated, followed by Bachamal with 8 tokens, Emmi with 7, Kamu with 5 and Matngele with 4 tokens. The phenomenon was more rare in Ngan'gi, Merranunggu and Malak-Malak, in which 3 instances of NPBNI were found, respectively. For both Murrinh-Patha and Marri Ngarr respectively, only 1 instance was found.

Interestingly, flexibility or strictness for non-body-part noun incorporation does not seem to be congruent with linguistic classification; Marrithiel, for instance, which was found to exhibit significant flexibility for NBPNI, belongs to the Western Daly group together with Marri Ngarr, which exhibited the highest strictness of all Daly languages. No certain conclusions can be drawn from this observation, but it does shed light on the complex relationships between the languages and the difficulties in linguistic classification using the comparative method.

The broad semantic range of the nouns suggests that NI is not reserved for spatial domains or body-part extensions, but that it can be used productively and relatively freely. Meronymy appears to be an decisive factor for NI, at least for Marrithiel; the incorporated noun often serves the function of specifying the phrase's object, but when the object is hypernymous in relation to the IN, it must be expressed via external noun phrases, as shown in the nouns in (79a-b). Meronymous relations between items in the same clause would then, at first glance, appear to have an inhibiting effect on the likelihood of incorporation. At the same time, meronymous relations may also generate noun incorporation in other languages. Take, for instance, example (53) from Emmi, where, unlike Marrithiel, incorporation is allowed even when the object has a part-whole relationship with the incorporated root. Here, there is a harmonious relationship between 'creek' and 'water', the latter being central in denoting the activity of swimming and semantically superior to the former. Noun incorporation is used to convey that the activity takes place in the overarching domain 'water', while the external noun phrase 'creek' specifies the location of the agent in the water. Now, if there had been no part-whole relation between the items, noun incorporation would not be needed. A construction such as (53) would not be allowed in Marrithiel (Green, 1989). This suggests that semantics do have a decisive influence on the syntax of languages, varying cross-linguistically. A certain semantic factor may play an important role in one language, while not being relevant in another, as with Emmi and Marrithiel.

There is a general pattern found across the Daly languages, that incorporated non-body-part nouns often denote specific semantic domains, most often spatiality, movement and environment. 'Water' was the most commonly incorporated non-body-part noun cross-linguistically, and tokens were found in Ngan'gi, Bachamal, Emmi, Merranungu, Marrithiel and Malak-Malak. Other incorporated nouns found cross-linguistically in the spatial domain were 'creek' and 'road'. At first glance, with these incorporated examples, the concept of alienability, discussed by Bicevskis, as being a determining factor in restricting NI in Marri Ngarr, does not seem to be aptly applied to other Daly languages, as creeks and roads may seem unrelated to the body. However, as Hoffmann (2020) notes for Malak-Malak: "*Place is an extension of the self and as such parts of the body are reflected in integral features of the land*". It might be argued, then, that environmental features, including creeks, road and water, is not inalienable for the speaker, and therefore (using Bicevskis' hypothesis) may be incorporated into a compound.

Furthermore, as we have seen, incorporated landscape nouns semantically extended from body parts are often distinguished by removal of affixes that would usually function as noun class or animacy markers, often denoting that the noun is a human body part. One example is *derri* 'ridge' in Ngan'gi, derived from *dederri* 'back, spine'. In *derri*, the prefix -de has been removed, and the resulting noun has a changed semantic meaning. There is one more difference, however, in that the prefix-less *derri*, when denoting the landscape term, can stand independently. *Derri*, when denoting the body part, cannot stand independently; it must be incorporated into a compound, or, to function independently, must be provided with its suffix -de. Therefore, it seems that grammatical manipulation can give rise to completely new lexical items which are related to, but alienated from, their original source word; *derri* can be an extension of the body, but the relationship is made more distant from the self by removal of the prefix -de. It is possible that by retaining semantic linkage to the body, a noun may be more eligible for incorporation. This would explain why most incorporated non-body-part nouns refer to landscape and environment, since many of these nouns can be directly linked to body part nouns. Seeing, however, as many landscape nouns are distinct in both semantics and grammatical function from their body-part counterparts, incorporation of such derived nouns can therefore be argued to not be viewed as non-body-part noun incorporation.

Another seemingly decisive factor for NI is the use of discourse manipulation. Though the study has not been a discourse analysis, there are some examples in which discourse paraphrasing seemingly favors or inhibits the process of noun incorporation, such as examples (72-73) in Marrithiel and (57a-b) in Emmi. Here, both the non-incorporating and incorporating constructions are equally acceptable, since the incorporation is of a syntactic type. Green (1989) also theorizes that the function of incorporation of non-body-part nouns is a way of strategically modifying discourse to suit the speaker's communicative intentions.

There is also a semantic dimension to manipulation of syntactic structure; as Green (1989) states, body part noun incorporation is a "strategy for shifting the focus from a literal or classificatory body part to the whole entity". The same could also be argued to be the case with non-body-part noun incorporation; landscape nouns are often very similar to body parts seen as iconically representing these nouns, (compare Ngan'gi: *dederri* 'backside, spine' and *derri* 'ridge'). Furthermore, landscape nouns which are identical to their corresponding body-part save for lacking a prefix (which usually denotes a human posessor), may be used as independent lexical items, while their body-part counterparts cannot be used without a classifier prefix. In accordance with Van Egmond (2012), it seems plausible to argue that many landscape nouns, though they may have retained a semantic linkage to the body, are so distinct from their corresponding body part nouns that they are to be viewed as independent nouns in themselves. What seems to be traces of diachronic change appears to have been attested in Marri Ngarr, where the word *derri* 'creek' appears. *Derri* is seemingly unrelated to other body part nouns in Marri Ngarr, but identical to the word *derri* found in Ngan'gi. It therefore seems likely that *derri* in Marri Ngarr is a loanword, originally denoting either a body-part or landscape noun, and which, as a result of diachronic change, has changed in semantic meaning to only that of a spatial noun. Interestingly, it seems to have retained its grammatical function, in that it can be incorporated despite it being a non-body-part noun.

5.2.1. The case of *mirr*

During the analysis, the word *mirr/mir* or *mirrmirr/mirmir* was found to be commonly occurring in several languages, often with the same semantic sense.

Matngele:	*mirr*, coverb, 'thunder'. *mirr*, noun, 'shadow, spirit'.	(Zandvoort, 1999)
Ngan'gi:	*mirr*, noun, 'sun' *mirrmirr*, coverb, 'thunder'	(Reid & McTaggart, 2008)
Murrinh-Patha:	*mirrmirr*, verb, 'thunder rumbling'	(Mollingin & Street, 1983)
Malak-Malak:	*mirri*, noun, 'sun' *mirrmirr*, noun, 'thunder, children'	(Nordlinger, 2020) (Lindsay et al., 2016)
Emmi:	*mirr*, noun, 'dreaming, shadow, photograph'	(Ford, 1998)
Merranunggu:	*mir*, noun, 'thunder' *mir*, verb, 'to thunder'	(Tryon, 1970)
Marrithiel:	*mirr*, noun, 'shadow' *mirrmirr*, verb, 'thunder' *mirrginmi*, noun, 'first thunder of wet season'	(Green, 1989)

Mirr and *mirrmirr* when having the meaning of 'thunder' or 'thundering', are often found incorporated into verbal compounds. It is interesting that an identical word would be present in all Daly subcategories, with the exception of the Anson Bay languages. Tryon (n.d.) does describe one word in Pungu-Pungu, *mirgamæ*, as meaning 'thunder'. It is not stated to what word class the word belongs, but it could be a lexical compound of *mir* (unidentified) and *gamæ* 'he', or it could be an independent lexical item which may have diachronically diverged from *mirr*. One might speculate that the word *mirr*, its spread across the Daly language clearly being a result of language contact, could even have originated from Pungu-Pungu, and then being shortened, as Pungu-Pungu was once allegedly used as a lingua franca in the Daly region (Tryon, 1980).

Mirr and *mirrmirr* varies between functioning in its classification. *Mirr* usually is defined as a noun, while *mirrmirr* most often functions as a verb. Green (1989) states that noun reduplication in Marrithiel usually does not create new lexical items, but rather modifies the original word stem. When there are reduplicated nouns that can appear non-reduplicated, they have no semantic linkage to their non-reduplicated form. Indeed, the majority of reduplicated nouns in the Daly languages does seem to be a means of expressing plurality (Tryon, 1974). However, the case of *mirr* is puzzling as, being a salient example of language contact between the Daly languages, it occurs in both reduplicated and non-reduplicated forms and both as nouns and verbs. The etymology of *mirr* - when denoting 'thunder' - is unclear, but cross-linguistically there does seem to be some link between *mirr* and *mirrmirr*. In Matngele, the non-reduplicated form is a verb; in Merranungu, it is both a verb and a noun. The reduplicated form *mirrmirr* is always a verb, except for in Malak-Malak.

It is possible that the semantic senses of 'thunder', 'sun', 'spirit' and 'shadow' are unrelated in the cases of *mirr* and *mirrmirr*. However, reduplication of nominals forming a new lexical item while still retaining, or even extending, the semantic link to its non-reduplicated root does occur in other Australian languages (Dineen, 1990). While no explicit evidence for such a process occurring in Daly languages has been

found, there are examples in Marrithiel of both syntactically and lexically incorporated body part nouns functioning as predicates being reduplicated within compounds (Green, 1989). The function of predicate reduplication is usually to convey that the action is repeated or emphasized (Green, 1989; Nordlinger, 2020). It is unclear if such reduplication can occur with non-body-part nouns functioning as predicates, and if so, whether there is a semantic link between the reduplicated word and non-reduplicated root.

As there is some evidence of de-nominalization and grammaticalization in the Daly languages (Bicevskis, 2023; Nordlinger, 2019), it begs the question of whether such a process has also affected *mirr* and *mirrmirr*. Furthermore, if these words are in fact grammaticalized or de-nominalized nouns, it could be argued that instances in which they are compounded should be regarded as noun incorporation, which would then corroborate the claim made earlier that NBPNI is more widespread than previously thought. In any case, it is argued here that the eligibility for incorporation of a noun is increased by a higher degree of grammaticalization and de-nominalization, and inhibited by a higher degree of nominalization. In the research area of noun incorporation, the data suggests that etymological research on nominals can provide a useful framework for understanding the structure and development of noun incorporation, possibly extending even beyond the Daly languages.

Further etymological analysis is difficult due to the lack of sufficient data on the Daly languages and goes beyond the scope of this paper.

5.3. Genetic classification

As mentioned in 1.1.2, incorporation has been claimed to be one of the most central aspects of polysynthetic languages (Evans, 2017; Bickel & Nichols, 2007). According to Dixon (2009) the incorporation of body parts, along with some other shared grammatical features, is a significant factor in the Daly languages having been classified as one linguistic group. It is important to note, however, that this classification does not necessarily suggest that the languages are genetically related (Nordlinger, 2017). Furthermore, existing materials have not attested to what degree the presence of NBPNI in the languages can affect the linguistic classification.

The crosslinguistic widespreadness of *mirr* and the case of *derri* in Marri Ngarr clearly shows evidence of language contact in the Daly region resulting in loanwords later being cemented in the respective language, possibly undergoing grammaticalization or nominalization. *Derri* is specifically poignant, as the word, which likely seems to have originated from a body part noun in Ngan'gi, appears to have undergone a change during which it has gradually reduced in 'body-partness' and to rather come to denote a landscape term.

Furthermore, it seems that Tryon's purely typological classification of the Daly languages into one family is somewhat too generalizing, as it mainly takes into account lexical cognate rates. The classification into one family is also problematic as there is significant variation between the languages, specifically between Northern/Eastern and Western/Southern Daly languages, in terms of e.g. word order, verbal synthesis and the position of the incorporated noun in the verbal compound (Nordlinger, 2017). Even the contemporary classification of the Daly languages can be argued to be too broad, as some the languages currently classified as dialects are in fact very different in their morphology and syntax, such as Bachamal and Pungu-Pungu. It seems clear that a high lexical cognate rate does not entail corresponding syntax or necessarily a close genetic relationship (Tryon, 1970). Furthermore,

Malak-Malak and Ngan'gi share sufficient syntactic and lexical similarities that it is surprising that Malak-Malak be classified as belonging to a separate subcategory. This is corroborated by McGregor (2002), who claims Malak-Malak to be a grammaticalized version of Ngan'gi.

More research is needed to further determine the genetic relationships between the languages. Cross-linguistic studies on the Daly languages must take into account both lexical cognate rates, but also grammatical and syntactic features. Because of the low amount of data on the Daly languages, documenting diachronic changes within the languages is a challenging prospect.

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6. Conclusions

This study has provided the first typological overview of incorporation of non-body-part nouns in the Daly languages. As we have seen, analyzing noun incorporation provides an effective way of detecting diachronic change within languages and even etymologies of words (as with Marri Ngarr). Further studies on the Daly languages may also provide valuable insights into the nature of noun incorporation, what semantic, syntactic and cultural factors may contribute to this phenomenon, as well as providing evidence regarding the theory of a Proto-Australian language.

While being a relatively rarely occurring phenomenon across all of the Daly languages, the flexibility in allowing NPBNI varied greatly cross-linguistically, with the found number of tokens ranging from 1 to 10 across the languages. No correlation between noun incorporation flexibility and proximity of current linguistic classification (see table 1) within the current language grouping was found. It was found that non-body-part nouns belonging to the semantic domains of environment, spatiality and movement, when viewed as inalienable to the speaker, are more likely to be incorporated. Furthermore, many nouns not denoting body-parts but nevertheless found incorporated appear to retain some semantic and typological similarity to body parts. These two findings suggest that in the Daly languages, semantics actively shapes syntax and grammar, and that these languages overall express an anchoring in physical reality in terms of the own body, but also of the body being anchored to and inextricably linked to its environment.

Based on the findings from Green (1989), it was further discussed that noun incorporation can be directly inhibited or favored through the communicative intentions of a speaker. Such a process is difficult to document quantitatively and statistically, but speaks to discourse as being a dynamic and productive process, over which the speakers can exert significant control. The syntax, however, remains bound by semantic rules, specifically meronymy.

With *mirr*, we have seen evidence of significant diachronic change in the Daly linguistic area, resulting in both grammaticalization and denominalization. Such processes appear to increase the eligibility of non-body-part nouns to be incorporated. The typological cognation of *mirr* cross-linguistically may either suggest a shared genetic heritage of, or simply evidence of extensive language contact between, the Daly languages. The complexity of linguistic classification is further emphasized by the fact that languages belonging to the same sub-group differed significantly in their flexibility for NBPNI. This observation also suggests, however, that a shared level of acceptance for noun incorporation in two languages does not necessarily indicate a close genetic relationship between them or the presence of other shared linguistic features.

The findings from this study serve as a contribution to the literature on the Daly languages. Such documentation may prove useful for future revitalization projects, and may also raise a more widespread awareness of the critically endangered state of the Daly languages.

References

AIATSIS (Australian Institute of Aboriginal and Torres Strait Islander Studies). (2021). *AIATSIS Collection*, *AustLang*. https://collection.aiatsis.gov.au/austlang/search

Baker, M. C. (1985). *Incorporation*. Massachusetts Institute of Technology.

Bicevskis, K. (2023). *A grammatical description of Marri Ngarr*. University of Melbourne. ORCID: 0009-0006-6737-5378

Bickel, B., & Nichols, J. (2007). Inflectional morphology. *Language typology and syntactic description*. 3(2). 169-240. DOI: 10.1017/CBO9780511618437

Birk, D. B. W. (1974). *The MalakMalak Language, Daly River (Western Arnhem Land)*. Openresearch-Repository.anu.edu.au. https://doi.org/10.25911/5d723cf855d61

Cahir, P. (2006). *Verb functions and Argument Structure in MalakMalak, a Northern Daly Language of the Daly River Region, Northern Territory*. University of Melbourne.

Dineen, A. H. (1990) *A Comparative Survey of Reduplication in Australian Languages*. Australian National University. ISBN 9783895865312.

Dixon, R. M. W. (2002). *Australian Languages: Their Nature and Development*. Cambridge University Press. https://doi.org/10.1017/CBO9780511486869

Ethnologue (2023). *Ethnologue: Languages of the World*. https://www.ethnologue.com/

Evans, N. (1996). The syntax and semantics of body part incorporation in Mayali. *The Grammar of Inalienability: a typological perspective on body-part terms and the part-whole relation, 65–109*. Walter de Gruyter. https://doi.org/10.1515/9783110822137

Evans, N. (2017) Polysynthesis in Northern Australia. In Fortescue, Michael; Mithun, Marianne; Evans, Nicholas (eds.). *Oxford Handbook of Polysynthesis*. Oxford: Oxford University Press. pp. 312–335. https://doi.org/10.1093/oxfordhb/9780199683208.013.19

First Languages Australia. (n.d.). *Priority Languages Support Project*. First Languages Australia. https://www.firstlanguages.org.au/priority-languages-support.

Ford, L. (1998). *A description of the Emmi language of the Northern Territory of Australia*. Canberra: Australian National University, Masters Thesis.

Ford, L. (2005). Marri Ngarr Lirrga Songs: A Linguistic Analysis. *Musicology Australia*, *28*(1), 26–58. https://doi.org/10.1080/08145857.2005.10415277

Ford, Lysbeth. (1990). T*he Phonology and Morphology of Bachamal (Wogait).* Australian National University. MA thesis.

Green, I. (1989). *Marrithiyel: A Language of the Daly River Region of Australia's Northern Territory*. Australian National University.

Green, I. (1981). *The phonology and morphology of Marrithiyel: A Preliminary Study*. Australian National University.

Green, I. & Nordlinger, R. (2022). Daly Languages Project. https://dalylanguages.org/

Halliday, M. A. K. (2004). *An introduction to functional grammar*. Arnold.

Harvey, M. (1989). *A Sketch Grammar of Kamu*. Unpublished manuscript.

Harvey, M. (2003). The evolution of object enclitic paradigms in the Eastern Daly language family. In N, Evans (ed.), *The Non-Pama-Nyungan languages of Northern Australia*. Pacific Linguistics.

Hoddinott, W. G., & Kofod, F. M. (1988). *The Ngankikurungkurr Language (Daly River Area, Northern Territory)*. Pacific Linguistics.

Hoffmann, D. (2020). Be happy when your stomach is: Figurative extensions of the body in MalakMalak. *Pragmatics & Cognition*, *27*(1), 184–208.

Hoffmann, D. (2013). Mapping Worlds: Frames of Reference in MalakMalak. *Annual Meeting of the Berkeley Linguistics Society, 39*(1), 380. https://doi.org/10.3765/bls.v39i1.3894

Leslie-O'Neill, H. (2020). Noun Incorporation and Noun-Verb Compounding in the Aboriginal Languages of Australia. *Nuanced Garbling*, *2*.

Lindsay, B. Y., Pirak, R., Mijat, F. & Hoffmann, D. (ed.). (2016). *MalakMalak-English Dictionary: A Draft.* Self-published.

Mansfield, J., & Green, I. (2021). Fricative contrasts and neutralization in Marri Tjevin. *Australian Journal of Linguistics*, 41(2), 220–261. https://doi.org/10.1080/07268602.2021.1957774

Mansfield, J. (2014). *Polysynthetic sociolinguistics: The language and culture of Murrinh Patha youth.* Australian National University.

Mithun, M. (1984). The Evolution of Noun Incorporation. *Language, 60*(4), 847–894. https://doi.org/10.2307/413800

Nordlinger, R. (2017). "Chapter 37: The languages of the Daly region (Northern Australia)". In Fortescue, Michael; Mithun, Marianne; Evans, Nicholas (eds.). *Oxford Handbook of ' Polysynthesis*. Oxford: Oxford University Press. pp. 782–807.

Nordlinger, R. (2019). From body part to applicative: Encoding "source" in Murrinhpatha. *Linguistic Typology*, 23(3), 401–433. https://doi.org/10.1515/lingty-2019-0023

Olthof, M., van Lier, E., Claessen, T., Danielsen, S., Haude, K., Lehmann, N., Mous, M.,

Verhoeven, E., Visser, E., Vuillermet, M., & Wolvengrey, A. (2020). Verb-based restrictions on noun incorporation across languages. *Linguistic Typology*, 25(2), 211–256. https://doi.org/10.1515/lingty-2020-2054

Reid, N & McTaggart, P. (2008). *Ngan'gi dictionary.* Armidale, NSW: Australian Linguistics Press

Reid, N. J. (1990). *Ngan'gityemerri: A language of the Daly River region, Northern Territory of Australia*. Australian National University.

Reid, N. (2003). *Phrasal Verb to Synthetic Verb: Recorded morphosyntactic change in Ngan'gityemerri.* In Nicholas Evans (ed.), The Non-Pama-Nyungan languages of Northern Australia, 95–123. Canberra: Pacific Linguistics.

SBS Census Explorer: 2021 Australian Census results interactive. (2021). SBS News. https://www.sbs.com.au/news/creative/census-explorer/xtjxeqygs

Street, C., & Mollingin, G. P. (1983). *Dictionary: English/Murrinh-Patha*. Wadeye Press, Port Keats. https://hdl.handle.net/10070/715003.

Tryon, D. T. (1970). *An introduction to Maranungku (Northern Australia)*- Pacific Linguistics.

Tryon, D. T. (N/D). *An introduction to Pungu-pungu*.

Tryon, D.T. (1974). *Daly family languages,* Australia, (Series C 32): Pacific Linguistics.

Tryon, D. T. (1980). *Pungupungu and Wadyiginy: typologically contrastive dialects*. In Bruce Rigsby & Peter Sutton (eds.), Papers in Australian Linguistics No. 13: Contributions to Australian Linguistics, 277–287. Pacific Linguistics.

Walsh, M. (1976). *The Murinypata language of North West Australia.* Australian National University.

Wilson, I. (2008). The Effects of Post-Velar Consonants on Vowels in Nuu-chah-nulth: Auditory, Acoustic, and Articulatory Evidence. *The Canadian Journal of Linguistics / La Revue Canadienne de Linguistique*, 52(1), 43–70. https://doi-org.ludwig.lub.lu.se/10.1353/cjl.2008.0008

Zandvoort, F. D. (1999). *A Grammar of Matngele*. University of New England.

Appendix

Table 3: Tokens of incorporated non-body-part nouns

Marrithiel	woman	water	long yam	road	child	meat	stick	creek	house	point
Bachamal	shape	water	shell	clapsticks	path	song	line	rope		
Emmi	ground	water	bucket	handle	lecture	bucket	hole			
Kamu	secret	trouble	road	word	corroboree					
Matngele	dreaming	spirit	road	word						
Nga'ngi	top	water	hearth							
Malak-Malak	person/thing	water	moon							
Merranungu	door	water								
Marri Ngarr	creek									
Murrinh-Patha	woman									