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Deictic marking in adpositions

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Abstract

Although adpositions commonly show spatiotemporal meanings and uses, it is not common that they include a deictic component in their meaning marking relative distance to a deictic center. However, in a small number of languages it is possible to indicate spatial or temporal deixis with adpositions.

Such deictically-marked adpositions do not form a homogeneous class cross linguistically, but they are nonetheless of interest, as the possibility of such constructions has only rarely been mentioned, and in some languages such adpositions could be considered part of a language's demonstrative system.

This article investigates a diverse group of spoken languages and how deixis is marked in their adpositions, giving a preliminary categorization based on synchronic data, as well as looking at possible grammaticalization paths for the origin of such a rare phenomena. The most common path appears to be locative demonstratives grammaticalizing into adpositions, but other paths are also possible, including coverb constructions, such as those with locative coverbs, as well as those with the verbs 'come' and 'go'.

Keywords

deixis, demonstrative, adposition, coverb, adverb, preposition, typology, grammaticalization

1 Background

Adpositions have traditionally been defined as a class of words taking a noun or noun phrase as their complement, which specify the grammatical or semantic relation of the noun phrase to another element such as a verb (e.g. providing information about the time or location of the event) in the same clause.¹ This article takes an additional pragmatic

¹I am grateful to Borja Herce and Alan Libert for material and discussions on adpositions, to Chingduang Yurayong for his help on distinguishing verbs from adpositions, to Ian Tupper and Ray Stegeman for their help in gathering together linguistic materials from Papua New Guinea, to Martha Wade for all of her generous help with Ap Ma, to Russell Barlow, Denis Creissels, Izabela Jordanoska, Mamour Drame, Stephane Robert, Jason Lobel, Malcolm Ross, Nicole Kruspe, Michael Boutin, Hanna Fricke, Naonori Nagaya, Amos Teo, and all the other researchers who helped me with their languages of expertise over the years. I am also grateful to Harald Hammarström for all his help with supplying linguistic material, without which this work would not have been possible. Funding for the research was provided in different periods by the Kone foundation and the Finnish cultural foundation, and their support is greatly appreciated. Finally, I am grateful for the the helpful comments on earlier drafts provided by Antti Laine, Stefan Savić, and two anonymous reviewers. Any errors are my own.

approach that if a word fulfills the function defined above, for the sake of this study at least it can also be classified as an adposition.

It does not mean that an instance of use as an adposition is exclusively such, and a root may potentially show multiple uses. The use of the term ‘adposition’ in this article should thus be considered as a comparative concept, following (Haspelmath, 2010).

Although they are not a universal word class, adpositions are nonetheless rather widespread. According to the survey in Bakker (2013), 315 out of 378 languages have adpositions.

The complexity of adposition systems can also vary considerably; for languages which have adpositions, it can range from just one in Palauan (Malayo-Polynesian; Hagège 2010) to over ninety postpositions in Tiriyo (Cariban; Meira 1999).

This article investigates a rare subtype of adpositions, those which make deictic distinctions. Although spatio-temporal semantics such as ‘at’ and ‘to’ are among the most common meanings found in adpositions, it does not appear to be common to include a deictic component². However, it is possible, as seen in the following examples in Begak (Northeast Sabahan).³

- (1) *kəm̩mi gərə-i-dagang kaset di'* Indonesia
 1PE.N AV.DSTP-CPL-buy cassette **at.DIST** Indonesia

‘We bought cassettes in Indonesia.’ (Goudswaard, 2005 p. 246)

- (2) *u-ranna' kat nupi key nong* Monay
 DEP-descend CDM dream FOC **at.PROX** young.man

‘A dream came down to Young Man.’ (Goudswaard, 2005 p. 85)

In Begak, the two general prepositions *nong* and *di'* include a spatial deictic component to their meaning, *nong* for locations near the speaker or deictic center, and *di'* for locations distant from the speaker or deictic center. *Nong* and *di'* not only relate the noun phrase to the clause as a whole, but they also indicate that the object of the postposition is or was distant from the current location of the speaker or deictic center. In example (1) for instance, the use of *di'* indicates that Indonesia is not close to the speaker. In other words, the adpositions here convey deictic information on the position of the referent of the NP, relative to the speaker or deictic center.

Waran (Keram-Ramu) shows another type of deictic marking in adpositions, in which deictic prefixes attach to all postpositions indicating a three-way deictic distinction. In unmarked situations where the location relationship is unimportant, the far deictic *da-* is used Butler (1981 p. 39). Note that deictic reference is made in the following examples with the postposition.

²The phrase “deictic distinction” refers here to relative proximity to the origo, or the reference point on which the deictic relationship is based, rather than viewpoints of relative frames of reference that originate from a deictic center. Although a preposition like English *behind* (as in *the man is behind the tree*) may indeed contain a deictic component to its meaning, this has little to do with the deixis of relative proximity to an origo.

³Bolded text is used in examples throughout this article to indicate adpositions with a deictic distinction. Bold text is not used if the form is adverbial or predicative rather than adpositional, nor is it used for adpositions without a deictic component to their meaning.

- (3) *kamin ga-dik gora na-ng ra-pa-se-Ø*
 bow PROX-with bird MED-DEM shoot-CPL-PR-N3.SG

‘With this bow I shot that bird.’ (Butler 1981 p. 40)

- (4) *kamin na-dik gora na-ng ra-pa-se-Ø*
 bow MED-with bird MED-DEM shoot-CPL-PR-N3.SG

‘With that (near hearer) bow I shot a bird.’ (Butler 1981 p. 40)

- (5) *kamin da-dik gora na-ng ra-pa-se-Ø*
 bow DIST-with bird MED-DEM shoot-CPL-PR-N3.SG

‘With that (removed from speaker and hearer) bow I shot a bird.’ (Butler 1981 p. 40)

This article investigates the different types of adposition systems in which deictic distinctions are possible, and how such systems might have arisen.

2 Introduction

Languages with adpositions which show a deictic distinction are very rare, with only 31 languages known (Appendix 1), out of a total of 1162 spoken languages examined (Appendix 2). The majority of the languages (23 out of 31) are also Austronesian. Additionally, a number of extra languages not counted in the total, but with related structures, are also found among Austronesian languages. Such languages either do not have deictic distinctions but their adpositions nonetheless show a connection to a spatial deictic system in some way, or they show a deictic distinction but it is not systematic enough to include. A discussion on these cases and the justification for their treatment is found in Section 11.

A list of the languages included and their type may be seen in Table 1. Types are sorted according primarily to morphosyntactic criteria, based on synchronic systems. Languages with question marks next to their name are of uncertain validity, due to paucity of data. The challenges in categorizing Tolai are different, however, discussed further in Section 7, as well as Kedang in Section 8.

Only in some languages examined here is the deictic marking morphologically related to demonstrative forms, seen in Table 2. In Begak for instance, a clear morphological relationship exists between adverbial locative demonstratives and adpositions. In Semelai on the other hand, the relationship between deictic adpositions and other demonstrative forms is questionable; if such exists, it would appear to be rather opaque.

All languages except for Ap Ma, Waran, Jero, and Dami use prepositions rather than postpositions, but this distinction does not appear to be relevant to deixis marking. There does not seem to be a particular pattern in using prepositions compared to postpositions when it relates to deixis marking, nor any special conditioning factors.

The total sample and geographic coverage may be seen in Table 3; macroareas used follow the conventions of Glottolog (Hammarström & Donohue, 2014).

Note that the inclusion of a language in the sample without overtly mentioning it does not definitively indicate that the language does not make deictic distinctions in adpositions; it merely means that sufficient evidence was not found to warrant overt mention of the language in question. More on this is discussed further in Section 11, but it is likely

Table 1. Deictic adpositions

Begak	Single Deictic Adposition System	NE Sabahan	Austronesian
Buru	Single Deictic Adposition System	Central Maluku	Austronesian
Noon	Single Deictic Adposition System	Atlantic	Atlantic-Congo
Wolof	Single Deictic Adposition System	Atlantic	Atlantic-Congo
Semelai	Neutral-Deictic Adposition System	Aslian	Austroasiatic
Biafada (?)	Neutral-Deictic Adposition System	Atlantic	Atlantic-Congo
Kasa (?)	Neutral-Deictic Adposition System	Atlantic	Atlantic-Congo
Lewotobi	Adverbial-Adpositional System	Flores-Lembata	Austronesian
Nuaulu	Adverbial-Adpositional System	Central Maluku	Austronesian
Hewa Sika	Adverbial-Adpositional System	Flores-Lembata	Austronesian
Dami	Adverbial-Adpositional System	Oceanic	Austronesian
Bonggi	Adverbial-Adpositional System	Northeast Sabahan	Austronesian
Ida'an	Adverbial-Adpositional System	Northeast Sabahan	Austronesian
Tolai*	Adverbial-Adpositional System	Oceanic	Austronesian
Jero	Adverbial-Adpositional System	Kiranti	Sino-Tibetan
Thao	Verbal-Adpositional System	Thao	Austronesian
Paulohi	Verbal-Adpositional System	Central Maluku	Austronesian
Nakanai	Verbal-Adpositional System	Oceanic	Austronesian
Tetum	Verbal-Adpositional System	Timoric	Austronesian
Selaru	Verbal-Adpositional System	South Tanimbar	Austronesian
Fijian	Verbal-Adpositional System	Oceanic	Austronesian
Hewa Sika	Verbal-Adpositional System	Flores-Lembata	Austronesian
Lewoingu	Verbal-Adpositional System	Flores-Lembata	Austronesian
Solor	Verbal-Adpositional System	Flores-Lembata	Austronesian
Alorese	Verbal-Adpositional System	Flores-Lembata	Austronesian
Cent. Lembata	Verbal-Adpositional System	Flores-Lembata	Austronesian
Kedang	Verbal-Adpositional System*	Flores-Lembata	Austronesian
Ap Ma	Fused Deictic System	Keram	Keram-Ramu
Waran	Fused Deictic System	Ramu	Keram-Ramu
Pangasinan (?)	Fused Deictic System	Northern Luzon	Austronesian
Tindal Dusun (?)	Fused Deictic System	SW Sabahan	Austronesian

that as more researchers are made aware of the possibility of spatial deixis marking on adpositions, more languages will be discovered with this feature.

Adpositions have often proven to be challenging to delineate. Some of the more general challenges are not relevant to deixis marking, such as distinguishing between adpositions and case markers. No language is known in which deixis is marked on clearly affixal case markers; languages which are described as having case markers which are less bound in some way are included in the typology here, and overtly mentioned. Ap Ma for instance, one of the languages discussed here, uses deixis marking not only with postpositions, but also with what could be considered case markers.

⁴Note that the total number of families is not simply a sum of the families for each macroarea. Families may be spoken in multiple macroareas and thus be counted multiple times. Afro-Asiatic for instance is counted in Africa as well as Eurasia, and treated as a family for both macro areas. The total, however, is rather the total of all families without macroareal partition, so Afro-Asiatic would only be counted once. Furthermore, the following non-genealogical 'families' on Glottolog were excluded in this study: Sign Language, Unclassifiable, Pidgin, Unattested, Artificial Language, Mixed Language, and Speech Register. Sign languages were excluded only due to practical reasons of time.

Table 2. Deictic adpositions and their morphological relationship to demonstratives

Language	Related to demonstrative	Notes
Begak, Buru	Yes	Morphological derivation
Noon, Wolof	Yes	Same deictic suffixes
Semelai	No	
Biafada	Yes	Proximal loc. dem. same form as 'at'
Kasa	No	
Lewotobi Lamaholot, Solor Lamaholot	Yes	Same forms
Lewoingu, Central Lembata, Nuaulu, Ida'an	Yes	Same forms
Hewa Sika, Alorese, Dami, Bonggi	Yes	Same forms (some gaps)
Tolai	Yes	Same forms as dem. adverbs
Jero	Yes	Same forms (distal only)
Thao, Paulohi, Nakanai	Yes	Same forms as dem. verbs
Kedang	Yes	Morphological derivation and overlap
Tetum, Selaru	No	
Fijian	No	
Ap Ma, Waran	Yes	Same deictic clitics
Pangasinan	Yes	Contraction of dem adv. and prep.
Tindal Dusun	Yes	Contraction of dem adv. and prep.

Table 3. Total number of sampled languages, families, and coverage (share of families sampled) in each macroarea

	Afr.	Eur.	Papunesia	Australia	N. Am.	S. Am.	Total ⁴
Languages	475	166	288	60	81	92	1162
Families (sample/total)	30/52	31/38	58/129	16/33	37/75	57/110	223/421
Coverage	58%	82%	45%	48%	49%	52%	53%

Two other common overlaps, however, adpositions and adverbs as well as adpositions and verbs, are both relevant to the concept of deictic marking in adpositions, so will be examined more closely.

Ambiguity between adpositions and adverbs has long been known from Indo-European languages, e.g. 'If an adverb takes an object, the adverb becomes what is commonly termed a preposition' (Jespersen, 1924 p. 163).

Quirk et al. (1985 p. 445) use the term *prepositional adverb* to refer specifically to examples like 'the car drove past', where *past* is viewed as a preposition with some kind of generalized ellipsis of the noun phrase. The relationship between 'the car drove past' and 'the car drove past the door' is noted as comparable to transitive and intransitive verbs, e.g. *she ate (breakfast)* (Quirk et al., 1985 p. 714).

The notion of transitivity has figured elsewhere on the research of adpositions as well,⁵ e.g. the following definition from Herce: 'Another source of uncertainty in distinguishing adpositions from other word classes is related to

⁵The use of the word (in)transitivity in research on adpositions differs considerably from that in research on grammatical voice, e.g. Zúñiga & Kittilä defines transitivity as the following: 'Transitivity is a multi-parameter notion that comprises different facets of clauses, including semantic and syntactic valency, but also agentivity, affectedness, and referentiality of different arguments' (2019 p. 3). In contrast, transitivity in research on adpositions simply refers to the number of arguments governed by the adposition or adverb, i.e. whether the form carries a complement or not.

transitivity. According to their traditional definition, adpositions must be transitive and should thus co-occur with a noun (phrase) complement. A problem arises, then, when (what appears to be) a single form has both transitive and intransitive uses' (Herce, 2021). Lehmann uses a comparable idea to distinguish adpositions from adverbs, but with different terms: 'The difference between local adpositions and local adverbs is that the former have a syntactic slot for an oblique complement, while the latter do not' (Lehmann, 2002 p. 78).

Libert finds the notion of obligatory arguments with adpositions problematic, however, questioning the need for adpositions to be 'transitive' in their definition: 'We do not posit separate parts of speech for verbs depending on their transitivity, both transitive verbs and intransitive verbs are simply verbs – why should adpositions be treated any differently?' (Libert, 2013 p. 94).

Cappelle (2004 p. 21-25) on the other hand points out that directional words like *across*, *along*, *down* show differences in usage depending on whether they have a complement or not, particularly in their aspectual boundedness. While a sentence like:

- (6) a. He ran through the forest for hours and finally met with her.

is perfectly reasonable, it is not possible to omit the complement, even with a context (Cappelle, 2004 p. 23).

- (7) a. ([He entered the forest where he had seen her disappear among the trees.] *He ran through for hours and finally met with her.)

This question is highly relevant for languages like Lewotobi Lamaholot (Flores-Lembata), in which locative demonstratives optionally carry an argument, fulfilling both an adverbial role as well as an adpositional role. Detailed tests on fronting, extraction, and boundedness could see whether the demonstratives behave identically or not, depending on whether they have a complement.

This article takes a practical approach in terms of treatment, such that the very ability to function adpositionally indicates that such terms are considered as adpositions for the sake of this study. That is, languages like Lewotobi are viewed as having multifunctional adpositional/adverbial roots which may optionally have arguments; when they co-occur with arguments, they are considered adpositions.

The challenges addressing 'transitivity' do, however, signal that there are a number of unsolved problems on defining adpositions which will need to be addressed, particularly on whether (pro)nominal complements are obligatory.

Parallel to the confusion surrounding 'adverbs' and 'adpositions' we also find difficulties in differentiating between verbs and adpositions, particularly in serial verb constructions. Verbs are a reasonably common source of grammaticalization into adpositions, discussed at length in the literature (e.g. Heine & Kuteva 2007; Hagège 2010).

In some languages, adpositions which originate from verbs coexist with homophonous partially- or fully-verbal forms. In Pacoh (Katuic) for instance, *?at* shows a dual function of both 'at' as well as 'be at'.

- (8) *da: ?at daŋ ?n.koh*
3SG be.at place there

'He's over there.' (Alves, 2006 p. 105)

- (9) *ʔat kruŋ.kutiʔk he: vi: tikuʔj pakoh katu:*
 be.at country 3PL exist people Pacoh Katu

‘There are Pacoh and Katu people in the country.’ (Alves, 2015 p. 900)

A similar construction is seen in Bugarin (Mangic), where the first *kai*⁴⁴ is used verbally and the second is used adpositionally.

- (10) *kai⁴⁴ tsau⁴⁴ mbi⁴⁴ naŋ⁴⁴ kai⁴⁴ tu⁴⁴ qau⁴⁴ tcou⁴⁴*
 exist dog one sleep at middle road disc

‘There was a dog sleeping on the road.’ (Li & Luo, 2015 p. 1059)

A large number of languages contain forms that have been labeled with various terms such as ‘coverb’ (Li & Thompson, 1974), ‘prepositional verbs’ (Pawley, 1973), or ‘verbid’ (Ansre, 1966). As suggested by the labels, the forms in question show part of speech ambiguity, exhibiting some but not all properties of verbs and adpositions in a given language. Lehmann (2002 p. 113) regards a coverb as ‘...an adverbial relator providing a relation between a main verb and an NP’.

The question arises, then, on whether to include for this study examples like Nakanai (Oceanic), seen in the following:

- (11) *eau o-mai*
 I PROX.PRED-here

‘I am here.’ (Johnston, 1980 p. 204)

- (12) *pupu, eme po-pou o-mai la mautu tegalua-e*
 grandfather 2SG RD-sit PROX.PRED-here NM.C village OUR(DU.IN)-PROX.DEM

‘Grandfather, you must stay here in our village.’ (Johnston, 1980 p. 214)

Languages like Lewotobi Lamaholot show forms ambiguous between adverb and adposition (discussed in Section 7), so should we view forms like *o-mai* also as ambiguous between verb and adposition?

The stance taken here is largely, but not entirely, the same as with adverbs and adpositions: to be maximally inclusive of possible adpositions in this survey, even if a closer language-specific investigation might conclude they are instead (solely) verbs, according to language-specific or cross-linguistic definitions. That is, if I lack sufficient evidence to determine whether a specific form in a given language is a verb or an adposition, I err in favor of the adpositional approach.⁶

Li & Thompson (1974 p. 266) conclude that ‘co-verbs’ in Chinese are adpositions, and that... ‘the existence of a homophonous synonymous verb in the language has absolutely no bearing on the question of the status of the co-verb. There the crucial question must always be: are there two actions being expressed or is there one?’.

⁶Although there is no sharp boundary between coverbs and adpositions, for determining the difference I look at semantic bleaching, morphological reduction, and syntactic flexibility (e.g. fronting) as possible criteria. For more detailed discussions of criteria distinguishing adpositions from verbs, see Hagège (2010 p. 155-156) and the references therein.

Determining whether there are two actions being expressed or one is not always easy to answer, requiring careful examination of the language in question. The difference between these forms is important for this study, as it relates to whether a form is being used adpositionally or not. Unfortunately, this is not always easy to determine, and for a cross-linguistic approach, we may not even have enough information to answer such questions.

As for Nakanai in particular, it is a challenging case, as Johnston (1980) describes such forms as auxiliary verbs, or ‘locative coverbs;’ however, evidence in topicalized fronting constructions suggests that these may be more adposition-like than Johnston indicated, and it is thus included in the study.⁷ More on Nakanai is discussed in section 8.

- (13) *o-mai e Karapi la valalua ge hilo isa la paga*
 PROX.PRED-here NM.PROP Karapi NM.C men IRR see one NM.C thing

‘Here in Karapi, the people are really going to see something (remarkable).’ (Johnston, 1980 p. 126)

3 Ambiguity in reference

Although the semantics of deictically marked adpositions have not been investigated in depth in this study due to lack of data, this sections attempts to summarize what is known thus far. We would benefit greatly from a more in-depth study on the semantics in an individual language, however.

One important feature that does seem to appear in multiple languages is that of ambiguity between event deixis and referent deixis. That is, the object of the adposition may be the referent being categorized by deixis, or it might be the event itself which is being categorized. In Example (14) in Ap Ma for instance, the distal marker attached to the postposition expresses either that the object of the postposition is or was distant from the current location of the speaker (or other origo), or that the act of walking occurred at a distance from the current location.

- (14) *ni-nga nindan ape nda-nin ta-p*
 1SG-PROX yesterday father DIST-with walk-PFV

‘Yesterday I walked around with father.’ (Killian & Barlow 2022 p. 41)

The deixis of the adposition thus either references the object of the adposition as proximal or distal, or it references the event itself as proximal or distal, functioning in a more adverbial sense.

A somewhat simplified comparison can be made to English demonstrative adverbs *here/there*, which can also sometimes function as nominal modifiers. That is, in the sentence “Saul saw the painting here”, *here* can also have multiple interpretations. The most common interpretation would be modifying the whole clause, setting the deictic location for the event. However, *here* could also be interpreted as a modifier for ‘the painting’, a plausible interpretation in situations with a contrastive emphatic function for instance. Thus *here* also shows some structural ambiguity between marking the deixis of the event and the deixis of a referent.

Further details on the semantics await more detailed investigations.

⁷Aikhenvald argues similarly for White Hmong, namely that because *nyob* ‘be at’ can be fronted to sentence-initial topic position, it is on the way towards grammaticalization into a locative preposition (Aikhenvald, 2018 p. 226).

4 Morphosyntactic Classification

Despite their rarity, some generalizations are possible in terms of how the languages make deictic distinctions in adpositions, although there is some flexibility and overlap in the classification. I identify 5 types of systematic deictic distinctions made in adpositions: 1) Single deictic adposition systems, 2) Neutral-deictic adposition systems, 3) Ambitransitive adverbial-adpositional systems, 4) Verbal-adpositional systems, and 5) Fused deictic systems.

Classification here uses a mixture of semantic and morphosyntactic criteria, and the categorized ‘types’ could be viewed as lists of organizational features, rather than mutually exclusive groups.

In particular, the main questions I address to categorize languages are:

- How many semantic types of adpositions are there?
- Is there a deictically neutral member?
- Can the lexemes which function as adpositions also be used as other word classes without overt derivation, such as verbal use or adverbial use?
- How are the adpositions morphologically constructed?

Type 1, the single deictic adposition system, is seen in languages such as Begak, Buru (Central Maluku), Wolof (Atlantic), and Noon (Atlantic). In this type, there is a single set of adpositions which obligatorily make deictic distinctions, and there are also typically other adpositions in the language which do not make a deictic distinction. A language might have *at*, *proximal* contrasting with *at*, *distal*, and then have no deictic marking for *with* or *to*.

In Begak, deictic adpositions cannot be broken down into smaller morphs, although they show a relation to deictic adverbs. Begak has only two adpositions which show generalized meaning, common with locations and directions. In Buru, deictic adpositions show a relation to demonstrative determiners.

In Wolof, deictic adpositions are also somewhat generalized, but they have relatively transparent morphology, composed of *c-* and two deictic suffixes, *-i* (proximal) and *-a* (distal).

Noon uses similar suffixes to Wolof, but the adposition that makes the deictic distinction is more specialized, carrying the meaning of ‘like, as’. It is unique in this study, being the only language which lacks deictic adpositions carrying locative or directional functions.

Type 2, the neutral-deictic adposition system, appears to be unique to a single language, Semelai (Aslian), where locative adpositions are split into two sets, one with a neutral, unmarked meaning and a second set which is deictically specified. However, Bifada (Atlantic) and Kasa (Atlantic) could be possibly assigned to this type as well. Data is scarce for both languages, and assignment is thus tentative. Dami (Oceanic) and Paulohi (Central Maluku) are classified as type 3 and 4 languages respectively, but both languages also have a deictically neutral member of the set.

Type 3 is labeled here as the ambitransitive adverbial-adpositional system type, found in languages like Lewotobi Lamaholot. In languages of this type, it is possible for adverbial or adnominal demonstratives to be used as an adposition, carrying a nominal complement. Tolai (Oceanic) is also tentatively classified into this category, but its classification is tenuous, as only proper nouns may directly follow an adverbial demonstrative being used adpositionally. More on Tolai is discussed in section 7.

Type 4 is labeled as the verbal adpositional system type, seen for example in Thao (Austronesian), Nakanai, Tetum Dili (Timoric), and a number of Flores-Lembata languages. In this type, there exists some ambiguity between verbs and adpositions, and (co)verbs show deictic distinctions with locative or directional meaning.

Type 5 is labeled as the fused deictic type, in which an (obligatory) deictic component is morphologically fused with adposition stems, forming complex adpositions. This type is primarily seen in two Keram-Ramu languages, Ap Ma and Waran; a more limited example of this type may also be potentially found in Dusun languages (Southwest Sabahan) and Pangasinan (Northern Luzon). In Ap Ma Pryor (1990) mentions over 10 different deictic postpositions, with meanings such as ‘under’, ‘near’, and ‘above’. In Waran, there are around 7 different postpositions. Dusun languages and Pangasinan are also tentatively of this type, combining locative adverbial deictics with a generalized adposition *id* (Dusun) or *ed* (Pangasinan). There are very few adpositions in these languages other than *id* or *ed*, but the few that exist do not seem to have the ability to combine with deictics. Ap Ma and Waran on the other hand do not have adpositions without deixis marking.

Finally, Section 10 discusses some additional borderline cases, as well as cases which were ultimately rejected.

5 Type 1: Single Deictic Adposition System

Languages of the single deictic adposition system type show a single set of adpositions which obligatorily make deictic distinctions, while there are also typically other adpositions in the language, which do not make a deictic distinction. A language might have ‘*at, proximal*’ contrasting with ‘*at, distal*’, and then have no deictic marking for *with* or *to*.

Begak, a language of Sabah, is one the clearest cases for a category of adpositional demonstratives, or adpositions with deictic distinctions which show a distinct morphological connection to other demonstrative forms. Begak demonstrative forms are divided into a few sets, depending on meaning as well as syntax, seen in Table 4.

Table 4. Begak demonstrative forms (adapted from Goudswaard (2005 p. 286))

Long form	Short form	Gloss	Function
ate	te/ne	‘this’	contrastive, closer to speaker than addressee
ano	-	‘that’	close to speaker and addressee
ino	no	‘yonder’	far away from speaker
udi	-	‘there’	furthest from speaker but visible
adi	di	‘over there’	furthest from speaker, non-visible
nnong		‘here’	close (adverbial only)
ddi’		‘there’	far (adverbial only)
nong		‘at’	close (prepositional only)
di’		‘at’	far (prepositional only)

The first three forms in the table, *ate* ‘this’, *ano* ‘that’ and *ino* ‘yonder’ can only be used pronominally and adnominally, not adverbially. The second set of demonstratives, *udi* and *adi*, are used for entities further away and can be used pronominally, adnominally and adverbially. The third set, *nnong* and *ddi’*, are adverbial only, and do not show the short and long form distinctions that other demonstratives do. The last set, *nong* and *di’*, are prepositional only, and also do not show short and long form distinctions.

Both *nong* and *di’* have very generalized adpositional semantics, used for canonical spatial relations such as location or direction. The semantics of the prepositions otherwise match the deixis of the adverbs: *nong* is used for referents close to the speaker or deictic centre, whereas *di’* is used for referents (far) away from the speaker or deictic centre. *Nong* is additionally used as a more generalized preposition; *di’* on the other hand does not have any other functions except locative and temporal uses.

- (15) *ina' di' umo*
mother at.DIST rice.field

'Mother is in the rice field.' (Goudswaard, 2005 p. 91)

- (16) *dəra' ton nong balay*
young.lady TOP at.PROX house

'As for Young Lady, she was at home.' (Goudswaard, 2005 p. 91)

In the following example, *di'* has a directional meaning, combining with a verb of motion. Note that the proximity of the kitchen is transferred to the deictic center of the story, not the current location of the speaker.

- (17) *jadi panow kat bano ino di' dapur adi*
so go CDM husband yonder at.DIST kitchen over.there

'So her husband walked to the kitchen (..)' (Goudswaard, 2005 p. 91)

Other spatial relations in Begak are expressed by means of locative nouns, such as *ttas* 'above, (on) top (of)', *allom* 'inside', *alag* 'beneath', etc. Locative nouns typically form the complement of a preposition, but some of them can also be used as independent nouns or verbs, or also be used as independent prepositions with more specific locational meanings than found with *nong* or *di'*.

- (18) *nong balay*
at.PROX house

'at home.' (Goudswaard, 2005 p. 272)

- (19) *ttas balay*
top house

'On top of the house.' (Goudswaard, 2005 p. 272)

- (20) *nong ttas balay*
at.PROX top house

'On top of the house.' (Goudswaard, 2005 p. 272)

Buru (Central Maluku) is a language which works somewhat similarly to Begak. In Buru, there are two sets of demonstratives, 'full' and 'reduced'. Reduced forms of demonstratives which occur before a noun are used adpositionally (note that post-nominal uses are unrelated, dealing with topicality). The demonstrative functions as the preposition, followed by its dependent noun.

(21) Prepositional

Da kadu-k na huma
3SG come-K **PROX** house

‘He came (here) to the house.’ (Grimes 1991 p. 171)

(22) Adnominal

Da puna huma naa
3SG do house **PROX**

‘He made this house.’ (Grimes 1991 p. 171)

(23) Prepositional and Adnominal

Da kadu-k na huma naa
3SG come-K **PROX** house **PROX**

‘He came here to this house.’ (Grimes 1991 p. 171)

The demonstrative preposition indicates a direction or location-carrying function equivalent to English *to, from, at, on*, etc. In addition to relating the nominal argument to its clause, however, the preposition additionally carries deictic meaning, relating the construction to the speaker or deictic center.

Demonstratives used as prepositions are divided into two sets based on semantic criteria: the first is for more general spatio-temporal relations, and the second is for those dealing with topographic relations.

Table 5. Buru demonstrative forms (adapted from Grimes (1991 p. 168))

Full	Reduced	Function
		general
saa	sa	indefinite (specific or non-specific)
naa	na	definite proximal (in space or time)
dii	di	definite distal (non-proximal)
		topographic
saka	sak/sa?	up, upward
pao	pa	down, downward
dae	da	upstream; towards emic center
lawe	la	downstream; away from emic center
aki	a?	across (stream, valley, ridge)

The meaning of the demonstrative preposition generally depends on the semantics of the verb, in addition to the context of the clause. It may have multiple interpretations depending on the context.

(24) *Da egu-h di ringe*

3SG transfer_control-it **DIST** 3SG

‘He took it to him.’ or ‘He got it from him.’ or ‘He got it at his place.’ (Grimes 1991 p. 271)

However, although meanings of ‘to,’ ‘at,’ or ‘from’ may be implied or derived from the semantics of the verb, they can also be explicitly expressed means of two dependent prepositions, *gam* ‘to’ and *fi* ‘at; from’. *Gam* and *fi* obligatorily occur with a demonstrative, which may either be a full demonstrative functioning as a locative adverb, or then a prepositional demonstrative with an overt object of the preposition.

- (25) *Da iko gam sak Rana*
3SG go to up Rana

‘He went up to Rana.’ (Grimes 1991 p. 264)

- (26) *Da iko gam saka*
3SG go to up

‘He went to up there.’ (Grimes 1991 p. 264)

It is ungrammatical for *gam* or *fi* to be followed by a non-deictic locatable noun.

- (27) **Da iko gam Labuan*
*3SG go to Labuan

*‘He went to Labuan.’ (Grimes 1991 p. 263)

As in Begak, demonstrative prepositions are not the only prepositions in the language. Two common prepositions, *tu* and *ute*, do not carry deictic information. *Tu* is used for a wide variety of uses, such as comitative, instrumental, manner, and possession; *ute* is used to express dative ‘to’ and benefactive ‘for’ uses. Other prepositions in Buru are verbal, such as *eta* ‘to near, approach’, used in serial verb constructions or as a preposition meaning ‘until’. Verbal prepositions in Buru do not have to occur with deictics.

- (28) *kami iko-iko eta dena di huma saa*
1PE RD-go until arrive DIST house one

‘We kept on going until we arrived at a house.’ (Grimes 1991 p. 268)

In Wolof (Atlantic), the generalized prepositions *ci*, *ca* also mark proximal and distal deixis, respectively. The vowel of the preposition indicates the position of the object of the preposition relative to the speaker or deictic center.

- (29) *Mu ngi ci néeg bi*
3SG COP.PROX at.PROX room the.PROX.3

‘(S/)he is in the room (close).’ (Diouf, 2009 p. 202)

- (30) *Mu nga ca néeg ba*
3SG COP.DIST at.DIST room the.DIST.3

‘(S/)he is in the room (far).’ (Diouf, 2009 p. 202)

One other Atlantic language, Noon, uses similar deictic marking as Wolof, but with a different preposition. In Noon, the prepositions *fodii*, *fodaa* ‘as, like’ alternate based on the temporal or spatial deixis of the following noun, *-ii* for proximal and *-aa* for distal. These are two of the four total possible distance distinctions; the other forms, *-um* ‘close to hearer’ and *-úu* ‘very far,’ are not used with *fod-*. If the preposition is followed by a pronoun, a possessive suffix is used, unlike with other prepositions.

(31) Noon

bá hěwí' túuy fod-aa múus
3PL build hut like-DIST past_time

‘They build a hut as in the old days.’ (Soukka, 2000 p. 145)

(32) Noon

Mi tum fod-ii-garaa
1SG do like-PROX-2SG.POSS

‘I do as you do.’ (Soukka, 2000 p. 145)

Unlike Begak and Wolof, Noon does not show any deictic distinctions with a more general locative, however. The preposition *ga* in Noon would be considered an equivalent to *ci*, *ca* in Wolof, a common preposition which can mark various functions, including temporal and locative uses. The preposition *ga*, however, does not have any deictic meaning or component to it.

6 Type 2: Neutral-deictic adposition System

Type 2 languages, or languages with a neutral-deictic adposition system, show a split in locative adpositions, one set of adpositions with a neutral meaning unmarked for deixis, and a second set which is deictically specified. This system is found only in Semelai, although very limited evidence suggests two Atlantic languages, Biafada and Kasa, could potentially be assigned to this type as well. Two other languages, Dami and Paulohi, also have deictically neutral members of the set, although they are classified as type 3 and 4 languages respectively.

In Semelai, deictic marking in adpositions is actually more complex than in demonstratives. Locative prepositions are split into two types, *?en*, which is deictically neutral, and *ha?*, *he?*, *tə?*, *cə?*, which provide deictic orientation. A list of prepositions and their meaning is seen in Table 6.

In comparison, there are only two (adnominal/pronominal) demonstratives, *?nə?* ‘this’ and *ke* ‘that’, which may be further emphasized by reduplication, *nə?nə?* ‘this here’ *kke* ‘that there’. There are no locative adverbs in Semelai;⁸ instead, prepositions may occur with demonstratives to form a deictic locative expression, e.g. *ha? nə?* ‘here’. All five locative prepositions, *leŋ*, and *tə?en* (as well as sporadic locative nominals) can also derive demonstratives by means of the prefix *na-*, e.g. *na-ha?* ‘this here’.

⁸Kruspe does mention two locatives, *cop* ‘down yonder’ and *heŋ* ‘up yonder’, but there are no examples given, and they are described as locative nominals rather than adverbs. For more information, see Kruspe (1999 p. 305).

Table 6. Semelai prepositions (Kruspe 1999 p. 359-360)

Locatives 'in, on, at'		
ʔen	'LOC'	'in, on, at' (deictically neutral)
haʔ	'AT:prox'	immediate location of speaker
hɛʔ	'AT:above'	above speaker
tɔʔ	'AT:across'	same level, lateral to the speaker
cɔʔ	'AT:below'	below speaker
Directionals 'to'		
tet	'TO:spec'	'to, neutral, specific'
te	'TO:unspec'	'to, neutral, unspecific'
leŋ ləŋ	'TO:up'	upward, upstream, uphill
təʔɛn	'TO:down'	downward, downstream, downhill
təm	'from'	source
rəm	'with'	instrumental, comitative
dɔ	'of'	possessive

Note that the preposition *haʔ* can also function as an attributive adnominal, which other prepositions cannot; it cannot function pronominally, however, which *ʔnɔʔ* 'this' and *ke* 'that' are able to do.

The deictically neutral preposition *ʔen* cannot co-occur with demonstratives in the prepositional phrase, nor can it be used temporally (Kruspe, 1999). Deictic locatives on the other hand encode the location of the referent deictically, with respect to the location of the speaker or deictic center. There is one proximal term, *haʔ*, and three distal, *hɛʔ*, *tɔʔ*, and *cɔʔ*, which provide further elevational specification.

All deictic locatives have the same range of functions, used for peripheral adjuncts, predicatives, attributives, and indirect objects (Kruspe, 1999).

(33) Peripheral adjunct

ki=ʔye=cəʔ syɔk haʔ maŋkək, haʔ kwaliʔ
 3A=see=EM trace at.PROX bowl at.PROX wok

'She saw traces of food in the bowl (and) in the wok.' (Kruspe 1999 p. 362)

(34) Predicative

tŋi ptəm cɔʔ balay
 daylight night at.DOWN verandah

'Day (and) night down (he was) down on the verandah.' (Kruspe 1999 p. 363)

(35) Attributive

yək=cəʔ wɔy tɔʔ ke
 fetch=EM knife at.ACROSS there

'Fetch the knife over there!' (Kruspe 1999 p. 364)

(36) Indirect Object

rəkək ki=jon cə? bapa?
cigarette 3A=give at.BELOW father

‘She gave the cigarettes down to her father.’ (Kruspe 1999 p. 365)

Two other languages could possibly be in the same category as Semelai, as mentioned previously. According to Wilson (1993 p. 87) there are two locative prepositions in Biafada, *fo*, which is neutral for deixis, and *yaŋ*, ‘here (at)’. There does not seem to be a dedicated distal form. Kasa also possibly shows a distinction with *bot* ‘to, for’ (deictically neutral) vs. *bo* ‘to, for’ (distal), according to Diatta (1998).

7 Type 3: Ambitransitive Adverbial-Adpositional System

In a number of languages classified here as belonging to the ambitransitive adverb-adposition system type, adverbial or adnominal demonstratives are able to be used adpositionally, carrying a nominal complement.

Languages of this type are somewhat comparable to some adverb-prepositions in English, which optionally carry complements, such as the following:

- (37) a. The man went inside.
b. The man went inside the house.

However, parallel constructions with locative demonstratives are not possible in English:

- (38) a. The man went there.
b. * The man went there the house.

In Lewotobi Lamaholot, basic demonstratives are able to be used as adpositions. They show an ‘ambitransitive’ use, analogous to verbs which are able to be used either transitively or intransitively, and optionally take a (pro)nominal argument⁹.

(39) Locative adverbial

go tei te
1s live DEM.PROX

‘I live here.’ (Nagaya 2017 p. 50)

⁹Demonstratives in Lewotobi Lamaholot also appear to have predicative uses, although Nagaya does not discuss this use in detail. Fricke (2019) mentions cognate forms in Central Lembata; however, for Fricke, the basic form of demonstratives is analyzed as verbal, with additional adnominal and adpositional uses, and other Flores-Lembata languages seem to also show predicative forms. More research is needed on Flores-Lembata languages and their use of demonstratives, particularly predicatively.

(40) Adpositional

go tei te laŋo?
1s live DEM.PROX house

'I live here (in) the house.' (Nagaya 2017 p. 50)

(41) Adpositional

**Opu go?ē tobo pe kurse*
uncle 1SG.POSS sit DEM.DIST chair

'My uncle is sitting there (far from speaker) (on) the chair.' (Nagaya 2012 p. 217)

Note that the demonstrative is obligatory with the adjunct NP, and the sentence is ungrammatical without it.

(42) **go tei laŋo?*

1s live house

Intended for: 'I live (in) the house.' (Nagaya 2017 p. 51)

(43) **opu go?ē tobo kurse*

uncle 1SG.POSS sit chair

Intended for 'My uncle is sitting on a chair.' (Nagaya 2012 p. 218)

When demonstratives are used as adpositions, they indicate only whether the location introduced by them is far from or close to the speaker or deictic center, and make no implications about topology or vector. They are primarily used for canonical spatial deixis.

Whether such forms can be used for more specified meanings such as 'between', 'through', or 'around' is mostly unknown, but limited evidence does suggest that this is indeed the case, seen in Example (44) below.

(44) *go sepa bal lewa? pe jendera rae woho? k-ai*
1SG kick ball go.through DEM.DIST window DEM.MOUNTAIN outside 1SG-go

'I kicked the ball through the window toward the direction of the mountain.' (Nagaya, 2012 p. 106)

Lewotobi Lamaholot demonstratives may be seen in Table 7. Note that there are additional topographic-based demonstratives *rae* 'mountainward', *lau* 'seaward', *wali* 'coastal', *teti* 'up', *lali* 'down', seen in Example (44); these do not appear to show any syntactic difference from egophoric-based demonstratives, although it is uncertain whether manner adverbial derivations exist for such forms.

Solor Lamaholot and Lewoingu, closely related languages to Lewotobi, work similarly.

(45) Solor Lamaholot

Kopō déi lau lango one'ē
Kopō stand SEA house inside

'Kopō is standing inside the house, in the seaward direction.' (Kroon 2016 p. 142)

Table 7. Demonstratives in Lewotobi Lamaholot (Nagaya, 2017 p. 48)

Proximal-Point	Basic te/tehe 'here'	Nominalized te?ē 'this'	Manner Adverbial te? 'this way'
Proximal-Areal	pi/pihi 'here'	pi?i 'this'	–
Distal	pe/pehe 'there'	pe?ē 'that'	pe? 'that way'

(46) Lewoingu

kvdin perusahaan pe'en gvleke pi Maumere pe Maumere nvkvn sung to'u hena kvdin perusahaan
 then business that move **PROX** Maumere **DIST** Maumere only year one only then business
pe'en gvleke muri lau Ambon
 that move again **SEA** Ambon

'That business moved to Maumere for a year before moving again to Ambon.' (Nishiyama & Kelen 2007 p. 157)

Hewa Sika, another Flores-Lembata language, shows some similarity to Lewotobi, Solor, and Lewoingu, as well as some differences. Topographic spatial reference terms like *lau* 'seawards', *reta* 'hillwards', *ripa* 'west', *wali* 'east', *lala* 'up' and *wawa* 'down' can function both adverbially as well as adpositionally (Fricke, 2014). In this sense it is similar. For speaker-oriented deixis, however, only the distal demonstrative 'ia has both adverbial as well as adpositional functions; the proximal demonstrative 'ete cannot function as an adposition.

In adpositional use, 'ia generally functions as the default preposition, without any distance related-properties. However, Fricke does mention that 'ia occurs primarily (but not exclusively) when describing situations not located in an exact place in the village, or when the speaker is outside of Hewa. In everyday use in the village of Hewa, people appear to primarily use the absolute geocentric spatial terms as prepositions (Fricke, 2014).¹⁰ How easily 'ia can be used for proximal referents remains unclear.

In Nuauulu (Central Maluku), some parallels are also seen with what are labeled as 'directionals': *mai* 'here,' *kua* 'around here,' *nau* 'seaward,' *noi* 'unspecified direction,' *pani* 'across,' *poe* 'down,' *ria* 'inland,' *roe* 'up,' and *hae* 'on' (Bolton, 1990). They can be either adpositional or adverbial, flexible in their use.¹¹

(47) *amahai mai tuniai karai pusu a-nana*
 live here world must follow 2SG-work

'To live in this world you must work.' (Bolton 1990 p. 85)

(48) *masi a-eu-a mai*
 please 2SG-go-2SG here

'Please come here.' (Bolton 1990 p. 141)

¹⁰Note that *ia* is in other Flores-Lembata languages as well, used either as a general deictically neutral preposition, and/or as the verb 'to stay.'

¹¹Some of these additionally appear as complements of adpositions as well, suggesting that they may not form a homogeneous group in terms of morphosyntactic behavior.

Bonggi and Ida'an, both Northeast Sabahan languages, appear to show some ambitransitive locative demonstratives as well, although the status of Ida'an remains somewhat uncertain. Ida'an, a very closely related language to Begak, is analyzed by Moody as showing ambitransitive adverb-adpositions (Moody, 1988), a different approach than seen in Goudswaard's analysis of Begak (Goudswaard, 2005).

- (49) *Kedakil bio Tengkaput di'*
 PN and PN at.DIST

'Kedakil and Tengkaput were over there.' (Moody, 1988 p. 94)

- (50) *Kedakil bio Tengkaput di' egkun Sulug*
 PN and PN at.DIST land Sulu

'Kedakil and Tengkaput were over in Sulu.' (Moody, 1988 p. 94)

The difference between Begak and Ida'an is not specifically addressed anywhere, but a comparison of two different transcriptions by David Moody and John Banker of Ida'an wordlists both spoken in Sapagaya, one in 1979 and one in 1989, is perhaps telling. In the initial survey, the word for 'blood' is transcribed as *da'*; in the later survey, it's transcribed as *addá*. Similarly, for 'river', the word is transcribed in the initial survey as *luŋ*; in the later survey, it's transcribed as *allūŋ*. In Begak, both of these are transcribed as *dda'* and *lluŋ* on SIL's Webonary dictionary for Begak. While we cannot know for certain, it is possible that Moody's initial analysis precluded awareness of initial geminates, and a more recently analysis would view Ida'an as working the same as Begak.

In Bonggi, there is a general locative preposition *di* 'at' as well; this is not used as a locative adverb, however (Michael Boutin, p.c.). On the other hand, locative adverbs do allow for optional adjunct specification, such as the following:

- (51) *Milih kin-diti Pegah diti*
 Returned DIR-here Limbuak here

'(He) returned to here, (to) Limbuak here.' (Michael Boutin, p.c.)

Parallel to Lewotobi Lamaholot, a statement of **Milih Pegah* to mean 'He returned (to) Limbuak' would be ungrammatical without a locative adverb or preposition. If deixis is not specified, the speaker would use *di*, e.g. *Milih di Pegah* 'He returned to Limbuak' (Michael Boutin, p.c.). Alternatively, a locative deictic marker could be used, as in Example (51). Whether the preposition *di* 'at' is diachronically related to *dii* 'yonder' remains uncertain.¹²

Dami (Oceanic) is another language which possibly has a deictic component in its adpositions. Elliot describes Dami as having two adpositions, *oun* 'at, unseen by speaker and hearer' and *ein* 'at, place where speaker is', identical in

¹²Blust (2015) reconstructs **di* as a locative case marker/preposition for Proto-Austronesian, and **-di* as a 3rd person/distal deictic marker for Proto-Malayo-Polynesian. Whether the two *di* forms are ultimately connected remains uncertain, but Blust leaves the impression that they are not at least: '...the formal similarity of the CMs to core elements of demonstratives appears to be due to convergence in CV forms that are heavily employed in conveying grammatical information' (Blust, 2015 p. 26). The problems in disentangling *di* from *dii* in Bonggi appears to be a reflection of the same problem at a higher level. Given that there are languages like Hewa (discussed above) and Kelabit (North Sarawakan), in which *ngi* can mean both 'at' as well as 'there (distal)' (Hemmings, 2016 p. 174), more research is needed on the connection between demonstratives and adpositions in Austronesian.

form to two locative adverbs with similar meanings (Elliot, 1979 p. 6). There are also two additional adverbs, *an* ‘there (right there)’ and *yer* ‘here (right here)’, which are not described as being used adpositionally.

Elliot (1979) mentions that there is one additional locative adposition, *boun*, which does not have a deictic component to the meaning. In this sense, Dami shows some parallels to Semelai.

- (52) *aya gama ein Ukarumpa masen anei nigin naalu aranj-up*
 1SG now at.PROX Ukarumpa 1PE.came that because little I.will.talk

‘Now I will tell you a little about us coming to Ukarumpa’ (Elliot 1979 p. 43)

- (53) *...nemanj pononj own, sain aayunj paatu boun...*
 1PE.POSS place at.DIST, time ripe fruit at

‘...in our village, when the fruit is ripe’ (Elliot 1979 p. 42)

Tolai (Oceanic) is a marginal example in which local deictics allow for adjunct phrases to further specify the location. Proper names of places, such as village names, directly follow the deictic, e.g.

- (54) *dia papalum a-ti Raluana*
 they.PL work LOC-here Raluana

‘They work here (in) Raluana.’ (Mosel 1982 p. 115)

However, only proper nouns are able to directly follow the deictic. Three nouns, *gunan* ‘village,’ *uma* ‘garden,’ and *ta* ‘sea’ must use a special connective particle *na*.

- (55) *dia papalum a-ti na gunan*
 they.PL work LOC-here CONN village

‘They work here in the village.’ (Mosel 1982 p. 115)

Note that the locative demonstrative use here is adverbial, not adnominal, which shows a different syntax. According to Mosel (1984), ‘this’ as an adnominal modifier would be *go* followed by an article for all non-kinship nouns (kinship nouns would not have the article). Mosel further states that ‘As local deictics are not often used as adnominal adjuncts, we lack sufficient data to be able to show all their positions within noun phrases’, further suggesting that the use in these examples is modifying the clause, not the NP (Mosel, 1984 p. 26).

Common nouns referring to other places use an article.

- (56) *dia papalum a-ti ra valian*
 they.PL work LOC-here ART beach

‘They work here at the beach.’ (Mosel 1982 p. 115)

Both types of common nouns also optionally allow for a preposition, which does not appear to be the case for proper nouns.

- (57) *a-ti ta kada gunan*
 LOC-here at our.PI village

‘here in our village’ (Mosel 1982 p. 116)

- (58) *a-kamana ta ra iap*
 LOC-there at ART fire

‘there on the fire’ (Mosel 1982 p. 121)

Jero is a Kiranti language which marginally behaves somewhat similarly to the languages mentioned above. In Jero, there are five demonstrative roots: *a* ‘proximal’, *u* ‘distal’ *nɔ* ‘yonder (same elevation)’, *ɣɔ* ‘yonder (above)’, and *tɔ* ‘yonder below’ (Opgenort, 2005 p. 108). Three of these, *nɔ*, *ɣɔ*, and *tɔ*, have derivations which are able to be used both as adverbs as well as postpositions: *nɔmal(a)* ‘beside, towards horizontal’, *tɔmal(am)* ‘above’, and *ɣɔmal(am)* ‘below’. Thus *phutur tɔmal* ‘head above’ could mean both ‘the head is above’ as well as ‘above the head’. However, only elevational distinctions are possible with Jero postpositions; there are no horizontal distance distinctions.

8 Type 4: Verbal-Adpositional System

Type 4 languages are those labeled as the verbal adpositional system type, where there exists some ambiguity between verbs and adpositions, and (co)verbs show deictic distinctions with locative or directional meaning. As we do not always have detailed data on how distinct verbs are from adpositions, all languages which show potential ambiguity between adposition and verb are addressed in this section.

As mentioned earlier, verbs are a reasonably common source of grammaticalization into adpositions. For adpositions with deictic distinctions, there are two main sources of verbs: verbs that indicate location (e.g. ‘be here, be there’), as well as directional verbs ‘come’ and ‘go’.

Thao is a language with relatively clear examples of prepositional demonstratives which originally grammaticalized from locative deictic verbs (this use is still possible as well).

According to Wang (2004), Thao makes a 4-way distinction in its prepositional demonstratives: proximal *inay*, medial *isa(há)y*, distal (but visible) *isu(hú)y*, and nonvisible *itusi* or *itantu*.

Prepositional demonstratives require a nominal argument, and like other languages mentioned so far, prepositional demonstratives show canonical spatial relations, and have multiple interpretations depending on the context. They do not specify the ground or path.

- (59) *Yaku shmital inay Barawbaw*
 1S.ABS INTRNS.stay.one.day/night at.PROX Te.Hua.village

‘I stayed one day/night here in Te Hua village’. (Blust 2003 p. 955)

- (60) *Cicu tmiktik aqtalha isay kadanaran.*
 3S.ABS INTRNS.chop pork at.MED cutting.board

‘She is chopping pork on that cutting board.’ (Blust 2003 p. 987)

Prepositional demonstratives are also verbs with a meaning of ‘be here, there’. They are ordinary intransitive locative verbs which can take the same tense, aspect, and mood morphology as other types of verbs.

- (61) *Yaku i<ni>nay Barawbaw*
1SG.ABS <PFV>here Te.Hua.village

‘I lived in Barawbaw (Te Hua) village’. (Blust 2003 p. 637)

Deictics without overt marking of tense, aspect, or mood show syntactic ambiguity, and could be interpreted as either a preposition or a verb.

- (62) *rusaw isay wazaqan lhumbaha.*
fish there lake INTRNS.float

‘The fish in the lake are floating (belly up).’ (Blust 2003 p. 529)

A second language, Paulohi, is described by Stresemann (1918) as having three prepositions with a deictic distinction: *wei* ‘at (here)’, *wene* ‘at (there)’, and *iamai* ‘at (far removed)’. All three prepositions can also be used verbally, to indicate a static location. Additional locative prepositions include *sue* ‘at, visible’ and *iaai* ‘at (no deictic component)’.

- (63) *na ka-tue wei wesie nei*
let 1PI-sit PROX.at woods here

‘Let us sit here in the woods.’ (Stresemann 1918 p. 61)

Nakanai is a challenging case which is tentatively argued to have deictically marked adpositions through what are described as ‘coverbs’ by Johnston (1980). Coverbs in Nakanai are compounds consisting of two bound roots: a bound verbal root and a bound locative root, shown in Table 8.

Table 8. Nakanai coverbs (Johnston, 1978 p. 1060-1061)

Bound verb roots			
go-	to proceed towards stated direction; to		
o-	be situated in proximate direction		
so-	be situated in distal location, or proceed to stated direction		
lo-	be situated in adjacent location, or come from stated location		
Bound locative roots			
-ata	up	-lau	seawards
-talo	down	-tivu	inland, ashore
-ilo	inside	-luma	direction of nearest village
-gala	outside	-rivo	gardens, bush, hinterland proximate to village
-lagu	front	-hulu	men’s clearing or men’s house
-tigu	behind	-io	there, thither
-muli	east along coast	-mai	here, hither
-ale	west along coast	-ve	‘where?’

Locative coverbs can function variously in verbal, adverbial, prepositional, and to a limited extent, participial types of syntactic relations. They occur predicatively, as the main verb or as either of the two verbs in a serial verb construction; as the second verb, they function in a way similar to the ‘ambitransitive’ adverb-adpositions described in the previous section.

- (64) *e Bitai eia go-muli e Rabaul, eia hilo e tua-la*
 NM.PROP Bitai 3SG go.to.PRED-east NM.PROP Rabaul, 3SG see NM.PROP older.sibling-3SG.POSS

‘Bitai went up to Rabaul and met his older sibling there.’ (Johnston 1980 p. 125)

- (65) *egite hele so-muli*
 3PL flee DIST.PRED-east

‘They fled to the east.’ (Johnston 1980 p. 192)

- (66) *egite tilia o-muli e Galilo*
 3PL dance PROX.PRED-east NM.PROP Galilo

‘They danced at Galilo.’ (Johnston 1980 p. 212)

- (67) *la tavile Ubae, egite pigi-a so-talo la lalu*
 NM.C woman Ubae 3PL throw-away DIST.PRED-down NM.C water

‘There was an Ubae woman, that they threw into the river.’ (Johnston 1980 p. 210)

In addition to the coverbs mentioned above, Nakanai also has a single preposition, *te*, which partially overlaps in use with the locative coverbs, and sometimes co-occurs with them.

- (68) *eia pou te la luma tetala*
 3SG sit at NM.C house 3SG.POSS

‘He is staying in his house.’ (Johnston 1980 p. 187)

- (69) *egite vi-sae moli-a so-ata te sipi*
 3PL CAUS-climb just-3SG DIST.PRED-up at ship

‘They loaded it onto the ship.’ (Johnston 1980 p. 205)

The difficulty with Nakanai lies in not being able to tell whether the locative construction above should be seen as verbal, or whether what is labeled here as a verb-locative compound should be actually analyzed as a multifunctional root, among which adpositions, adverbs, verbs, and coverbs are all functions that it fills.

Although the presence of *te* suggests that these compounds are verbal, the use of *te* is a bit more complicated. When the coverb *go-LOC* is used, *te* is obligatory with animate NPs, and is ungrammatical with inanimate NPs (Johnston, 1980). It is uncertain whether *o*, *so*, or *lo* show any restrictions.

- (70) **eau ge go-muli te Rabaul*
 *1SG IRR DIST.PRED-east at Rabaul
 ‘I will go east to Rabaul (place name).’ (Johnston 1980 p. 34)

- (71) **eau ge go-muli e tete*
 *1SG IRR DIST.PRED-east NM.PROP father
 ‘I will go east to my father.’ (Johnston 1980 p. 34)

Furthermore, *te* appears to behave in much the same way that coverbs do. *Te*-constructions primarily occur after the verb, and may also be predicative.

- (72) *egite te la kansel*
 3PL at NM.C council
 ‘They adhere to the council.’ (Johnston 1980 p. 38)

Te-constructions may be topicalized, but recall that coverb constructions are also possible to topicalize, seen in Example (13) repeated below.

- (73) *te la kavikoki eau sae la kari*
 at NM.C morning 1SG board NM.C truck
 ‘In the morning I boarded a truck.’ (Johnston 1980 p. 58)

- (13) *o-mai e Karapi la valalua ge hilo isa la paga*
 PROX.PRED-here NM.PROP Karapi NM.C men IRR see one NM.C thing
 ‘Here in Karapi, the people are really going to see something (remarkable).’ (Johnston, 1980 p. 126)

13

Some languages do allow for topicalization of serial verb constructions, so topicalization by itself is not definitive evidence for coverbs to be adpositions, as in the following Lewoingu example.

- (74) *pana pe lango na'en n-ai Bala*
 walk to house his 3SG-go, Bala
 ‘Walk to his house, Bala did.’ (Nishiyama & Kelen, 2007 p. 128)

Ultimately, I chose to tentatively include Nakanai here, in keeping with the principle of maximal inclusion, but such inclusion should be viewed as tentative.

Finally, Central Lembata mentioned earlier is also repeated here; although it shows a number of parallels to Lewotobi with demonstrative adpositions optionally allowing for arguments, the basic form of demonstratives is analyzed as

¹³Aikhenvald (2018 p. 226) argues similarly for White Hmong, namely that because *nyob* ‘be at’ can be fronted to sentence-initial topic position, it is on the way towards grammaticalization into a locative preposition.

predicative (Fricke, 2019). Hewa Sika, Kedang, Lewoingu, Solor Lamaholot, and Alorese also show at least some overlap with predicative use and adpositional or adverbial uses, although it is not certain how much.

Nagaya also gives some examples of demonstratives functioning predicatively, but does not discuss function or frequency in detail (Nagaya, 2017 p. 52).

- (75) *Hugo pe (skola)*
Hugo DEM.DIST (school)

'Hugo is there ((in) the school).' (Nagaya 2017 p. 52)

Although Kedang is also a Flores-Lembata language, it shows a dramatically different system than any other language in its subgroup. Kedang appears to heavily prefer topographic-based orientation, which then show further derivations and compounds for relative deictic distance. There are around 100 different deictic forms, 69 of which can be used adpositionally. The word *ɔli* for instance means 'to (there), landwards, approximately level, at a medium distance'; *ɔli wayang* on the other hand would indicate a larger distance landwards, and *bèli* would indicate a small, specific distance.

- (76) *Nau luqa ɣi bale ɔle Lewoleba*
later tomorrow 1SG return DOWN.MED.at Lewoleba

'Tomorrow I will return to Lewoleba.' (Samely 1991 p. 125)

- (77) *adan bèyo ai suo tebeq tèqèl*
arrive PROX.ACROSS.at tree 3PL sit down

'Arriving at the tree they sat down.' (Samely 1991 p. 126)

Of these 69 forms, 5 can only be used prepositionally, 13 can be used as demonstrative pronoun, preposition, or adverb, 13 others can only be used as preposition or adverb, 8 can be used as preposition or verb, and 30 show multifunctional forms which can be prepositional, adverbial, or verbal. Meanings are primarily location and destination (at/to), as well as distinct derived forms marking source (from). Not all logical possibilities for meanings and distances are filled for all parts of speech, and there are a number of gaps in the system.

Kedang is included in this section because nearly half of all the forms are able to function verbally as well as adpositionally, although strictly speaking Kedang really should belong in its own category, due to the complexity of the system. In the two examples above, *ɔle* is only a preposition, and *bèyo* functions as a demonstrative pronoun, an adverb, or a preposition.

A second type of deictic distinction is found in a number of Austronesian languages in which distinctions with adpositions originate from the verb *mai* 'to come'.

In Tetum Dili (Timoric), a deictic distinction is made between *ba* 'to, for' and *mai* 'to, for (speaker proximal)'. *Ba* and *mai* are also verbs, meaning 'go to' and 'come to', respectively.

In the following example, the speaker is also in Dili; in the second one, they are not.

- (78) *Nia haruka surat ida mai Dili*
3SG send letter INDEF PROX.to Dili

'He is sending a letter to Dili.' (Hull & Eccles 2004 p. 145)

- (79) *Nia haruka surat ida ba Dili*
 3SG send letter INDEF **DIST.to** Dili

‘He is sending a letter to Dili.’ (Hull & Eccles 2004 p. 145)

Selaru (South Tanimbar) functions somewhat similarly to Tetum, in that two directional prepositions, *ti* ‘to’ and *ma* ‘to (speaker proximal)’ make a deictic distinction. They are used with verbs of motion and location, such as ‘carry’, ‘put’, ‘sit’, and ‘lay’ (Coward, 1990).

- (80) *amo auswa i ma yaw*
 father old 3SG **PROX.to** me

‘Father is older than me.’ (Coward 1990 p. 69)

- (81) *Toto Dace auswa yaw ti i*
 boy David old 1SG **DIST.to** 3SG

‘I’m older than David.’ (Coward 1990 p. 69)

However, only *ma* in Selaru originates from a verb (‘to come’); *ti* shows no other meaning than ‘to’.

Fijian has a preposition *mai* ‘at’ which originates from the verb ‘to come’; however, unlike the previous examples, it is not used for a direction, but rather a static location removed from the deictic center (Lichtenberk, 1991).

- (82) *Sā tiko mai waqa na koto.*
 ASP be.located **DIST.at** boat ART box

‘The box is on the boat.’ (The speaker is not on the boat.) (Lichtenberk 1991 p. 484)

If the speaker and the box are in the same location, however, a different preposition is used.¹⁴

- (83) *Sā tiko e waqa na koto.*
 ASP be.located **PROX.at** boat ART box

‘The box is on the boat.’ (The speaker is on the boat.) (Lichtenberk 1991 p. 485)

If the speaker is the subject of the locative sentence, the use of the preposition *mai* is possible only for past or future tenses.

- (84) *au tiko e waqa*
 1SG be.located **PROX.at** boat

‘I am on the boat.’ (Geraghty 1976 p. 513)

¹⁴Note that the preposition *e* does not originate from a verb.

- (85) *au tiko mai waqa*
1SG be.located DIST.at boat

'I was on the boat.' (Geraghty 1976 p. 513)

Some temporal parallels are also seen with constructions like *e liu* 'in the past' versus *mai liu* 'in the distant past'.

The distinction between *mai* and *e* is neutralized if the complement of the preposition is a proper noun; such constructions use *vei* rather than *mai* or *e*.

- (86) *e tiko mai na vale ko koya.*
3SG be.located DIST.at ART house ART

'He is staying at the (distant) house.' (Geraghty 1976 p. 509)

- (87) *e tiko vei Samu vale ko koya.*
3SG be.located at Sam ART 3SG

'He is staying over at Sam's place.' (Geraghty 1976 p. 509)

Lichtenberk (1991) discusses various grammaticalization processes of lexemes meaning 'to come', including as a preposition with an inherent deictic distance, and although only a few languages were mentioned here, it is highly likely that other Austronesian languages will show similar constructions parallel to Fijian or Selaru.

9 Type 5: Fused deictic System

The last main category to be discussed is the fused deictic type, known primarily from two (distantly related) languages, Ap Ma and Waran. In this type a deictic component is fused with adposition stems to form complex adpositions marking deixis. Ap Ma and Waran do not have adpositions without deixis marking, but this is not a requirement for the type.

A more limited example of this type may also be potentially found in Dusun languages and Pangasinan, in which locative adverbial deictics are combined with a generalized adposition. Unlike in Ap Ma and Waran, there are other adpositions, although highly limited in number; other adpositions do not appear to be able to combine with deictics.

In Ap Ma postposition stems obligatorily attach either to a deictic marker *gi-* (proximal), *mi-* (medial), and *di-* (distal), or to a pronoun prefixed to the postposition stem, seen in Table 9.¹⁵

- (88) *nyimi-ba Astilelia d-okol wis*
some-NT Australia DIST-through come.PFV

'Some come from Australia.' (Pryor 1986 p. 32)

¹⁵Note that two additional forms exist, proximal plural *wi* and distal plural *li*.

Table 9. Ap Ma postpositions (adapted from Pryor (1990 p. 5))

Gloss	Root	Proximal	Medial	Distal
'with' (comitative)	-nin	gi- ganin	mi- manin	di- danin
'with' (inanimate comitative)	-pa	gipa	mipa	dipa
'with' (instrumental)	-n	gan	man	dan
'for' (beneficiary)		gayak	mayak	dayak
'at, from'	-aak	gaak	maak	daak
'from'	-uk	guk	muk	duk
'in'	-in	gin	min	din
'to'	-ada	gada	mada	dada
'under'	-abe	gabe	mabe	dabe
'on'	-aal	gaal	maal	daal
'near'	-el	gel	mel	del
'through'	-okol	gokol	mokol	dokol
'above'	-atiyel	gatiyel	matiyel	datiyel

- (89) *wao ma-nin mai-n̄ bo-gi-s-il*
 grandfather MED-with MED-poss village-PROX-go-IPFV

'She came with the old man to his village.' (Pryor & Farr 1989 p. 139)

This construction seems to at least partially have arisen due to an unusual phonological requirement in Ap Ma, namely that certain enclitics (a category which includes postpositions, case markers, and topic/focus markers) require proclitics as phonological hosts in order to form well-formed words.¹⁶ Proclitics which can function in this way are personal pronouns and deictics.

As postpositions belong to a class of enclitics that require proclitics as hosts, they can only follow pronouns or deictics. If the object of the postposition is a pronoun, then no deictic is 'required'.

- (90) *ape ndi ni-nin ta-p*
 father FOC 1SG-with walk-PFV

'Father walked around with me.' (Killian & Barlow 2022 p. 42)

However, it would not be possible for a postposition immediately to follow a noun, as nouns do not participate in this unusual proclitic-enclitic relationship that postpositions require. By fusing with a deictic, the postposition becomes capable of taking any NP as its object. When no particular deictic distinction is intended, a speaker may use the medial form in a somewhat semantically bleached fashion (Killian & Barlow, 2022).

¹⁶One reviewer asked what a 'clitic' is in the context of Ap Ma, and whether it might actually indicate that the adposition clitics themselves do not express demonstrative information. While it is technically true in a sense that adpositional roots do not contain deictic information, adpositions with nominal referents do still obligatorily fuse with deictic proclitics. Bare adpositions are not possible, and there is currently no evidence that they have ever been possible. Although related Keram languages do allow for bare postpositions with nouns, so we can conjecture that it was possible in Ap Ma as well at some point in the past, we have no information about how that would have worked. Adpositions with pronominal referents, however, do not have this requirement, and do not usually occur with deictic information. The question of what is a 'clitic' in Ap Ma is a fascinating one deserving of further research, and the reader is advised to check Killian & Barlow (2022 p. 43-46) for further details.

- (91) *nyi-ba lo-sala li-nin pasta woksap m-in s-ap-ma*
 1SG-NT QUANT-three 3PL-with pastor workshop MED-in go-PFV-EPIS

'It's a fact that I went there three times with them to the pastor workshop.' (Wade 1984 p. 55)

It should be noted that deictics in Ap Ma have a somewhat unusual distribution. Deictics do not appear in their bare forms; instead, they can attach to verbs, postpositions, or a number of bound grammatical markers indicating case, emphasis, and topic. Deictics may also fuse with personal pronouns or other deictics. Deictics cannot fuse directly with nouns, unless the fusion additionally includes verbs, postpositions, topic/case markers, or other deictics.

As they do not occur in bare form or directly modify nouns, crosslinguistically familiar deictic categories such as demonstrative pronouns and demonstrative adverbs are either extremely rare or totally absent in Ap Ma.

Postpositions in Waran function similarly to Ap Ma, in that deictic components are obligatorily fused with adpositions with nominal referents. No information is known on how postpositions interact with personal pronouns. In an unmarked situation where the location of the referent is unimportant, the distal deictic *da-* is used (Butler, 1981); Waran differs in this respect from Ap Ma, which uses the medial *mi* for this purpose.

Table 10. Waran postpositions (adapted from Butler (1981 p. 49))

Gloss	Root	Proximal	Medial	Distal
'with' (Instrumental) -dik	gadik	ga-nadik	na-dadik	da-
'on' (temporal)	-jin	gajin	najin	dajin
'at'	-wa	gawa	-	dawa
'to'	-na	gana	-	dana
'from'	-ka	gaka	-	daka
'from (animate source)'	-gin	?	?	dagin
unknown meaning	-kin	?	?	dakin

The meaning of *-kin* in Table 10 is uncertain. Butler (1981 p. 40) also notes that he has not observed medial forms of 'at', 'to', or 'from', but it is uncertain whether such constructions are not possible. Furthermore, it is also uncertain whether *-gin* 'from (animate source)' can combine with proximal or medial forms, in addition to distal forms.

- (92) *nga-na nga-may da-p Rikan da-wa kaka-ra-ñ*
 1SG-POSS 1SG-wife DIST-SP Likan DIST-at leave-NP-N3

'I left my wife at Likan.' (Butler 1981 p. 10)

- (93) *ñaka gu krung ga-na yi-riyu-ñ*
 yesterday 1SG village PROX-to come-PL-N3

'Yesterday I came to the village.' (Butler 1981 p. 40)

- (94) *ikamang kabop wi ga-dik gu kip i-Ø*
 knife small very PROX-with 1SG pig kill.PR-N3.SG

'With (this) very small knife I killed a pig.' (Butler 1981 p. 59)

- (95) *gu Klorowom da-ka paye-Ø*
 1SG Klorowom **DIST-from** come-N3.SG

‘I came from Klorowom.’ (Butler 1981 p. 32)

Although there is relatively clear evidence that Waran shows deictic marking in adpositions in much the same way as Ap Ma, it lacks a convincing reason for such a construction. However, Ap Ma and Waran are in close proximity, and show a historic relationship, so one reasonable scenario for Waran to have acquired this construction is contacted-induced change. For further details, see Killian & Barlow (2022).

Pangasinan (Northern Luzon) and Tindal Dusun (Southwest Sabahan), as well as possibly other Dusun languages, are also tentatively assigned to the category of fused deictic systems. Unfortunately, however, the data is currently too scarce to be certain. Of the 35-40 different languages classified as Southwest Sabahan, not a single language has a descriptive grammar, and even grammatical sketches are limited in nature and scarce. Current data is thus inconclusive on whether any Dusun language has grammaticalized the forms described below to the extent that these languages should be properly included as having deictic marked adpositions.

Pangasinan is preliminarily assigned to this type, as it may have a grammaticalization in progress originating from the fusing of the generalized (non-personal) adposition *ed* with locative adverbs *diá* ‘here’, *ditán* ‘there (near addressee)’, and *dimán* ‘there (removed from both)’, giving the forms *diád* ‘here at’, *ditád* ‘there (near addressee) at’, and *dimád* ‘there (removed) at’. According to Benton (1971 p. 51), ‘the marker *ed* may become a suffix, *-d*, when the preceding stem ends in a vowel or /n/; in the latter case, the /n/ concerned is deleted.’ He then gives the following example:

- (96) *dimád bányo*
there.at bathroom

‘there in the bathroom’ (*dimád*=*dimán* + *ed*) (Benton, 1971 p. 51)

However, some of the examples that Benton gives suggest that the contracted forms function somewhat differently, and that this is not simply a phonological coalescence of a demonstrative plus *ed*.

It is possible to front locative expressions, in which case the demonstrative element appears to be obligatory (Benton, 1971 p. 52).

- (97) *Dimád abóng so an-gan-án nen Pedro may mansánas*
there.at house TOP.NEUT LOC.FOC-eat-LOC.FOC OBJ.FOC.PERS Pedro TOP.SG apple

‘[It was] in the house [that] Pedro ate the apple.’ (Benton, 1971 p. 153)

Temporal expressions in initial position formed with *ed* also require a deictic element.

- (98) *Diád sábado so isabí to may ogáw*
here.at Saturday TOP.NEUT will.arrive NONFOC.3SG TOP.SG boy

‘The boy will be arriving on Saturday’ i.e. ‘this Saturday’. (Benton, 1971 p. 79)

The use of deictic marking in such constructions appears to originate in avoiding sentence-initial *ed*. If numbers are used in temporal expressions for instance, then the deictic marker is no longer needed.

- (99) *Alás dos ed ñgárem so isabí yo diá*
 (at) two in afternoon TOP.NEUT will.arrive NONFOC.2SG here

‘You’ll get here at two in the afternoon.’ (Benton, 1971 p. 128)

Dusun languages show a similar process of fusing demonstrative adverbs with a generalized preposition. In Tindal Dusun, Robinson (2005) mentions two prepositions, *hitid* ‘at (close)’ and *hilod* ‘at (far from speaker and listener)’, which are contractions of *hiti* and *hilo* with the preposition *id* ‘at, to.’¹⁷ It is unknown to what degree that these have grammaticalized in Tindal Dusun.

- (100) *tolu no t-ulun noko-rikot h-iti-d walé:*
 three only NLZR-people AF.CPL-arrive LOC-PROX-at house

‘Only three people came to the house.’ (Robinson, 2005 p. 16)

- (101) *nunu s<in>uaŋ nu h-ilo-d barait*
 what <CPL>enter 2SG.GEN LOC-DIST-at basket

‘What did you put in the basket?’ (Robinson, 2005 p. 16)

In Momogun Dusun, locative demonstratives are described by Forschner as showing a contracted form with the preposition *sid*, e.g.

- (102) *sinod badi*
 at.RMVD market

‘At the market over there.’ [sinod = sino ‘there’+ sid ‘at’] (Forschner, 1994 p. 44)

However, it does seem to be common to use *sid* without the contracted locative demonstrative form, indicating that Momogun would not fit the category of adpositional demonstratives, although it may be on the way towards developing such a construction.

- (103) *kumaa oku sid di Majimil*
 go 1SG LOC OBL Majimil

‘I go to Majimil.’ (Forschner, 1994 p. 45)

The frequency of such contractions is not mentioned for either Tindal or Momogun; however, Antonissen mentions that for Kadazan Dusun, locative demonstratives *doiti*, *duutia*, *duuhia*, *doino*, *doiho*, and *doihuu...* “are often used together with prepositions and other adverbs that indicate place, and need not be translated into English” (Antonissen, 1958 p. 19).

In order to confirm or reject these languages as having deictically marked adpositions originating from a contraction of locative adverbs and an adposition, more evidence would be needed on the frequency and degree of grammaticalization, as well as whether any language has replaced the original adposition with the contractions.

¹⁷It is likely that other forms are also possible, following the logic of combining the other demonstratives with *id*: *hinod* ‘far from speaker but near to listener’ and *hirid* ‘aforementioned or distal and out of sight,’ but it is not known for certain.

10 Borderline cases

In addition to Dusun and Pangasinan mentioned above, there are also some other marginal or borderline cases, some of which having already been mentioned, e.g. Tolai, which allows for deictic adpositions only with proper nouns, and Nakanai, which was discussed in the introduction and in Section 8. This section discusses some additional borderline cases, including some which are explicitly rejected.

First, a number of Germanic languages have compounds consisting of locative adverbs and adpositions, e.g. English *hereafter*, *thereafter*, German *hiernach*, *danach*, Dutch *hierachter*, *daarachter*, Swedish *härefter*, *därefter*. Many of these words are either formal or archaic, but in some cases deixis is still preserved, e.g. in the following examples in English, in which *herein* is used in a cataphoric context, and *therein* is used in an anaphoric context.

(104) The judge will determine the winner based on the criteria listed herein.

(105) I suggest you copy those pages and tell them to consider the concepts contained therein.

These are not adpositions, however, and such constructions are exclusively limited to adverbial contexts. It is not possible for *herein*, *hereupon*, *hereafter* to take arguments. In the following example for instance, *hereafter* is referring to the document that the reader is about to read.

(106) This subsequently led to the adoption of new changes in the 2010 agreement made between the two corporations (hereafter referred to as ‘the agreement’).

It is not possible to make this explicit without adding an extra preposition, e.g.:

(107) a. *This subsequently led to the adoption of new changes in the 2010 agreement made between the two corporations (hereafter the document referred to as ‘the agreement’).

b. This subsequently led to the adoption of new changes in the 2010 agreement made between the two corporations (hereafter in this document referred to as ‘the agreement’).

A second case which is tentatively rejected is that of Mao Naga (Kuki-Chin-Naga). According to Giridhar (1994 p. 148-171), there are a large number of compound forms made up of deictics and adpositions, e.g. *hi-* ‘proximal’ can attach to many different adpositional roots giving words like *hivahi* ‘on exterior surface’, *hivahino* ‘from the exterior surface of’, *hiphehino* ‘from on top’. Giridhar does not give any examples, but at first glance these do look like they might fit. However, there are two problems.

First, none of the postpositions have forms with anything other than the proximal. Second, a frozen *hi* was found also in some demonstrative forms in Sümi Naga, a related language, although as a suffix rather than a prefix (Amos Teo, p.c.). Teo was uncertain what function *hi* had, suggesting that it might be an old emphatic marker deriving from the proximal. If such is the case, then Mao Naga shows a diachronic connection to deixis marking in its adpositional system, but not a synchronic one. More examples and data would be needed to ultimately confirm or reject Mao Naga.

The last case to be discussed is found in Sogeram languages, in particular Aisi. In Aisi the locative suffix *-niŋ* with demonstrative roots gives a meaning of ‘here’ or ‘there’. Such forms can either be on their own or with a nominal adjunct, which may optionally be marked with its own locative enclitic (Daniels, 2015).

- (108) *Dibir yaka mo ga-niŋ kin-ikur*
 cucumber 1SG.POSS SPEC MED-LOC stay-3SG.IMP
 ‘One of my cucumbers will stay here.’ (Daniels, 2015 p. 794)
- (109) *Ware=rin ara-niŋ kin-er-aŋ*
 mountain=LOC FD-LOC stay-HAB-1PL
 ‘We used to live on the mountain.’ (Daniels, 2015 p. 794)
- (110) *Pini garaŋ ga-niŋ yok-e*
 palm.sp long MED-LOC go.up-3SG.IPST
 ‘She went up a tall pini palm.’ (Daniels, 2015 p. 794)

The function appears to be both adverbial as well as adpositional, but because the noun may also be marked with the locative enclitic, it suggests that Aisi does not quite fit. The fact that the locative marker is optional, however, is nonetheless intriguing, and worthy of further investigation.

11 Conclusion

This article presented a variety of languages in which a rare distinction is possible, that of deixis marking on adpositions. Although such a possibility is mentioned in (Hagège, 2010), it is framed only as a type of agreement, and no other languages than Wolof are specifically mentioned. Breunese (2019 p. 197) also mentions the possibility of adpositional demonstratives: ‘In my sample languages, however, I encountered various other demonstratives that do not seem to belong to any of these five categories [pronouns, determiners, identifiers, and adverbs, and verbs]. For instance, a paradigm of demonstratives described as prepositions exists in Begak (see Goudswaard 2005: 90–92), Buru (see Grimes 1991: 255–256), and Semelai (see Kruspe 1999: 359 ff.)’

Although deixis marking on adpositions is presented here as a typologically rare phenomenon, I would be hesitant to draw any conclusions on any specifics on negative data. At the moment we cannot infer much from the languages in which deictic adpositions are not specifically mentioned. That is, although only 31 languages are listed here out of 1162, it is entirely possible that more languages will be discovered with the category in question. However, although the details are lacking on exactly how rare deictic marking in adpositions is, it does seem probable that the rarity will not drastically change.

Table 11 looks at deixis marking in different parts of speech, comparing their relative rarity to deictic marking on adpositions.

Pronouns, demonstrative determiners, and adverbs are all well known and have been well studied (c.f. Diessel, 1999; Dixon, 2003). Demonstrative verbs have also been investigated in more recent works, such as Breunese (2019), and Killian (2021) expands considerably on the semantics and syntax of non-verbal predicative demonstratives. Additional and more fine-grained distinctions may also be needed for the categories of determiners and adverbs, categories which contain under-researched semantic types such as manner, quality, quantity, and degree. Some of these categories may end up being closer to adjectives than to determiners for instance, adding yet another category.

Table 11. Deixis marking on parts of speech

PoS	Relative rarity	Example
determiner	very common	used in apposition to a noun, e.g. I like <i>this</i> book.
adverbs	very common	He read the book <i>here</i> .
pronoun	common	used to replace a noun, e.g. I like <i>this</i> .
non-verbal predicator	uncommon	used in non-verbal clauses, e.g. <i>Here/This is</i> John.
verbs	uncommon	used for verbal heads of predicate, e.g. The book <i>is here</i> .
articles	unknown	I saw <i>the(proximal)</i> dog.
adpositions	rare	I bought soda <i>in(distal)</i> the store.
adjectives?	unknown	I had not imagined <i>such</i> cruelty.
nouns?	unknown	?

It is difficult to summarize the frequency of deictic marking in the different categories, as the amount of research varies considerably. While pronouns, demonstrative determiners, and adverbs have all been studied, little information is given on the frequency of the categories. Diessel (1999 p. 73) mentions at least some languages which can lack demonstrative determiners, demonstrative pronouns, or demonstrative adverbs, but no numbers are given, suggesting they are at least somewhat common but not universal.

Killian (2021) found 149 languages with predicative demonstratives out of a total of 1146, and ongoing research on demonstrative verbs suggests around 100 languages out of a total of 1146.

No study is known which looks at deictic marking in articles (found in e.g. Wolof, Somali, and Macedonian), so it is uncertain how rare they are. Adjectives and nouns have not been acknowledged as viable categories to date, and show uncertain validity, let alone frequency. Komi has similative pro-adjectives *mamuöm* (*tatsöm*) ‘like this’, *кутшöм* (*kutšöm*) ‘like which’, and *сэтуöм* (*setsöm*) ‘like that’, all of which can take comparative forms, e.g. *сэтуöмджык* (*setsömdžyk*) ‘more like that’ (Федюнёва, 2000 p. 33), suggesting that there may be some languages in the world which have adjectives with deictic distinctions. More research is needed on Komi similative pro-forms and what part of speech they belong to, let alone other languages of the world. Ross (2004) also argues that demonstratives in Oceanic languages originate from a type of local noun, and that many languages currently have locative nouns which form a paradigm with demonstrative bases. For more details, see Ross (2004).

But as to how adpositional deixis compares with these, aside from the questionable categories of adjectives and nouns, it is likely that adpositional deixis marking is considerably rarer than the rest. On why this might be, one thing to note is that adpositional deixis does not seem to have a single clear grammaticalization path.

Perhaps the most common path is seen in languages like Wolof and Buru, where locative adverbs become more flexible in allowing for arguments. The grammaticalization path of deictic spatial adverbs into adpositions is described in Creissels (2020), focusing on Tswana and Jóola Föõñi. Creissels states that:

In this grammaticalization process, the source construction is the LOCATIVE APPPOSITION CONSTRUCTION, defined as a construction consisting of the juxtaposition of two coreferential spatial expressions, a deictic spatial adverb and a spatial expression whose nucleus is a noun (as in English *here in the village* or *there on the table*). (Creissels, 2020 p. 11)

However, in contrast to languages like Buru and Lewotobi Lamaholot discussed previously, which are ambiguous between locative adverbs and adpositions, the languages Creissels investigates appear to be further along the path of

grammaticalization towards adpositions, a process perhaps partially mirrored by Wolof.

Although Wolof was mentioned earlier in this article, one fact that was not mentioned is that Wolof prepositions *ci*, *ca* originate as defective noun classes with a locative meaning, seen in table 12.¹⁸

Table 12. Deixis marking in Wolof noun classes (adapted from Guérin (2011 p. 111))

Class	Def. Article			Relative	Deictic Demonstrative				Endophoric Demonstrative				
	bi	ba	bu		bii	bile	bee	bale	boobii	boobu	boobule	booba	boobale
m-	mi	ma	mu	mii	mile	mee	male	moomii	moomu	moomule	mooma	moomale	moomee
w-	wi	wa	wu	wii	wile	wee	wale	woowii	woowu	woowule	woowa	woowale	woowee
j-	ji	ja	ju	jii	jile	jee	jale	joojii	jooju	joojule	jooja	joojale	joojee
l-	li	la	lu	lii	lile	lee	lale	loolii	loolu	loolule	loola	loolale	loolee
s-	si	sa	su	sii	sile	see	sale	soosii	soosu	soosule	soosa	soosale	soosee
k-	ki	ka	ku	kii	kile	kee	kale	kookii	kooku	kookule	kooka	kookale	kookee
y-	yi	ya	yu	yii	yile	yee	yale	yooyii	yooyu	yooyule	yooya	yooyale	yooyee
ñ-	ñi	ña	ñu	ñii	ñile	ñee	ñale	ñoõñii	ñoõñu	ñoõñule	ñoõña	ñoõñale	ñoõñee
f-	fi	fa	fu	fii	file	fee	fale	foofii	foofu	foofule	foofa	foofale	foofee
n-	ni	na	nu	nii	nile	nee	nale	noonii	noonu	noonule	noona	noonale	noonee
c-	ci	ca	(cu)						coocu				

Ci and *ca* do not function adverbially any longer, and are primarily used as adpositions. However, they still do show some remnants of their earlier meaning (that of a general locative), a meaning which *fi* and *fa* have largely taken over.

Most importantly, *ci* and *ca* may still occur as verbal enclitics (along with *fi*, *fa*) to mark location.

- (111) *ma-a-ca teg tééré b-i*
1SG-A-LOC.DIST put book CL-PROX

‘It’s me who put the book over there on/in that.’ (Torrence, 2013 p. 21)

A projected grammaticalization path would be as follows:

1. First, languages like Kadazan Dusun make highly frequent use of locative apposition constructions like “here in the village”.
2. Next, languages like Aisi or Tolai use the same construction, optionally allowing for an adposition “here (in) the village”.
3. Next, languages like Buru and Lewotobi Lamaholot could be considered, languages which no longer use adpositions in such constructions, and the locative demonstrative is sufficient for grammaticality “here the village”. Dami could also be considered as belonging to this step.
4. In languages like Wolof, the process is taken even further, in which the locative adverbial meaning is largely lost, only used adpositionally.
5. Finally, in languages like Jóola Fóõñi, we not only see only adpositional use, but the languages also lose any deictic distinctions for the adpositions.

¹⁸In addition to the forms mentioned in Table 12, deixis is also marked with the presentative-localizers *mungi*, *munga*, *mungu*, ‘be (t)here’.

Creissels in fact projects the same grammaticalization path for Jóola Fóoñi (2020 p. 11). One interesting aspect to note in Jóola Fóoñi is that it appears to have progressed from the stage of optional adpositions in locative apposition constructions to the complete loss of deixis marking in less than a century, perhaps suggestive of the instability of some of the stages in the middle of the grammaticalization path. It would be interesting to investigate diachronic aspects of Flores-Lembata languages (or even Central Malayo-Polynesian) in more detail, to see whether the evidence there would corroborate the idea of instability or not, and whether such structures could be reconstructed. Fricke (2019) and Malcolm Ross (p.c.) both suggest that the origin of this construction ultimately lies in language contact with Timor-Alor-Pantar (TAP) languages; however, there is no evidence that TAP languages have similar structures, so more research would be needed to see how exactly this would have taken place.

It is possible that Begak has also taken a similar grammaticalization path, with one notable exception in that it uses morphology to distinguish between locative adverbs and adpositions derived from locative adverbs. Biafada and Kasa may also show some parallels, but more data is needed on both languages. Laalaa may also show some parallels as well, where the preposition *ga* shows a partial deictic distinction contrasting with proximal *gi*; this distinction appears to be restricted to presentational constructions, however. For further details, see Dieye (2010 p. 176-177).

Lastly, one important area for future investigation for languages which have undergone the locative demonstrative to adposition grammaticalization path would be detailed tests on fronting, extraction, and boundedness. Such tests might reveal whether the demonstratives behave identically or not depending on whether they have a complement, but an analysis of this type is beyond the scope of this article.

A different grammaticalization path is seen in languages like Selaru and Fijian, discussed in Section 8, where the verbs ‘to come’ and ‘to go’ show a clear path grammaticalizing from serial verbs into coverbs/verbal prepositions, and finally into adpositions of either static location (e.g. Fijian), or motion to (e.g. Tetum Dili). This path is discussed in more detail in Lichtenberk (1991). This grammaticalization path appears to be primarily seen in Oceanic languages, although some other more distantly related languages like Tetum and Paulohi seem to show some parallels as well.

The grammaticalization path for Ap Ma was mentioned previously, in which phonology is likely the impetus. This affected Waran as well, which likely adopted the deictic adposition structure through contact influence with Ap Ma. For more information, see Killian & Barlow (2022).

Finally, one remaining grammaticalization path is seen in which adpositional demonstratives derive from verbs of location (‘be here, be there’), as in Thao, a number of Flores-Lembata languages, possibly Nakanai, and to some extent Paulohi, which also shows some evidence of the grammaticalization process discussed in Lichtenberk (1991).

The rarity of the grammaticalization path of verb to deictic adposition is likely twofold. First, deictic verbs denoting location are not particularly common; ongoing work by the author suggests around 40-50 languages out of around 1150 languages in total. The majority of the rest of these languages do not show serial verb constructions similar to Thao, so the path of locative verb in serial verb constructions to adposition is not available.

However, the grammaticalization path of serial verbs into adpositions is widespread in Austronesian, so it is not impossible that other languages might be found which show similar structures to Thao, should they also be seen to have deictic verbs of location.

As for Semelai, the only remaining language discussed here, there is little evidence on where *haʔ*, *hɛʔ*, *tɔʔ*, *cɔʔ* might have originated from, and the fact that they seem so basic, even deriving demonstratives from them, is highly intriguing, worthy of further research. Nicole Kruspe (p.c.) mentions that nothing similar to Semelai has been found in other Aslian languages thus far.

One remaining item which is worth pointing out is that adpositions with deictic distinctions appears to be noticeably more common within Austronesian, found in fairly distantly related languages no less. However, there is no evidence that this would be reconstructible, or that this would be an ancient, inherited feature, although it is likely that such forms might be reconstructible to a more intermediate level at Flores-Lembata (or possibly even Central Malayo-Polynesian). It would be interesting to investigate further what preconditions or catalysts might have allowed for a higher frequency of deictic marking in adpositions.

Abbreviations

1	1st person	INTRS	Intransitive
2	2nd person	IPST	Immediate past
3	3rd person	IRR.EPIS	Irrealis Epistemic Marker
A	Agent	K	K suffix
ABS	Absolutive	LOC	Locative
ACROSS	Across	MED	Medial
AF	Agent Focus	NOM	Nominative
ART	Article	N3	Non third person singular
ASP	Aspect	NEUT	Neutral
AV	Actor Voice	NLZR	Nominalizer
BELOW	Below	NM	Nominal Marker
C	Common Noun	NONFOC	Non-Focus
CL	Class	NP	Near Past Tense
CDM	Core Development Marker	NT	Neutral Topic
CONN	Connector	OBJ	Object
CONT	Continuous Aspect	OBL	Oblique
COP	Copula	PE	Plural Exclusive
CPL	Completive Aspect	PERS	Personal Noun
CT	Control Topic	PFV	Perfective
DC	Deictic Center	PI	Plural Inclusive
DEM	Demonstrative	PL	Plural
DEP	Dependent	PN	Personal Name
DIR	Directional	POSS	Possessive
DIST	Distal	PR	Present Tense
DOWN	Down	PRED	Predicative
DSTP	Distant Past	PROG	Progressive
EM	Emphatic	PROP	Proper Noun
FD	Far Distal	RD	Reduplication
FOC	Focus	REM	Remote
GEN	Genitive	RMVD	Removed
GM	Goal Marker	SG	Singular

HAB	Habitual	SP	Specifier
IMP	Imperative	SPEC	Specific
INDEF	Indefinite	STAT	Stative
INST	Instrumental	TOP	Topic

References

- Aikhenvald, Alexandra. 2018. *Serial verbs*. Oxford University Press.
- Alves, Mark. 2006. *A grammar of Pacoh: a Mon-Khmer language of the central highlands of Vietnam*, vol. 580 (Pacific Linguistics). Canberra: Australian National University.
- Alves, Mark. 2015. Pacoh. In Paul Sidwell & Mathias Jenny (eds.), *The handbook of Austroasiatic languages*, 881–906. Leiden: Brill.
- Anstre, Gilbert. 1966. The verbid: a caveat to 'serial verbs'. *Journal of West African languages* 3(1). 29–32.
- Antonissen, A. 1958. *Kadazan-English and English-Kadazan dictionary*. Canberra: Government Printing Office.
- Bakker, Dik. 2013. Person marking on adpositions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*, Leipzig: Max Planck Institute for Evolutionary Anthropology. <https://wals.info/chapter/48>.
- Benton, Richard A. 1971. *Pangasinan reference grammar* (Pali Language Texts: Micronesia). Honolulu: University of Hawaii Press.
- Blust, Robert. 2003. *Thao dictionary*. Taipei: Academia Sinica, Institute of Ethnology.
- Blust, Robert. 2015. The case-markers of Proto-Austronesian. *Oceanic Linguistics* 54(2). 436–491.
- Bolton, Rosemary Ann. 1990. *A preliminary description of Nuaulu phonology and grammar*. Arlington, TX: University of Texas at Arlington MA thesis.
- Breunese, Merlijn. 2019. *Demonstratives in space and discourse: A synchronic and diachronic analysis*: University of Jena dissertation.
- Butler, William. 1981. Preliminary notes on Banaro grammar. Ms.
- Cappelle, Bert. 2004. The particularity of particles, or why they are not just 'intransitive prepositions'. *Belgian Journal of Linguistics* 18. 29–57.
- Coward, David F. 1990. *An introduction to the grammar of Selaru*. Arlington, TX: University of Texas at Arlington MA thesis.
- Creissels, Denis. 2020. The grammaticalization path deictic spatial adverb > adposition. Presentation at the Workshop on Diachrony, Adpositions, Nuclear and Oblique Arguments (University of Sonora, Hermosillo (Mexico), November 12-13 2020).

- Daniels, Don. 2015. *A reconstruction of Proto-Sogeram: Phonology, lexicon, and morphosyntax*: University of California at Santa Barbara dissertation.
- Diatta, Christian Sina. 1998. *Parlons jola: Langue et culture* (Collection Parlons). Paris: L'Harmattan.
- Diessel, Holger. 1999. *Demonstratives: form, function and grammaticalization* (Oxford Studies in Typology and Linguistic Theory). Amsterdam: Benjamins.
- Dieye, El Hadji. 2010. *Description d'une langue Cangin du Sénégal: Le Laalaa*: Dakar: Université Cheikh Anta Diop dissertation.
- Diouf, Jean-Léopold. 2009. *Grammaire du wolof contemporain*. Paris: L'Harmattan revue et complétée edn.
- Dixon, R.M.W. 2003. Demonstratives: A cross linguistic typology. *Studies in Language* 27(1). 61–112.
- Elliot, George. 1979. Dami grammar essentials. Ms.
- Forschner, T. A. 1994. *Hoturan di Boros Momogun (Rungus): Outline of a Momogun grammar (Rungus dialect)*. Kudat: Self published.
- Fricke, Hanna. 2014. *Topics in the grammar of Hewa: A variety of Sika in Eastern Indonesia*. München: LINCOM.
- Fricke, Hanna. 2019. *Traces of language contact: The Flores-Lembata languages in eastern Indonesia*: Rijksuniversiteit te Leiden dissertation.
- Geraghty, Paul. 1976. Fijian prepositions. *The Journal of the Polynesian Society* 85(4). 507–520.
- Giridhar, P. P. 1994. *Mao Naga grammar*. Mysore: Central Institute of Indian Languages.
- Goudswaard, Nelleke. 2005. *The Begak (Ila'an) language of Sabah*. Utrecht: Vrije Universiteit Amsterdam dissertation.
- Grimes, Charles E. 1991. *The Buru language of eastern Indonesia*: Australian National University dissertation.
- Guérin, Maximilien. 2011. *Le syntagme nominal en wolof: une approche typologique*: Université de Paris III dissertation.
- Hagège, Claude. 2010. *Adpositions*. Oxford: Oxford University Press.
- Hammarström, Harald & Mark Donohue. 2014. Some principles on the use of macro-areas in typological comparison. In Harald Hammarström & Lev Michael (eds.), *Quantitative approaches to areal linguistic typology*, vol. 4 (Language Dynamics and Change Special Issue), 167–187. Leiden: Brill.
- Haspelmath, Martin. 2010. Comparative concepts and descriptive categories in crosslinguistic studies. *Language* 86(3). 663–687.
- Heine, Bernd & Tania Kuteva. 2007. *The genesis of grammar: A reconstruction*. Oxford: Oxford University Press.
- Hemmings, Charlotte. 2016. *The Kelabit language: Austronesian voice and syntactic typology*: University of London dissertation.
- Herce, Borja. 2021. Adpositions. In Eva van Lier (ed.), *Oxford handbook of word classes*, Oxford: Oxford University Press.

- Hull, Geoffrey & Lance Eccles. 2004. *Tetum reference grammar*. Sydney, N.S.W.: Sebastião Aparício da Silva Project 2nd edn.
- Jespersen, Otto. 1924. *The philosophy of grammar*. London: George Allen and Unwin.
- Johnston, Raymond. 1978. Serial verbs and the expression of concepts of location and motive in nakanai. In Stephen A. Wurm & Lois Carrington (eds.), *Second international conference on austronesian linguistics: Proceedings*, vol. 61 (Pacific Linguistics C), 1043–65. Australian National University.
- Johnston, Raymond. 1980. *Nakanai of New Britain: the grammar of an Oceanic language*, vol. 70 (Pacific Linguistics: Series B). Canberra: Research School of Pacific and Asian Studies, Australian National University.
- Killian, Don. 2021. Towards a typology of predicative demonstratives. *Linguistic Typology*.
- Killian, Don & Russell Barlow. 2022. Deictic marking in adpositions in Ap Ma and Waran. *Linguistic Typology at the Crossroads* 2-1. 37–64.
- Kroon, Yosep Bisara. 2016. *A grammar of Solor-Lamaholot: A language of Flores, eastern Indonesia*: University of Adelaide dissertation.
- Kruspe, Nicole D. 1999. *Semelai*. Melbourne: University of Melbourne dissertation.
- Lehmann, Christian. 2002. *Thoughts on grammaticalization*. Erfurt: Seminar für Sprachwissenschaft der Universität 2nd edn.
- Li, Charles N. & Sandra Thompson. 1974. Co-verbs in Mandarin Chinese: Verbs or prepositions? *Journal of Chinese Linguistics* 2(3). 257–278.
- Li, Jinfang & Yongxian Luo. 2015. Bugan. In Paul Sidwell & Mathias Jenny (eds.), *The handbook of Austroasiatic languages*, 1033–1064. Leiden: Brill.
- Libert, Alan. 2013. *Adpositions and other parts of speech*. Bern, Switzerland: Peter Lang.
- Lichtenberk, Frantisek. 1991. Semantic change and heterosemy in grammaticalization. *Language* 67(3). 475–509.
- Meira, Sérgio. 1999. *A grammar of Tiriyo*: Houston: Rice University dissertation.
- Moody, David C. 1988. A brief sketch of Ida'an declarative and interrogative clause types. In Charles Peck (ed.), *Borneo language studies 1: Sabah syntax papers*, vol. 14, 81–99. Dallas: Summer Institute of Linguistics.
- Mosel, Ulrike. 1982. Local deixis in Tolai. In Jürgen Weissenborn & Wolfgang Klein (eds.), *Here and there: cross-linguistic studies on deixis and demonstration*, 111–132. Amsterdam: John Benjamins.
- Mosel, Ulrike. 1984. *Tolai syntax and its historical development*, vol. 92 (Pacific Linguistics: Series B). Canberra: Research School of Pacific and Asian Studies, Australian National University.
- Nagaya, Naonori. 2012. *The Lamaholot language of eastern indonesia*: Houston: Rice University dissertation.

- Nagaya, Naonori. 2017. Demonstrative prepositions in Lamaholot. *NUSA: Linguistic studies of languages in and around Indonesia* 63. 45–61.
- Nishiyama, Kunio & Herman Kelen. 2007. *A grammar of Lamaholot, eastern Indonesia: The morphology and syntax of the Lewoingu dialect*, vol. 467 (Languages of the World/Materials). München: Lincom.
- Opgenort, Jean R. 2005. *A grammar of Jero*, vol. 5/3. Leiden: E. J. Brill.
- Pawley, Andrew. 1973. Some problems in proto-Oceanic grammar. *Oceanic Linguistics* 12. 102–188.
- Pryor, Bonita & Cynthia J. Farr. 1989. Botin deictics: Go and come. *Language and Linguistics in Melanesia* 20. 115–145.
- Pryor, John. 1986. A provisional semantic-structure analysis of Botin hortatory and descriptive discourse. Ms.
- Pryor, John. 1990. Deixis and participant tracking in Botin. *Language and Linguistics in Melanesia* 21. 1–29.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & Jan Svartvik. 1985. *A comprehensive grammar of the English language*. London: Longman.
- Robinson, Laura C. 2005. A sketch grammar of Tindal Dusun. *Working Papers in Linguistics / Department of Linguistics, University of Hawai'i at Mānoa* 36(5). 1–33.
- Ross, Malcolm. 2004. Demonstratives, local nouns and directionals in Oceanic languages: a diachronic perspective. In Gunter Senft (ed.), *Deixis and demonstratives in Oceanic languages*, 175–204. Canberra: Pacific Linguistics.
- Samely, Ursula. 1991. *Kedang (Eastern Indonesia): some aspects of its grammar*, vol. 46 (Forum phoneticum). Hamburg: Helmut Buske.
- Soukka, Maria. 2000. *A descriptive grammar of Noon: a Cangin language of Senegal*, vol. 40. München: Lincom.
- Stresemann, Erwin. 1918. *Die Paulohisprache: ein Beitrag zur Kenntnis der Ambonischen Sprachengruppe*. s'Gravenhage: Nijhoff.
- Torrence, Harold. 2013. *The clause structure of Wolof: Insights into the left periphery*. Amsterdam/Philadelphia: Amsterdam: John Benjamins. <https://benjamins.com/catalog/la.198>.
- Wade, Martha. 1984. *Some stratificational insights concerning Botin (Kambot), a Papuan language*. University of Texas at Arlington MA thesis.
- Wang, Shan-Shan. 2004. *An ergative view of Thao syntax*: University of Hawai'i at Mānoa dissertation.
- Wilson, William André Auquier. 1993. An outline description of Biafada. *Journal of West African Languages* XXIII(2). 59–90.
- Zúñiga, Fernando & Seppo Kittilä. 2019. *Grammatical voice* (Cambridge Textbooks in Linguistics). Cambridge: Cambridge University Press.
- Федюнёва, Г.В. (ed.). 2000. *Өнія коми кыв : морфология*. Сыктывкар: Коми небӱг лэдзанін.