

Deictic marking in adpositions in Ap Ma and Waran

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Abstract

Two neighboring languages of the Sepik region of Papua New Guinea, Ap Ma (Keram) and Waran (Ramu), exhibit an unusual structure in adpositional phrases. In both languages, all postpositions that govern nouns are obligatorily marked with deictic morphemes that indicate the position of the referent of the NP relative to the deictic center. Both languages employ deictic morphemes that index whether a referent is near, medial, or far. In addition to having other crosslinguistically common and expected applications, these morphemes occur as obligatory elements in adpositional phrases. This article examines the details of these unusual deictic-marked adpositional constructions, placing them in a typological context. We conclude that diachronic changes in Ap Ma phonology were likely the historical impetus for these constructions, which may have subsequently spread to Waran through contact.

Keywords: adpositions; postpositions; deixis; demonstratives; Papuan; Keram-Ramu.

1. Introduction

Demonstratives are words that prototypically indicate spatial deictic reference, indicating the location of a referent relative to the deictic center (or “origo”, following Bühler 1934) (cf. Lyons 1977); as in, for example: “I would like to purchase *this* book”.¹ Although they are often stereotypically thought of as comprising pronouns

¹ Demonstrative systems can also include other types of demonstratives, such as those that are deictically neutral as well as those that make reference to geographical features. Although languages that make reference to geographical features are outside the scope of this paper, it is worth mentioning the possibility of having a spatially neutral or unmarked term that contrasts with other terms with a clear anchorage and reference zone (cf. Levinson 2018).

and determiners, demonstratives belonging to several other lexical categories have also been identified in the world's languages. In his typological work, Diessel (1999: 57-58) recognizes four basic types of demonstratives, based on their syntactic position (1).

(1) Basic types of demonstratives

- (i) pronoun: a pronoun being used to replace a noun, e.g., *I like this*.
- (ii) determiner: a determiner used in apposition to a noun, e.g., *I like this book*.
- (iii) identifier: a non-verbal predicator used in non-verbal clauses, e.g., *This is John*.
- (iv) adverb: an adverb that modifies a verb, e.g., *He read the book here*.

Dixon (2003; 2010: 225), on the other hand, recognizes three types of demonstratives: nominal demonstratives (encompassing both Diessel's pronoun and determiner categories), local adverbial demonstratives (corresponding to Diessel's adverb category), and verbal demonstratives, which have a meaning of 'do like this/that'. Demonstrative verbs have also been investigated in more recent works, such as Gruzdeva (2013), Guérin (2015), and Breunese (2019).

Killian (2021) expands considerably on the syntax and semantics of non-verbal predicating demonstratives (corresponding to Diessel's identifier category). 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 (for adverbs; cf. König & Umbach 2018), and definiteness and specificity (for determiners). Some of these categories may end up being shown to behave syntactically more like adjectives than determiners for instance, adding yet another category.

However, one category of demonstratives that has not yet been discussed in the literature, with perhaps the sole exception of a single sentence in Breunese (2019: 197),² is that of adpositional demonstratives. The term *adposition* is used here to refer to "words that combine with noun phrases and that indicate the semantic relationship of that noun phrase to the verb" (Dryer 2007: 81-82). Hagège (2010: 175) acknowledges spatial deixis marking as a possible inflectional category of adpositions; however, he states that this constitutes "deixis agreement", rather than existing as a

² "... 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.)."

category in its own right. Thus, although adpositions commonly possess spatial or temporal meanings, they do not normally include a deictic component.

Indeed, deictic distinctions in adpositions are extremely rare.³ However, they do occur in a small number of Austronesian and Atlantic languages, such as Wolof (Atlantic, Senegal), where the paradigm of locative prepositions *ci* and *ca* indexes either proximal (2) or distal (3) relations.⁴

(2) Wolof (Atlantic; Robert 2006: 158)

ci *néeg* *bi*
in.PROX room the.PROX
'in the room (close to me)'⁵

(3) Wolof (Atlantic; Robert 2006: 158)

ca *néeg* *ba*
in.DIST room the.DIST
'in the room (far away from me)'

Similarly, in Begak (Austronesian, Malaysia), the two prepositions *nong* and *di'* include a deictic component to their meaning. Whereas *nong* refers to locations near the speaker or deictic center (4), *di'* is used for locations removed from the speaker or deictic center (5).

³ By “deictic distinctions” we refer to relative proximity to the origo, rather than default 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 contain a deictic component to its meaning, this has little to do with the deixis of relative proximity.

⁴ Although the Wolof examples may appear to be exhibiting agreement between the preposition and the deictic article, such an analysis would not be correct (Stéphane Robert, p.c.). It is, for example, possible for the deictic prepositions *ci* and *ca* to occur with proper nouns, which do not take articles.

⁵ We have maintained the original orthographies of the various sources in our examples, including the authors' use of hyphens, equal signs, and spaces. In a few instances, however, where morpheme boundaries were ignored in the original, we have added hyphens. We do not, however, wish to argue for the syntactic status of any morphs (i.e., whether they be affixes, clitics, or words). Also, although we have tried to be faithful in reproducing these orthographies, we have made some changes to the interlineal glossing, primarily to make them conform to the abbreviations of the Leipzig Glossing Rules, but occasionally to reflect a difference in analysis.

(4) Begak (Austronesian; Goudswaard 2005: 246)

kəmmi *gərə-i-dagang* *kaset* *di'* *Indonesia*
 1PL.EXCL.NOM AV.DSTP-COMPL-buy cassette PREP.DIST Indonesia
 'We bought cassettes in Indonesia.'

(5) Begak (Austronesian; Goudswaard 2005: 85)

-u-rənna' *kat* *nupi* *key* *nong* *monay*
 -DEP-descend CDM dream FOC PREP.PROX young.man
 'A dream came down to Young Man.'

A far more elaborate and unusual construction occurs in two neighboring and distantly related Papuan languages of Papua New Guinea. In Ap Ma (also known as Kambot or Botin, Keram family) and Waran (also known as Banaro, Ramu family), all adpositions governing nouns obligatorily mark spatial deixis (proximal, distal, or medial).

Although spoken in close proximity, the two languages are only distantly related. Figure 1 provides a map of the region where both languages are spoken. Figure 2 provides a tentative subgrouping of the Keram-Ramu family, to which both languages belong, based largely on the work of John Z'graggen (1971: 73-92) and Timothy Usher (p.c.) (cf. Barlow 2020: 14-17).

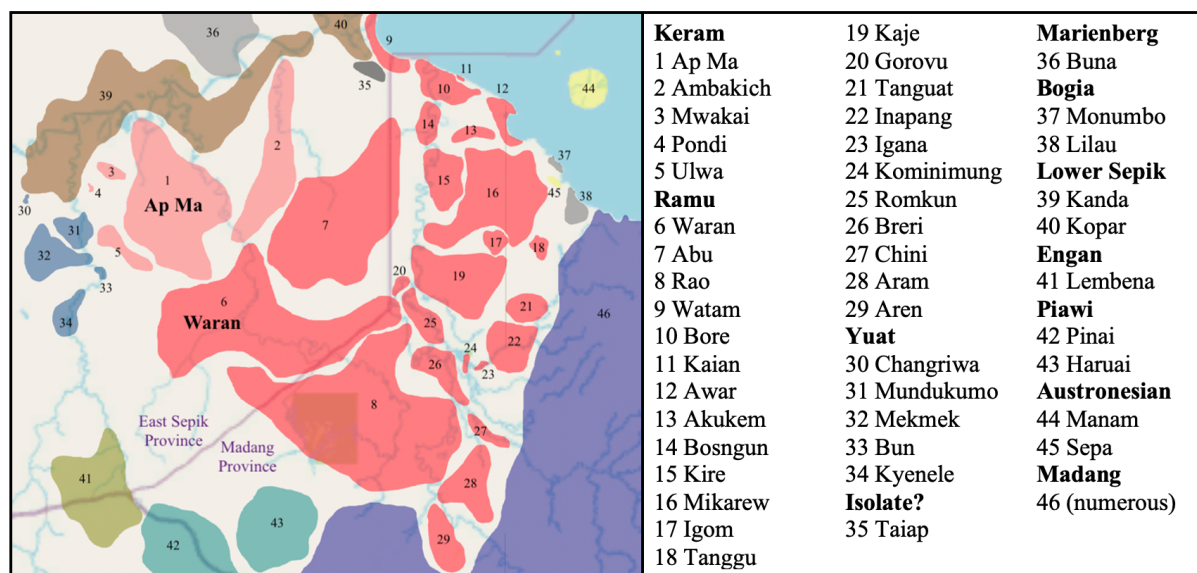


Figure 1: Map of northeastern New Guinea, depicting where Ap Ma, Waran, and some other neighboring languages are spoken.

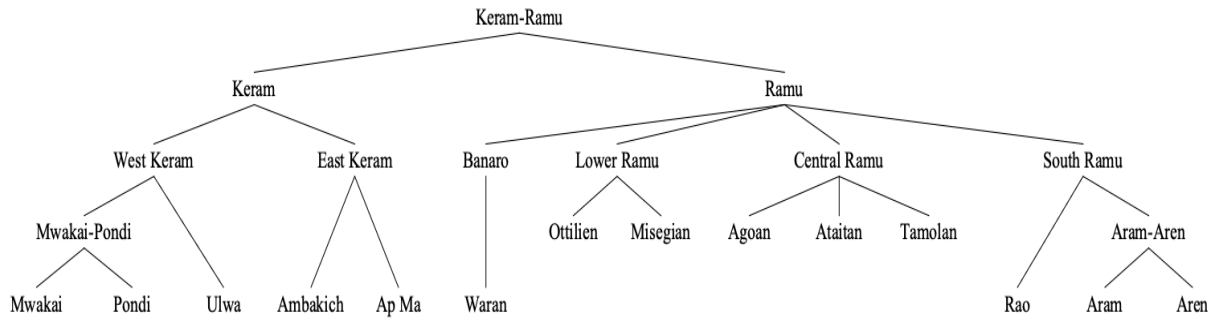


Figure 2: The Keram-Ramu family.⁶

As in Wolof and Begak, adpositions in Ap Ma and Waran not only relate the nominal argument to the clause but also carry deictic information, relating the entire adpositional phrase to the speaker or deictic center. Unlike in Wolof and Begak, the deictic element in such constructions in Ap Ma and Waran is a morphologically distinct (although bound) component, as illustrated for Ap Ma in (6).

(6) Ap Ma (Keram; Barlow, unpublished field notes 2018)

ni-ŋga nindan ape nda-nin ta-p
 1SG-PROX yesterday father DIST-with walk-PFV
 ‘Yesterday I walked around with father.’⁷

The phrase *ape ndanin* not only relates the noun phrase ‘father’ to the clause as a whole, but also indicates (by means of the morpheme *nda* ‘DIST’) that the object of the postposition (‘father’) is or was distant from the current location of the speaker, either because father is not nearby at the time of the speech event, or because the event of walking itself occurred at a distance from the speaker’s current location. In other words, the adposition conveys deictic information on the position of the referent of the NP relative to the speaker or deictic center.

⁶ Otilien consists of Watam, Bore, Kaian, Awar, and Bosngun. Misegian consists of Akukem, Kire, and Mikarew. Agoan consists of Abu and Gorovu. Ataitan consists of Igom, Tanggu, Kaje, and Tanguat. Tamolan consists of Romkun, Breri, Kominimung, Igana, Inapang, and Chini.

⁷ The grapheme <i> is used in the transcriptions by Barlow (2021) and Pryor (1986, 1990) to represent the high central unrounded vowel in Ap Ma, which has phonemic status in the language (Barlow 2021: 36). Wade’s (1982, 1983a, 1983b, 1984) transcriptions, however, do not use this grapheme. What is written elsewhere as <i> corresponds to other vowels in her transcriptions.

Such constructions – in Ap Ma at least – are only possible if the argument governed by the adposition is nominal; if the argument is pronominal, then the argument occurs in the same position that the deictic marker otherwise would occupy, and no deictic reference is indicated (7).

(7) Ap Ma (Keram; Barlow, unpublished field notes 2018)

ape ndi ni-nin ta-p
 father FOC 1SG-with walk-PFV
 ‘Father walked around with me.’

In the following sections we aim to explain in greater detail the phenomenon of adpositional spatial deixis in Ap Ma (Section 2) and in Waran (Section 3), before proposing a diachronic explanation for this unusual feature (Section 4), thereby placing it in a broader typological context (Section 5).

2. Ap Ma

There are three (singular) forms for Ap Ma deictics, which ostensibly signal proximal (*gi-*), medial (*mi-*),⁸ or distal (*dī-*) distances. Deictics appear to have a very high functional load in Ap Ma: not only do they mark physical distance, but they are also used to track referents in discourse, as well as to indicate the attitude of the speaker towards the referent (Pryor 1990). Although such functions of deictics are not uncommon among the world’s languages (cf. Himmelmann 1996), the degree to which Ap Ma recruits deictics for such purposes is remarkable. Indeed, Pryor & Farr (1989: 116) acknowledge deixis as “a major part” of the language. According to Pryor (1990: 22), “demonstratives serve as the major cohesive device in the language.”

In example (8), the proximal form is used with the postposition *-ak* (glossed by Wade as ‘ORG’, i.e., ‘origin’). However, the story was not actually told in or near the garden mentioned in the story. Rather, this use of a proximal form instantiates a deictic shift and cognitive framing, the proximal form being used to set the scene and

⁸ Levinson (2018: 25) writes that “... there are grounds for suspicion that most if not all terms that might be described as ‘medial’ in descriptive grammars are in fact neutral or unmarked distal, and pick up their medial usage through privative opposition with proximal or far-distal terms.” It is possible that this scenario would apply to Ap Ma as well, although we do not know for certain.

the deictic center for the story. The deictic center has been transposed to the garden, and future deictic references in the story occur accordingly.

(8) Ap Ma (Keram; Wade 1982: 9)

wuluk ma-n sak g-ak ma-n nage l-ul-ul-me
 man MED-OBL **garden** PROX-from MED-OBL banana 3PL-cut-IPFV-EPIS
 ‘(She) cut the man’s garden’s bananas.’⁹

Deictics in Ap Ma have a somewhat unusual distribution, attaching to verbs (9) and to postpositions (10), as well as to various bound grammatical morphemes, including case markers, emphatic markers, and topic markers (11), amongst other possible morphemes whose functions are not yet understood. Additionally, all deictics may also fuse with personal pronouns or with other deictics. Such deictic-deictic combinations create meaningful words that serve several functions (Wade 1982: 25-34), such as that of a copula (12) (see also (41) for an example of the same combination of deictics being used as a focus marker).

(9) Ap Ma (Keram; Wade 1984: 145)

nyi-ga no pa-di-m-a-me
 1SG-PROX own house-DIST-go-IRR-EPIS
 ‘I will certainly go to my own house.’

(10) Ap Ma (Keram; Pryor 1986: 32)

nyimi-ba Astilelia d-okol wis
 some-NT Australia DIST-through come.PFV
 ‘Some come from Australia.’

(11) Ap Ma (Keram; Wade 1982: 23)

73 *da-yen o Mis Rop ba-lup nyi-tin-a*
 73 DIST-TOP INJ Miss Rop turn-PFV 1SG-get-IRR
 ‘In 1973 Miss Rop was again coming to get me ...’

⁹ The gloss ‘EPIS’ is used for the Ap Ma forms *ma* and *me* (both always occurring clause-finally), since – although their functions are not fully understood – they seem to have epistemic force. The former occurs in perfective contexts, whereas the latter occurs elsewhere (i.e., imperfective and irrealis contexts). They may derive from suffixed versions of the medial deictic *mi-*.

(12) Ap Ma (Keram; Wade 1982: 16)

neg *da-n* *dinat* *da-ma*
 woman DIST-OBL heavy DIST-MED
 ‘It is that woman’s problem.’

Deictics do not appear in their bare forms, nor do they fuse directly with nouns, unless the fusion additionally includes verbs, postpositions, topic or case markers, or other deictics. More crosslinguistically familiar deictic categories, such as demonstrative pronouns and demonstrative adverbs, are extremely rare (if not totally absent) in Ap Ma. Table 1 provides a list of some Ap Ma postpositions with their fused deictic markers.

Gloss	Root	Proximal	Medial	Distal
		g(i)-	m(i)-	d(i)-
‘with’ (comitative)	-nin	ganin	manin	danin
‘with’ (inanimate comitative)	-pa	gipa	mipa	dipa
‘with’ (instrumental)	-n	gan	man	dan
‘for’ (beneficiary)	-ayak	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

Table 1: Ap Ma postpositions (adapted from Pryor 1990: 5).

Note that, in addition to this paradigm of (singular) deictic markers, there are two plural deictic forms: *w(i)*- ‘PL.PROX’ and *l(i)*- ‘PL.DIST’. Also, what is treated here as “medial” appears to be ambiguous between marking a third person referent and marking spatial deixis. This colexification of 3SG pronominal and MED deictic forms is common among languages of the Keram-Ramu family. Finally, based on comparative data from other Keram-Ramu languages, the form *-n*, presented above as a postposition (‘with’), could alternatively be considered an “oblique marker”; however,

it appears to have nearly (if not exactly) the same morphosyntactic distribution as (other) postpositions in Ap Ma. This morpheme is discussed further in Section 4.2.

The origin of this rather curious phenomenon appears to lie in phonology. Postpositions in Ap Ma belong to a closed set of morphs (along with deictic enclitics) that must form “tightly-knit” noun phrases (Wade 1983b). Another way of viewing these forms is to consider them to be enclitics, which – quite remarkably – require proclitics as their phonological hosts. Only when these enclitics join with proclitics can they make well-formed words. The group of proclitics that can function in this way consists of personal pronouns (13, 14) and deictics (14, 15).

(13) Ap Ma (Keram; Wade 1984: 302)

ny-e wu-nin y-e-w-o
1SG-? 2SG-with ground-PRF-1.2-STAT
'I am here with you.'

(14) Ap Ma (Keram; Wade 1984: 55)

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.'

(15) Ap Ma (Keram; Wade 1984: 293)

mi-d-aak lol da-ma
water-DIST-from man DIST-MED
'He was a man from the water.'

Note that the form *mi* ‘water’ in (15) belongs to a class of “semi-free nouns”, which are discussed further in Section 4.3.

There is thus a phonologically based functional motivation for postpositions to index spatial deixis. Since they belong to a class of enclitics that require proclitics as hosts, they can only permissibly follow pronouns or deictics. When the object of the postposition is a pronoun like *wu-* ‘you’ (13), then no deictic is “needed”. However, it would not be permitted for a postposition immediately to follow a noun, since nouns do not participate in this peculiar proclitic-enclitic “co-hosting” relationship that postpositions require. By fusing with a deictic, the postposition becomes capable of taking any NP as its object. (Based on its usage in texts, it is assumed here that, when

no particular deictic distinction is intended, a speaker has recourse to use the medial form in a somewhat semantically bleached fashion as a generic referent.)

Table 2 summarizes the possible combinations of postpositions and other parts of speech in Ap Ma.

Object of the postposition	Deictic marking?	Postpositional phrase
(Independent) noun	Obligatory	NOUN DEIC = PP
Semi-free noun	Obligatory	SF.NOUN = DEIC = PP
Pronoun	Prohibited	PRON = PP

Table 2: Postpositions and deictic marking in Ap Ma.

We should note that, although we refer to “marking” here and elsewhere in this article, we do not wish to make any theoretical claims about the locus of marking in these constructions in Ap Ma (or in Waran). That is, we are not concerned with whether spatial deixis is an inflectional category of adpositions, or whether deictic forms are being inflected for case-like categories (if these postpositions may be considered as such). The simple facts of this fusion of deictic forms and adpositions are fascinating in their own right and, we believe, deserving of closer examination.

3. Waran

Less is known about Waran compared to Ap Ma, and nearly all information concerning the language originates from Butler’s (1981a) sketch grammar. However, we may begin by noting that there are three deictics in the language, which signal proximal (*ga-*), medial (*na-*), or distal (*da-*) distances. The semantics of this contrast may be somewhat different from the three-way contrast found in Ap Ma, since what is treated here as a “medial” category in Waran is described by Butler (1981a: 38) as indicating referents that are near the hearer (i.e., addressee-proximal). Moreover, unlike in Ap Ma, deictics in Waran may appear in their bare forms (i.e., free) when they are used to indicate a location, in crosslinguistically expected fashion for demonstrative adverbs (16, 17).

(16) Waran (Ramu; Butler 1981a: 38)

gu ga pe-Ø
 1SG PROX exist-N3SG
 ‘I live here.’

(17) Waran (Ramu; Butler 1981a: 16)

a-na kai erake da se-t
1PL.EXCL-POSS banana garden DIST exist-3SG
'Our banana garden is over there.'

Deictics suffixed with the “demonstrative marker” *-ŋ* <ng> (Butler 1981a: 39) or with the 3SG pronoun *ma* both may function as modifiers of nouns (18, 19, 20) as well as pronominally (21). It is uncertain what the difference in usage between the two suffixes in such contexts is. It may be noted that the Waran 3SG pronoun *ma* is cognate with the Ap Ma medial deictic form *mi-*, although synchronically Waran uses *na-* as its medial form.

(18) Waran (Ramu; Butler 1981a: 15)

sin da-dik u erake ga-ng tigo-pa-magin
long.ago DIST-INS 2SG garden PROX-DEM cut-COMPL-FP
'Long ago you cleared this garden.'

(19) Waran (Ramu; Butler 1981a: 15)

maraksong ga-ma enabu ra-se-t
child PROX-3SG big become-PRS-3SG
'This child is becoming big (i.e., is growing).'

(20) Waran (Ramu; Butler 1981a: 37)

kabop gu-ng kañe-ñe wa eñabu ga-ng kañe-ñe
little PROX-DEM get-2.FUT or big PROX-DEM get-2.FUT
'Will you take this little (one) or this big (one)?'

(21) Waran (Ramu; Butler 1981a: 20)

ga-ma kabop-bu
PROX-3SG little-CMPR
'This one is smaller.'

Additionally, deictics may occur with the “specifier” suffix *-(a)p* (22), described as functioning “to make specific the item to which it is attached” (Butler 1981a: 44).

(22) Waran (Ramu; Butler 1981a: 10)

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 [village].’

Finally, deictics attach to all postpositions, in much the same way as in Ap Ma. Paradigms for adpositions in Waran are presented in Table 3.

Gloss	Root	Proximal	Medial	Distal
		ga-	na-	da-
‘with’ (instrumental)	-dik	gadik	nadik	dadik
‘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

Table 3: Waran postpositions (adapted from Butler 1981a: 49).

The meaning of *-kin* in Table 3 is uncertain. Additionally, Butler (1981a: 40) notes that he has not observed medial deictic forms occurring with “location relators” (i.e., ‘at’, ‘to’, ‘from’), but we do not know whether such constructions would be ill-formed. It is also uncertain whether *-gin* ‘from’ (animate source) can combine with proximal or medial forms in addition to distal forms.

The following examples (23, 24, 25) illustrate the contrast among the three deictic markers in Waran in combination with the postposition *dik* ‘with’. Note that deictic reference is not made with a pronoun but rather with the postposition.

(23) Waran (Ramu; Butler 1981a: 40)

kamin ga-dik gora na-ng ra-pa-se-Ø
 bow PROX-with bird MED-DEM shoot-COMPL-PRS-N3SG
 ‘With this bow I shot a bird.’ (The bow is close to the speaker.)

(24) Waran (Ramu; Butler 1981a: 40)

kamin na-dik gora na-ng ra-pa-se-Ø
 bow MED-with bird MED-DEM shoot-COMPL-PRS-N3SG
 ‘With that bow I shot a bird.’ (The bow is close to the hearer.)

(25) Waran (Ramu; Butler 1981a: 40)

kamin da-dik gora na-ng ra-pa-se-Ø
bow DIST-with bird MED-DEM shoot-COMPL-PRS-N3SG

‘With that bow I shot a bird.’ (The bow is not close to the speaker or the hearer.)

Other postpositions behave similarly, immediately following deictic markers (as opposed to the nouns that they govern), as illustrated in the following examples (26, 27, 28).

(26) Waran (Ramu; Butler 1981a: 46)

kas pep nginang enebu Angoram da-wa kaje-Ø
dog black two big Angoram DIST-at get.PRS-N3SG

‘I bought two big black dogs at Angoram.’

(27) Waran (Ramu; Butler 1981a: 32)

gu krrowom da-ka paye-Ø
1SG Klorowom DIST-from come-N3SG

‘I came from Klorowom.’

(28) Waran (Ramu; Butler 1981a: 40)

ñaka gu krung ga-na yi-riyu-ñ
yesterday 1SG village PROX-to come-PST-N3

‘Yesterday I came to the village.’

In unmarked situations where the location relationship is unimportant, the distal deictic form *da-* is used (Butler 1981a: 39). Notably, Waran differs in this regard from Ap Ma, which instead employs the medial deictic as the unmarked (or neutral) form in such circumstances. It is also worth noting here that, although the Waran proximal (*ga-*) and distal (*da-*) forms are both cognate with their Ap Ma equivalents (proximal *g(i)-* and distal *d(i)-*), the Waran medial form (*na-*) is innovative. In Ap Ma – as in many Keram-Ramu languages – the medial form (*m(i)-*) is clearly related to the 3SG pronominal form (*mi- ~ ma-*). In Waran, however, the medial form (*na-*) is, as Butler (1981a: 38) notes, very similar to the 2SG pronominal form (*na*) in that language; this accords with the form’s addressee-proximal meaning.

No information is given on whether anything comparable to Ap Ma's semi-free nouns exists in Waran, nor are there any examples showing how postpositions interact with personal pronouns.

Waran also employs deictics with a temporal postposition *-jin*, which Butler (1981a: 41) describes as a “temporal relator”. When following the proximal marker, this form is used to refer to an immediate time (‘right now’) (29); following the addressee-proximal marker, it refers to a time further off but still close (30); and following the distal marker, it refers to a time that is far off, at least a day in the future or past (31). Note that constructions with the temporal relator do not always appear to have an argument, such as in examples (29) and (30).

(29) Waran (Ramu; Butler 1981a: 41)

ga-jin *krung* *da-na* *me-ñe*
 PROX-TR village DIST-to go-2.FUT
 ‘Are you going to the village right now?’

(30) Waran (Ramu; Butler 1981a: 41)

na-jin *gu* *ma-bi-ta-mas*
 MED-TR 1SG 3SG-see?-1.FUT
 ‘I’ll look at it in a minute.’

(31) Waran (Ramu; Butler 1981a: 41)

waran *imanong* *da-jin* *me-mas*
 no tomorrow DIST-TR go-1.FUT
 ‘No, we’ll go tomorrow.’

There is fairly clear evidence that deictics and adpositions interact in Waran in much the same way that they do in Ap Ma. However, unlike Ap Ma, which seems to contain rather nuanced phonological requirements for various parts of speech, there is no clear language-internal motivation for the development of such adpositional deictic marking in Waran. However, the two language areas are in close proximity and show a historical relationship, so one plausible explanation would involve contact-induced change. Therefore, we suggest that the Waran deictic adposition system was at least partially influenced by Ap Ma. Section 4.4 addresses this in greater detail.

4. A possible diachronic explanation

The origin of this construction likely stems from some particular aspects of Ap Ma phonology. Postpositions in Ap Ma belong to a closed set of enclitic morphs that require proclitics (such as deictics) as phonological hosts in order to form well-formed words. Before detailing the peculiar behavior of these clitics in Ap Ma in Section 4.3, we discuss two potentially relevant grammatical features found in the Keram-Ramu family that may have encouraged the development of deictic-marked adpositions in both Ap Ma and Waran. These are a semantically versatile class of articles (Section 4.1) and an oblique-marking morpheme that commonly follows deictic forms (Section 4.2). Finally, in Section 4.4, we consider the possibility that Waran was influenced by Ap Ma in the development of its similar postpositional constructions.

4.1. “Articles”

Throughout the Keram-Ramu family there are examples of NP-final determiners that are historically related to medial deictic demonstratives and/or third person personal pronouns. These determiners, which will be referred to here broadly as *articles*, seem to vary widely in their particular functions, both across and even within individual languages. They may indicate definiteness or specificity, but also may serve as topic markers or focus markers, and may index number and (to a more limited extent) case. They also vary in the degree to which they are used in particular Keram-Ramu languages: some members have no attestations of their use, some make occasional use of them, and some employ them rather frequently (Ap Ma sits at one extreme of this spectrum, using either these articles or deictic determiners for essentially every NP). In the languages that exhibit these articles, they are generally in complementary distribution with other determiners, namely proximal (Proto-Keram-Ramu *ŋga) and distal (Proto-Keram-Ramu *anda) deictic demonstratives and (if present) an indefinite marker. They may follow either common or proper nouns, but they do not cooccur with personal pronouns.

Since these frequently occurring articles may have paved the way for the proliferation of Ap Ma deictic forms (Section 4.3), we take a moment here to describe their behavior in some other languages belonging to the Keram-Ramu family.

These articles have been described, variously, as “subject markers” (and “object markers”) in Ulwa (Barlow 2018: 166-195, 2019b: 4-7) and in Pondi (Barlow 2020:

87), as “echo pronouns” in Waran (Butler 1981a: 51-52), and as pronouns in “appositional noun phrases” in Rao (Christensen 1977: 23-24).

The following examples illustrate various uses of these articles. In Pondi they may index referent number (32, 33, 34). In Ulwa they may disambiguate grammatical relations (35, 36). In languages with flexible constituent order, such as Rao, they may provide essential case information (37). In Ambakich (as in Ap Ma), they have also developed predicative functions (cf. Li & Thompson 1977; Diessel 1999: 143-148), occurring in non-verbal clauses (38, 39).

(32) Pondi (Keram; Barlow 2020: 110)

kula-m mĩ
 boy-NPL 3SG.SUBJ
 ‘the boy’¹⁰

(33) Pondi (Keram; Barlow 2020: 111)

kula-m min
 boy-NPL 3DU
 ‘the (two) boys’

(34) Pondi (Keram; Barlow 2020: 111)

kula-wi ndin
 boy-PL 3PL.SUBJ
 ‘the (more than two) boys’

(35) Ulwa (Keram; Barlow 2018: 170)

inom manji ay ma = ama-p
 mother 3SG.POSS sago 3SG.OBL = eat-PFV
 (a) ‘Mother ate her sago.’
 (b) ‘(Someone) ate mother’s sago.’

(36) Ulwa (Keram; Barlow 2018: 170)

inom mĩ manji ay ma = ama-p
 mother 3SG.SUBJ 3SG.POSS sago 3SG.OBL = eat-PFV
 (a) ‘Mother ate her sago.’
 *(b) ‘(Someone) ate mother’s sago.’

¹⁰ The grapheme <ĩ> in the Pondi and Ulwa data represents /i/.

(37) Rao (Ramu; Christensen 1978: 32)

frendi *me* *ma* *ole-li*
man 3PL.SUBJ 3SG.OBL drag-COND
'If the men dragged it ...'

(38) Ambakich (Keram; Barlow, unpublished field notes 2018)

Lucy *anetfo* *man*
[name] woman NPL.MED
'Lucy is a woman.'

(39) Ambakich (Keram; Barlow, unpublished field notes 2018)

ani *erer* *arin*
1PL dog PL.MED
'We have dogs.'

Although, as shown above, these Keram-Ramu articles can serve grammatical functions, their overall use seems largely determined by pragmatic factors – in particular, topic marking. Diessel & Breunese (2020: 331) mention several Papuan languages in which topic markers have developed historically from demonstratives.

The presence of articles in a Papuan family deserves comment. Foley (2000: 383) notes that articles are uncommon in Papuan languages, and he (Foley 2000: 393) even attributes the loss of articles in some Austronesian languages to contact with neighboring Papuan languages. It is not inconceivable that contact has had the opposite effect in the case of the Papuan Keram-Ramu family – that is, that the evolution of the Keram-Ramu articles was influenced by contact with nearby (unrelated) Austronesian languages (specifically, Oceanic languages of the Schouten Chain; see Ross 1988: 122-132). There are several well-known examples of metatypy between Papuan and Oceanic languages in this region of New Guinea (cf. Ross 1996). It is even possible that the Oceanic influence here was not only structural but also formal: the nearby Oceanic language Manam, for example, has a “specifier” suffix *-ma*, which, among other things, follows NPs to “identify an object or a person as being the same as the one that has been spoken of before” (Lichtenberk 1983: 207-208, 364). Similarly, Kairiru (closely related to Manam) has a postnominal topic marker *mai*, which may be used either anaphorically or cataphorically (Wivell 1981:

187-190). Juillerat (2000: 50) even mentions Waran foundation legends of their ancestors having originally come by canoe from Manam island.

Regardless of the origin of these articles, their versatility and frequency in Keram-Ramu languages such as Ap Ma may have encouraged the proliferation of deictic forms in that language, due to the formal and semantic similarities between the two types of morphs.

4.2. *The oblique marker *-n*

Another morphosyntactic feature that may have encouraged the development of the Ap Ma and Waran systems of deictic marking is a postposed oblique marker that occurs in many languages of the family (Proto-Keram-Ramu *-n). This oblique marker, which commonly immediately follows deictic forms, may have served as a model for semantically similar postpositions to require immediately preceding deictic markers.

In some Keram-Ramu languages, this marker may attach to any non-subject NP (including direct objects and objects of postpositions), whereas in other languages it is restricted to non-core arguments, especially non-core arguments that do not contain postpositions. Indeed, the oblique marker *-n, which often indicates instrumental, genitive, or beneficiary roles, behaves semantically very much like a postposition; however, it is considered separately here, since – at least in some languages – it patterns differently from postpositions morphosyntactically. For example, in Pondi, the oblique marker =n is restricted to determiners, whereas postpositions can follow any nominal element in that language. Examples of this oblique marker are given below for Pondi (40), Ap Ma (41), Ulwa (42), Waran (43), Akukem (44), Mikarew (45), and Kire (46).

(40) Pondi (Keram; Barlow 2020: 129)

<i>tati</i>	<i>sanglama</i>	<i>ma = n</i>	<i>kondiyam</i>	<i>oli-i</i>
papa	axe	3SG.OBL = OBL	palm.sp	cut-IPFV

‘Papa cuts a palm with an axe.’

(41) Ap Ma (Keram; Barlow, unpublished field notes 2018)

<i>ape</i>	<i>da-ma</i>	<i>ngai</i>	<i>nda-n</i>	<i>su-ndi-e-p</i>	<i>ma</i>
father	DIST-MED	axe	DIST-OBL	pig-DIST-hit-PFV	EPIS

‘Father killed the pig with an axe.’

(42) Ulwa (Keram; Barlow 2019a: 1031)

nungol = ni ama-p-e lam
child = OBL eat-PFV-DEP meat
'The meat was eaten by the child.'

(43) Waran (Ramu; Butler 1981a: 41)

waran gu u-na kas a-i-Ø-rang
no 1SG 2SG-POSS dog NEG-hit.PRS-N3SG-NEG
'No, I didn't hit your dog.'

(44) Akukem (Ramu; Daniels 2010: 121)

a gua utuav-in
3SG go path-OBL
'He goes along the path.'

(45) Mikarew (Ramu; Capell 1951: 140)

kø 'pokon uji'pamu-ni i'tji
1SG yesterday village-LOC was
'I was in the village yesterday.'

(46) Kire (Ramu; Stanhope 1972: 60)

ana Kire-ttə-n iki
3SG Giri-upper-LOC be.at
'He is at [Upper] Giri [village].'

The preceding examples illustrate the broad use of this postposition-like oblique marker in the Keram-Ramu family. In some languages of the family, especially those in and around the Keram branch to the west, it seems to have developed a "preference" for pronominal or deictic (as opposed to nominal) hosts (this may have especially been the case in those languages that frequently employ postnominal articles). In Pondi, there developed an outright prohibition against *-n immediately following nominal arguments. Since this Keram-Ramu morpheme is semantically very much like a postposition, it is reasonable to imagine that it provided a model for all postpositions in Ap Ma to disfavor nominal hosts.

4.3. The proliferation of Ap Ma deictics

Although the presence in Keram-Ramu both of topic-marking articles and of a postposed oblique marker may have played a role in the genesis of the Ap Ma and Waran deictic systems, these facts alone certainly do not suffice to explain the extreme degree to which deictics pervade Ap Ma grammar. Part of the solution may lie in diachronic phonology – namely, the fact that almost every multisyllabic Ap Ma noun lost its initial syllable. Since many roots were originally disyllabic, this resulted in a great many monosyllabic nouns, including numerous homophones. For example, earlier forms like *mbapa ‘wing’ and *kapa ‘house’ both ended up as *pa* in Ap Ma. Following this great shedding of initial syllables, there seems to have developed a strong aversion to ending prosodic units with (unbound) vowel-final monosyllabic words. Notably, when giving citation forms of such words (e.g., *pa* ‘house’), speakers almost invariably provide bound versions thereof (commonly by adding the focus marker *ndima* – thus: [*pandima*]).¹¹

Wade (1983b: 3-4) refers to words such as *pa* ‘house’ in Ap Ma as “semi-free nouns”, a class of vowel-final monosyllabic words that are “grammatically free” but are “phonologically bound to the following word or suffix and can never occur in isolation.” The set of semi-free nouns is closed but includes a great many high-frequency concepts, such as ‘house’, ‘village’, ‘jungle’, ‘sky’, ‘spear’, ‘water’, ‘fire’, ‘talk’, ‘name’, ‘dog’, and ‘pig’.

Semi-free nouns can potentially attach to a variety of hosts, so long as the host is a phonological word, such as a verb (47) or an adjective (48). Also, a semi-free noun may immediately precede a deictic, provided the deictic is itself a proclitic attaching to a following form (49), which may itself be an enclitic (50). This suggests that proclitic-enclitic pairings can themselves constitute phonological words.

(47) Ap Ma (Keram; Wade 1984: 303)

me-t *pi-k-ap*

MED-take **fire-put**-PFV

‘(He) caused it to stay on the fire.’

¹¹ Even based on very limited data, Laycock & Z’graggen (1975: 759) make a similar observation: “[Pronouns] take a range of suffixes ... Nouns also show similar suffixes, including a prevalent *-dama* which occurs on all monosyllabic nouns in isolated, final and predicative positions, but which may be omitted elsewhere.”

(48) Ap Ma (Keram; Wade 1984: 295)

li-nyaam *da-ma*
mosquito.net-big DIST-MED
'It is a big mosquito net.'

(49) Ap Ma (Keram; Wade 1984: 54)

l-e *alak* *no* *pa-di-m-a*
3PL-? also own **house-DIST-go-IRR**
'... they also will go to their own house.'

(50) Ap Ma (Keram; Wade 1984: 239)

su-du-ba *w-odu-p*
pig-DIST-NT 2SG-see-PFV
'... the pig saw you ...'

Thus, it seems as though rules of prosody have strongly influenced the proliferation of postnominal deictic markers in Ap Ma, since they provide a semantically weak means of addressing a prosodic problem. Since a postposition is not a phonological word in Ap Ma, it cannot by itself serve as a host for a semi-free noun. However, by adding a deictic proclitic and thereby creating a proclitic-enclitic pairing, a speaker may permissibly use a semi-free noun in an adpositional phrase. Considering the great number of high-frequency items constituting this class of semi-free nouns, it is not unlikely that the [(semi-free) noun = deictic = postposition] structure was generalized to encompass all nouns, including those that are phonologically free.

4.4. Diffusion to Waran?

While this historical sound change and these (unusual) prosodic requirements may help to explain the situation in Ap Ma, they do not necessarily account for the similar (albeit somewhat less extreme) situation in Waran. Given the proximity of the two language areas, as well as their longstanding relationship, however, we consider it plausible that the Waran deictic system was influenced at least in part by that of Ap Ma.

Several Waran villages lie along the well-traversed Keram River, just upstream (southeast) from Ap Ma villages lying along the same river. Today, the closest Ap Ma

and Waran settlements on the Keram are within 10 kilometers of each other: they are Bopten (Ap Ma) and Yar (Waran). Almost exactly equidistant between the two is Yaut, one of the seven villages where Ambakich (Keram family) is spoken. However, the Ambakich language area mainly lies farther to the east, along the Porapora River. The village of Yaut was only built in the middle of the 20th century by the transposed Ambakich-speaking population of the former Angang village. Thus, traditionally, the Ap Ma and Waran people occupied contiguous stretches of land along the important conduit that is the Keram River. Furthermore, to the west of the Keram River, in the “Grass” area, sit several Ap Ma and Waran villages in considerable proximity, perhaps the closest two of which are Kekten (Ap Ma) and Pushyten (Waran), positioned some three kilometers apart from each other, along the same bayou. Figure 3 presents a map of these villages.

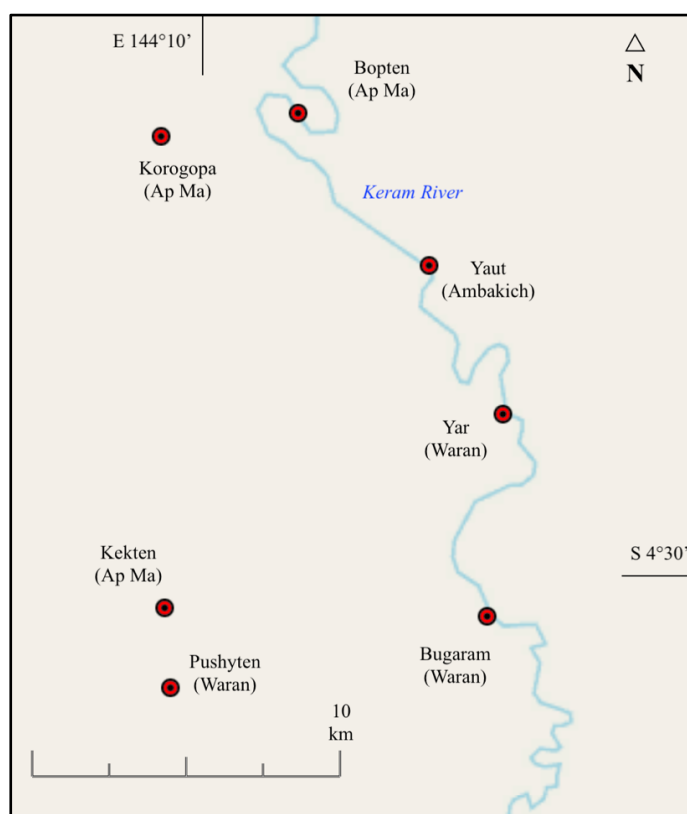


Figure 3: Neighboring Ap Ma and Waran villages.

Thurnwald (1916: 254) also notes some shared cultural traits of this region, including the use of bow and arrow (as opposed to dart) and pottery making, both of which he says are unknown in the Lower Sepik area. Thurnwald (1916: 281-282) also states that Waran kinship and marriage customs (the subject of his work) are shared by the

Ap Ma (“Kambót”) people. Finally, linguistic contact is evident from the presence of lexical loans, occurring apparently bidirectionally between the two languages. Some likely borrowings from Waran into Ap Ma are given in Table 4, and some likely borrowings from Ap Ma into Waran are given in Table 5.

Gloss	Waran	>	Ap Ma
‘woman’	mijnak	>	neŋ
‘basket’	uman	>	wumin
‘spirit sp.’	kojim	>	kojim
‘spirit sp.’	mirom	>	molombi

Table 4: Likely loans from Waran into Ap Ma.¹²

Gloss	Ap Ma	>	Waran
‘arrow’	peu	>	peʌp
‘paddle’	napuŋ	>	nap
‘betel nut’	au	>	o
‘ground’	mbin	>	mbiŋ

Table 5: Likely loans from Ap Ma into Waran.¹³

Therefore, in light of the known cultural and linguistic interactions between the Ap Ma- and Waran-speaking peoples, and in the absence of any known language-internal motivation for this highly unusual deictic behavior in Waran, we consider it plausible that deictic-marked adpositions in Waran developed at least in part thanks to influence from the neighboring Ap Ma language.

¹² Sources: <miñak> ‘woman’ (Butler 1981b: 31), <neg> ‘woman; wife’ (Wade 1983a: 68), <uman> ‘woven basket’ (Butler 1981b: 7), <wumin> ‘basket’ (Barlow 2021: 85), <koñim> ‘spirits of nature’ (Z’graggen 1972: 20), <konyim> ‘spirit’ (Wade 1983a: 48), <mürəm> ‘spirits of ancestors’ (Z’graggen 1972: 21), <molobi> ‘spirit whose face is found on garamut etc.’ (Wade 1983a: 63).

¹³ Sources: <peu> ‘arrowhead’ (Barlow 2021: 82), <peʌp> ‘arrow’ (Z’graggen 1972: 196b), <napuŋ> ‘paddle’ (Wade 1983a: 67), <nap> ‘paddle’ (Butler 1981b: 18), <au> ‘betel nut’ (Wade 1983a: 5), <o> ‘betelnut’ (Butler 1981b: 6), <mbin> ‘land, ground’ (Barlow 2021: 79), <bŋ> ‘ground’ (Z’graggen 1972: 168).

5. Conclusion

This article has examined the synchronic and diachronic aspects of obligatory spatial deixis marking in adpositions, an extremely rare phenomenon crosslinguistically. This construction seems, at least in part, to have arisen due to a phonological requirement in Ap Ma. Namely, certain enclitics (among them, postpositions) require proclitics as phonological hosts in order to form well-formed words. This proclitic-enclitic co-hosting relationship is itself a remarkable phonological phenomenon and warrants future research to better understand its nature and, especially, its origin. At any rate, the particular prosodic demands of the language are likely what have encouraged the general spread of deictic markers in the language and the particular pattern of obligatory deixis marking in adpositional phrases discussed here.

While it is possible that phonology may have also played a role in the development of this phenomenon in Waran, it is reasonable to assume that the marking of spatial deixis in adpositional phrases was borrowed from Ap Ma, or at the very least was influenced by it.

Looking further back into the history of the Keram-Ramu family, to which both languages belong, we see some of the structural conditions that may have helped give rise to deictic-marked adpositions in Ap Ma and Waran. First, the frequent use of semantically versatile articles may have provided a model for the proliferation Ap Ma deictic forms, which share some semantic and distributional features with these articles. Likewise, the fact that the Keram-Ramu oblique marker *-n commonly follows deictic forms may have encouraged semantically similar postpositions to require immediately preceding deictic markers. Thus, even though areal diffusion likely played a role in the development of deictic marking in Waran, this language as well would have possessed some of the morphosyntactic conditions facilitating the advent of this unusual construction.

Regardless of its origin, however, the obligatory combination of deictic forms with adpositions is very rare in the world's languages. Languages such as Ap Ma and Waran add further attestation to the diversity and degree to which languages can encode spatial deixis in their grammars.

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Abbreviations

? = morpheme of unknown meaning	EXCL = exclusive	OBL = oblique
1 = 1 st person	FOC = focus	PFV = perfective
2 = 2 nd person	FP = far past	PL = plural
3 = 3 rd person	FUT = future	POSS = possessive
AV = actor voice	INJ = interjection	PREP = preposition
CDM = core development marker	INS = instrumental	PRF = perfect
CMPR = comparative	IPFV = imperfective	PROX = proximal
COMPL = completive	IRR = irrealis	PRS = present
COND = conditional	LOC = locative	PST = past
DEM = demonstrative	MED = medial	QUANT = quantity
DEP = dependent	N3 = non-3 rd person	SG = singular
DIST = distal	N3SG = non-3SG	SP = specifier
DSTP = distant past	NEG = negative	STAT = stative
DU = dual	NOM = nominative	SUBJ = subject
EPIS = epistemic marker	NP = near past	TOP = topic
	NPL = nonplural	TR = time relator
	NT = neutral topic	

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