NOMINAL ASPECT IN MARORI

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Abstract

This paper discusses nonverbal TAM (Tense-Aspect-Mood), focusing on the completive perfective stative aspect marked by *-on* in Marori (a Papuan language of Southern New Guinea). The nonverbal aspect is grammatical in nature, with its coding local but possibly imposing a nonlocal morphosyntactic constraint on the clausal auxiliary verb. In terms of Nordlinger and Sadler's (2004) typology, Marori nonverbal aspect marking belongs to two types: the Independent Nominal and the Propositional Nominal Aspect types. It is demonstrated that its broad aspectual meaning, in terms of Reichenbach's notation, is [E-R,S], which is exactly the same as the Present Perfect in English. While having this similar broad meaning as with English, its morphosyntactic realisation and constraints in the grammar are quite different. An LFG analysis accounting for the distribution of *-on* is proposed, making use of the inside-out mechanism to account for the non-local constraint of *-on*, which extends to the clausal TAM.

1   Introduction[*]

TAM (Tense-Aspect-Mood) has traditionally been considered a property of verbs. However, cross-linguistic studies by Sadler and Nordlinger (2001) and Nordlinger and Sadler (2004) show that non-verbal tense is not unusual, and encountered in many languages. There is a debate, however, about whether there is indeed any such thing as nominal tense as discussed by Nordlinger and Sadler (2004). Tonhauser (2008), after examining the full range of the semantics of the nominal temporal marker in Guaraní (which is included in Nordlinger and Sadler's typology), disagrees with Nordlinger and Sadler's analysis (or label) of the Guaraní markers as nominal TNS markers, because these markers do not tally their properties with the verbal tense in this language.

In this paper, I present fresh data from Marori (a highly endangered Papuan language of Southern New Guinea, Indonesian west Papua, around a dozen of fluent speakers left) contributing to this debate, providing further empirical evidence for non-verbal tense-aspect. In line with Nordlinger and Sadler's stance, I argue that Marori does have a grammatical nominal (tense-)aspect. The Marori data also reveals that it exhibits both Independent/Local Nominal Aspect and Propositional/Clausal Nominal Aspect. In addition, Marori exhibits a

complex interplay between tense and aspectual properties, with distinct temporal anchors relevant for both sub-clausal and clausal units, forming a constructed aspect coding, thus adding another mixed type, not noted by Nordlinger and Sadler in their nominal TAM typology.

The paper is structured as follows. A brief overview of Marori clausal structure in given in section 2, followed by a description of Marori TAM and the associated domains in section 3. Nonverbal aspect by *-on* is presented in section 4, and the interaction between local aspect marking and its clausal constraint is discussed in section 5. The LFG analysis with its discussion is given in section 6, which is followed by the conclusion in section 7.

2   A brief overview of Marori clausal structure

The basic clausal structure in Marori depicted in (1) shows that it is a non-configurational verb-final language. Argument (subject and object) NPs typically come before the verb, without a fixed order, but they may also appear after the verb. The verbal predicative complex typically consists of a lexical predicate (X), not necessarily a verb, which is immediately followed by a (light or auxiliary) verb (V). The verb is inflected bearing tense, aspect and mood (TAM) agreement morphology. Certain lexical of high frequency such as 'run', 'walk', and 'sit' are directly affixed with TAM morphology.

(1)   NP*   ,   X   V
        (argument)   (lexical predicate) (inflected)

Marori marks heads as well as dependents. In general, an agentive argument receives suffixed verbal agreement, whereas a patientive argument receives prefixed verbal agreement. The internal morphological makeup of the verb is quite complex, showing not only nominal argument number but also verbal number (or pluractionality).[1] The verbal template is given in Figure 1. As shown, the prefix encodes S/O agreement, whereas the suffix encodes S/A agreement.[2] The circles indicate that number

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[1] See Arka (2011) for discussion of verbal number in Marori.

[2] The abbreviations S, A, and O follow their traditional use in typological linguistics: S (intransitive subject), A (transitive subject), and O (transitive object). Other abbreviations used in the example glosses are alphabetically ordered: 1,2,3 (first, second and third person), AUX (auxiliary), CPLT (completive), D.AUX (dynamic auxiliary), DEIC (deictic), DUR (durative), F (feminine), FUT (future), HAB (habitual), LOC (locative), IRR (irrealis), NPL (nonplural), M (masculine), MP (macro present), NrPST (near past), O (object), PL (plural), POSS (possessive), PRES (present), Q (question marker), REAL (realis), STAT (stative), SG (singular), U (undergoer).

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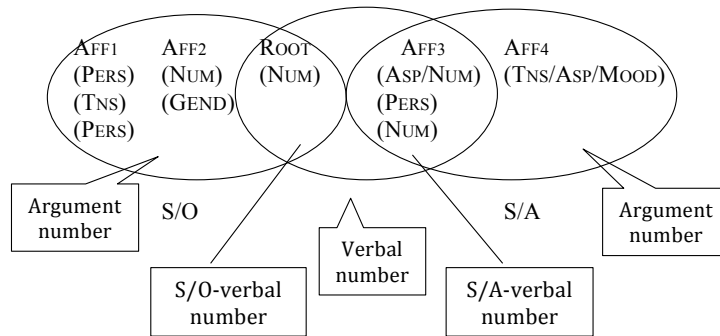
Figure 1. Verbal template in Marori (Arka 2011)

Free pronouns and S/O prefix forms in Marori show a singular/nonsingular (SG/NSG) distinction, shown in Table 1. The corresponding S/A suffixes are quite complex, as shown in Tables 2–3. These suffixes are portmanteau forms showing person, number, tense, aspect, and mood. They are of two classes, depending on the aspectual properties they encode in their past tenses: completive (or telic) and durative.[3] Note that there is often syncretism between the singular and dual forms, giving rise to a nonplural (singular or dual) vs. plural contrast.

Free core argument NPs are marked showing an apparent split-S system (though intransitive motion verbs complicate the picture, as we show below): patientive NPs receive the $=i$ clitic and prefix verbal agreement, whereas agentive NPs are unmarked and receive suffix verbal agreement. Thus, the patientive intransitive subject (S.p) and the transitive object (O) are treated in the same way, i.e. marked by $=i$. As seen in (2), *na* '1SG' is marked by $=i$ and receives the prefix *y(u)/i-* agreement on the verb.

		1	2	3
Free Pronoun:	SG	*na*	*ka*	*efi*
	NSG	*nie*	*kie*	*emnde*
S/O Pref:		*i-*	*k-*	*∅-*

Table 1: Free pronouns and S/O prefixes in Marori

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[3] The formatives *-re/-ro/-ri* are, strictly speaking, not a part of the pronominal argument suffixes but mark Actor verbal number (S/A verbal number, see Figure 1). They are included here to show that they serve to encode the general opposition of underspecified NSG vs. PL.

	(1a) IRR/FUT			(1b) NrPST (Completive)			(1c) RmPST (Completive)		
	1	2	3	1	2	3	1	2	3
SG	*-ru*	*-Ø*	*-Ø*	*-ben*	*-f*	*-f*	*-fori*	*-fi*	*-fi*
DU	*-ren*	*n--Ø*	*-Ø*	*-ben*	*n- -f*	*-f*	*-fori*	*n- -fi*	*-fi*
PL	*-men*	*n-(ri)m*	*-(ri)m*	*-freben -frendu*	*n- -(fre)f*	*(fre)f*	*-mbrofori*	*-mbrofi*	*mbrofi*

Table 2: Class 1 Argument suffixes in Marori

	(2a) REAL/MacroPRES (Completive/extended)			(2b) NrPST (Durative)			(2c) RmPST (Durative)		
	1	2	3	1	2	3	1	2	3
SG	*-du*	*-Ø*	*-Ø*	*-men*	*-m*	*-m*	*-maf*	*-maf*	*-maf*
DU	*-den*	*n-Ø*	*-Ø*	*-men*	*n- -m*	*-m*	*-maf*	*n- -maf*	*-maf*
PL	*-men*	*n--Ø*	*-Ø*	*-ben*	*n- -b/-m*	*-b/-im*	*-baf*	*n- -baf*	*-baf*

Table 3: Class 2 Argument suffixes in Marori

(2)   Patientive argument NPs: S.p=O

a. *na=i   patar yu-nggo-f*   b. *Pa   na=i   Thomas   ter=i-mo-Ø*
   1SG=U cold   1SG-AUX-NrPST   soon 1SG=UThomas hit-1-AUX-3
   'I suffered from being cold.'   'Thomas will hit me.'

    Neither the transitive subject (A) nor the agentive intransitive subject (S.a) can be marked by *=i*. They receive verbal suffix agreement.

(3)   Agentive argument NPs: S.a=A

   a. *na (*=i) fis   kund-ra-**mon***
      1SG   yesterday run-PL-1NPL.DUR.PST
      'I was running yesterday.'

   b. *na   tefye-**ben**   menjun   awo=i   paya-ke*
      1SG seeSG.M.O-1SG.NrPST small.SG kangaroo=U forest-LOC
      'I saw a small kangaroo in the forest yesterday.'

    In a ditransitive structure, *=i* typically marks the recipient (R) object NP as in (4)a. Both objects can be marked with *=i* as in (4)b. It is the R

object that gets verbal object agreement, as seen from the contrast between (4)a and (4)c.

(4) Ditransitives

    a. *Nawa tamba Albert=**i** njime-ben bosik.*
       1SG   already Albert=U 3SG.O.M.give-1NPL.NrPST pig
       'I already gave Albert a pig.'

    b. *Pafe sorweri=**i** John jim-im poyo=**i***
       DEF   basket=U   John   fill-DUR.NrPST coconut=U
       'The basket was filled (with) coconuts by John.'

    c. *Na   njomo-bon   Maria=i bosiki sokodu.*
       1SG   3SG.O.F-1NPL.NrPST Maria=U pig   one
       'I already gave Maria a pig.'

It should be noted that Marori does not have a strictly split-S system because motion verbs pattern like A (with suffix agreement), irrespective of whether they are patientive or agentive. Importantly, the subject of the motion verb cannot received the *=i* clitic.

(5)   *na /*ni=u fis   kwi   uyow soron-ndu*
         1SG   yesterday tree   top   fall-1SG.PRES
         'I fell off from the tree yesterday.'

Having outlined the basic morphosyntax in Marori, I now present the TAM system in both the verbal and non-verbal domains in Marori.

3   TAM and their associated domains

Marori has a grammatical TAM system, which, for Marori means that tense, aspect and mood are obligatorily marked in finite sentences and impose certain morphosyntactic constraints. Tense Aspect and Mood are tightly intertwined and are expressed by portmanteau morphemes on the finite verbs. Each is now described separately. For the purpose of exposition, I assume Riechenbachian (two-dimentional) theory of tense-aspect (Reichenbach 1947: 297, Kamp and Reyle 1993).

3.1   Tense and aspect

The term 'tense' refers to morphosyntactic oppositions (typically on the verb but also on non-verbal units) that encode linear temporal relations between event time (E) and a reference point (R). R such as 'yesterday' (past tense) or 'tomorrow' (future tense) is not, however, always explicitly

expressed. Tense is related to, but not the same as, temporal perspective/viewpoint, or viewpoint aspect.[4] This is the relation between R and S (speech or utterance time). These temporal points interact with aspectual properties such as stativity/durativity, inception, culmination/termination and result, typically inherent to or determined by certain event types (or lexical classes). This is lexical aspect. In this subsection, I demonstrate that tense, viewpoint aspect and lexical aspect interact in a complex way, giving rise to a TAM system that is quite distinct from familiar Indo-European languages such as English.
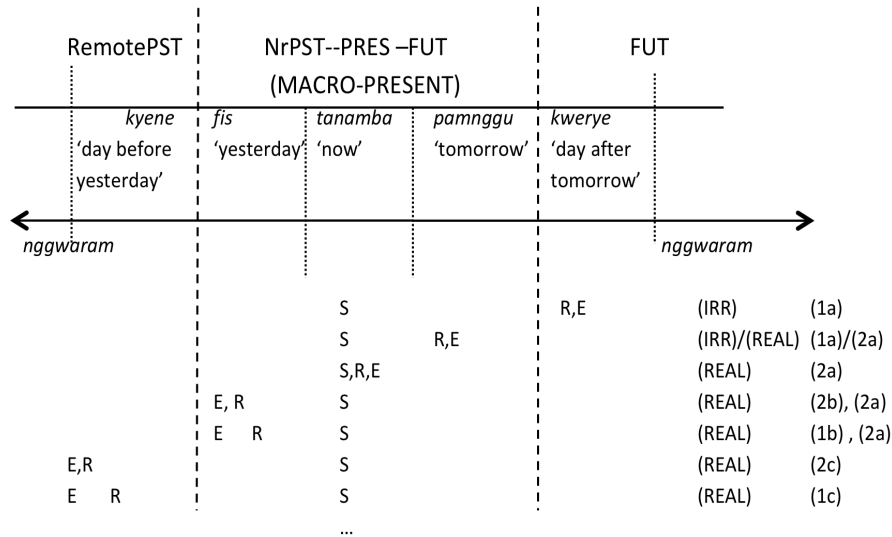
The first salient property is the classification of the temporal line into a rather nonsymmetrical four-way TENSE system: Present (PRES), Near Past (NrPST), Remote Past (RmPST), and Future (FUT). There is no remote future. In addition, the present tense form is usable for temporal points covering today, yesterday and tomorrow; hence we can say that there is a category of macropresent in Marori. The tense categories mapped onto the temporal line are shown in Figure 2.

As seen, the meaning of the TNS categories are described in terms of Reichenbach's contextual temporal anchors at the bottom part of the diagram: S (speech time), R (reference time), and E (event time). Different lines showing different combinations of temporal points correspond to different morphological shapes of verbs (distinct root and inflectional/agreement suffixes), whose classes are numbered and given on the right of the bottom part of the diagram. The numbers refer to the suffix types shown in Tables 2–3. The tense complexity arises due to the fact that there is more than one way of expressing the same temporal relation. For example, the future meaning [S-E,R] can be expressed by using the future tense, making use of the irrealis verb (1a), or by using the (macro)present tense by making use of the realis verb (2a). The reverse

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[4] Note that, while using Reichenbach's labels S, R and E, I follow Kamp and Reyle (1993:598) in defining tense as the temporal relation between the location time of the described eventuality (E) and Temporal Perspective point (TPpt), or R. Note that in Reichenbach's original conception, tense is the temporal relation of R and S, which in Kamp and Ryle's analysis is a TP (Temporal Perspective) relation. This TP, also known as Viewpoint Aspect, is distinct from Lexical Aspect, or *Aktionsart*. The term 'Aspect' used in this paper to refer to Aspect in its two senses, discussed in 3.2. The focus of this paper, however, is Aspect in its Viewpoint/TP sense. It shows complex temporal properties analysable the 'anterior present' (tense) in Reichenbach's system, or the Perfect, a category between tense and aspect (Kibort 2009). Unlike Kamp and Reyle who make use of [+/–STAT] and [+/–PERF] features, in addition to [+/–PAST] (as the values of TP) and *past/pres/fut* (as the values of TENSE), I keep Richenbach's simple labels of E, R and S. These simple primitives *are* arguably adequate to capture the tense-aspect meanings in Marori.

also holds: the same tense, in particular the macropresent tense, can be used to express more than one temporal relation. This is exemplified in (6) where the same verb form (with the verbal suffix –*du*, in bold) is used with three distinct (R) adverbials (underlined).

RemotePST	NrPST--PRES –FUT (MACRO-PRESENT)			FUT		
kyene 'day before yesterday'	*fis* 'yesterday'	*tanamba* 'now'	*pamnggu* 'tomorrow'	*kwerye* 'day after tomorrow'		

nggwaram ←————————————————————————————————→ *nggwaram*

	S		R,E	(IRR)	(1a)
	S	R,E		(IRR)/(REAL)	(1a)/(2a)
	S,R,E			(REAL)	(2a)
E, R	S			(REAL)	(2b), (2a)
E R	S			(REAL)	(1b) , (2a)
E,R		S		(REAL)	(2c)
E R		S		(REAL)	(1c)
		…			

Figure 2. Tense categories and their associated temporal points in Marori

(6) *na* <u>*fis* / *tanamba* / *pamnggu*</u> ***nde-n-du***
  1SG yesterday now   tomorrow bring-DEIC-1SG.MP

  stone=U here
  mara=i *kenggari*

  'I brought the stone here yesterday.'   [E,R—S]
  'I now bring the stone here.'   [E,R,S]
  'I (will) bring the stone tomorrow'   [S—E,R]

3.2 Viewpoint and lexical aspect

Viewpoint and lexical aspect interact in a complex way in Marori. The interaction is manifested in the choice of the actor suffix and the auxiliary root on the verb. There are two salient lexical aspectual properties in Marori: stative vs. dynamic and durative/terminative (completive), further discussed in section 6. At this stage, I outline how lexical aspect of the verbal root and its affix must be aspectually harmonious. For example, verbs of inherently durative events such *fyu*

'sleep' as seen in (7) must take a durative actor suffix, e.g. *-mon* instead of *–bon* (cf. Tables 2-3). In addition, the selected auxiliary also encodes natural posture meaning, e.g. *kufa* 'lie down' for the verb 'sleep'.

(7) *Nawa fyu kufa-mon   / * kufa-bon*
     1SG   sleep lie.down-1SG.NrPST.DUR lie.down-
     1SG.NrPST.NonDUR
     'I was sleeping/slept.'

The significance of stative/dynamic aspectual difference is evidenced by the psychological verb such as *raron* 'know'. 'Knowing' in Marori is a stative predicate. However, a change of state 'coming to know (e.g. understand something after an explanation)' is dynamic. The same verb *raron* therefore has to select different verbal auxiliary roots and receives different agreement patterns. The state of knowing uses the copular 'be' with the macropresent actor suffix agreement (8a) whereas the inchoative counterpart in (8b) uses the dynamic root *nggo* with undergoer prefix agreement.

(8) a. *Nawa raron   tombo-du   efi   siem=i* (stative)
        1SG   know   BE-1SG.PRES   the   answer-OBJ
        'I know the answer.'   [E,R,S]

    b. *Nawa tamba raron yu-nggo-f*   (inchoative, dynamic)
       1SG   already know 1SG-AUX-NrPST   [E,R—S]
       'I have understood.'

Note that the inchoative meaning of knowing (8b) is perfective dynamic in its viewpoint aspect, made explicit in its free translation. That is, the 'inchoative event of coming to know' has been completed prior to S. The NrPST marker *–f* marks this completive culmination meaning. The perfective particle *tamba* 'PERF/already' augments the perfective completive meaning.

3.3 Mood

Marori also shows realis/irrealis mood. Irrealis is used for future tense and imperative structure. Mood is encoded in the shape of the root for certain verbs and in the shape of the agreement subject agreement suffix on the finite verb. For example, the verb for 'sit' has a distinct verb form depending on its MOOD: *kuye* 'sit.REAL' and *mi* 'sit.IRR'. Thus we have the following contrast:

(9) a. *Mbe ka kuye-∅*   *ai?* b. *paku ka mi!*
      MBE 2SG sit.REAL-2NPL.PRES Q   there 2SG sit.IRR
      'Nyoman, are you sitting (there)?'   'Sit there!'

The following are examples of declarative sentences in future/irrealis mood (10a), and in past/realis mood (10b).

(10)
a. *Na kursi uyowu mi-ru*   b. *Na kursi uyowu kuye-men*
   1SG chair on   sit.IRR-1SG.FUT 1SG chair on   sit.REAL-
   'I will sit on the chair'   1NPL.NrPAST
                                        'I sat on the chair yesterday.'

4   Nonverbal aspect

In this section I show that Marori non-verbal units may express their own temporal structures. Consider the contrast in meaning due to the marking of the completive/terminative perfective aspectual meaning by *-on* in (11a)[5] with the corresponding sentence without it in (11b):

(11) a. *Nam-on*   *nggafi   nuron te*   [E–R,S]
      1POSS-CPLT   that.SG wife   STAT.AUX.3NSG.PRES
      'That is my ex-wife/that is the one who was my wife.'

     b. *Nam   nggafi   nuron   te*   [E,R,S]
      1POSS that.SG   wife   STAT.AUX.3NSG.PRES
      'That is my current wife/that is the one who is my wife.'

The perfective meaning (11a) represented as [E–R,S] means that the (husband)-wife-relation (E) took place in the past (i.e. already terminated at some point in the past), and E is viewed from the perspective/reference of present utterance time (i.e., S=R). Given its completive/perfective meaning, *-on* is hereafter glossed as CPLT. Without *–on* (11)b, the wife-possession relation persists at the moment of speaking (i.e. [E,R,S]). This kind of perfective meaning is precisely the same meaning encountered in the English present perfect, e.g. *John has lived in Bali* [E–R,S]. That is, that John's event of living in Bali (E) already terminated at some point in

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[5] The suffix *-on* can be relaises as *–won* or *-(w)en* showing vowel harmony with the glide *w* appearing after a vowel final stem.

the past, and it is viewed by the speaker from the perspective of present utterance time (i.e., S=R).[6]

In addition to possession, *-on* can encode completive meaning associated with different kinds of relations. Example (12a) is associated with a past property ('being deaf'). The suffix shows up on the lexical head of the predicative NP (*mburo*) (12a). Its absence indicates that the 'deaf' property is persistent at the moment of speaking (12b).

(12) a. *Na   mburo-won   tombo-du*
      1SG deaf- CPLT AUX.NPL-1SG.PRES
      'I am no longer deaf.'

    b. *Na   mburo   tombo-du*
      1SG   deaf   AUX.NPL-1SG.PRES
      'I am deaf.'

In the following examples, *-on* marks past locative and purpose relations:

(13) a. *botol-on   bir*   b. *bir-en   botol*
      bottle-CPLT   beer   beer-CPLT   bottle
      'beer that used to be in a bottle' 'bottles previously for beer'

The locative meaning in the noun-noun modification appears to be due to world-knowledge; e.g. a bottle is a container and therefore (13a) means that the *-on* modifier is the past container of the modified entity ('beer'). Reversing the order (13b) results in the noun 'beer' being the modifier signalling a past purpose: the bottle was used as container for the beer.

In the following examples, *-on* is associated with origin of the entity depicted by the head. That is, at the moment of speaking, the fish (14a) and the skin (14b) are no longer in their original locations.

(14) a. *rur-en   awe*   b. *kwi-wen   paar*
      river- CPLT fish   tree- CPLT   skin
      'fish caught from the river'   'detached bark/skin from a tree'

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[6] Surely, as pointed out by the anonymous reviewer, the meaning of the English present perfect is rather complex in that it can be ambiguous. For example, *John has lived in Bali for 5 years* can mean that the event of living (E) persists at the utterance time (S). This second reading is, as pointed out by Kamp and Reyle (1993:567–8), an idiosyncrasy of English. Other languages such as German and French must use the simple present tense to capture the second reading.

A modifying verb affixed by *-on* within a nominal encodes a past process. For example, sago or fish already baked/grilled can be expressed by an NP with the modifying verb affixed with *-on*:

(15) a. *puraw-on*   *nggi*   b. *puraw-on*   *awe*
     bake- CPLT   sago   grill- CPLT   fish
     'baked sago'   'grilled fish'

It should be noted that the contrast of the presence and absence of *-on* correlates with the contrast between the stative [E–R,S] (a past property/quality/relation (E) such as possession, process etc., no longer true at the utterance time) and [E,R,S] (a current property/quality that is true or persistent at the utterance time). For simplicity, I just focus on the interpretation of the relation (E) that is marked by *-on*, which corresponds to what Tonhauser calls the nominal/possessive time (t_{poss}/t_{nom}). It is instructive to investigate whether there is any other temporal/aspectual contrast within the NP in Marori. It turns out that there is: the (E) relation within the NP can have its progressive (on-going) or habitual aspect highlighted, and is therefore marked accordingly. More investigation is needed with respect to the full extent of the semantics of the aspectual contrast within nominals in Marori, but I outline my preliminary findings in this subsection.

The ongoing aspect within a nominal is encoded by *=fa*. Then, we can have an aspectual difference within an NP as shown in (16). The form *=fa* is glossed as 'still', in contrast to the completive meaning of *-on*.[7] The contrastive aspectual meaning can be informally represented as E,R,S; 'E: still'] for *=fa* vs. [E–R,S; 'E: no longer'] for *-on*.

(16) *Kwi=fa*   *paar*   vs.   *kwi-wen*   *paar*
     tree=STILL skin   tree-CPLT skin
     'bark still attached to its tree'   'bark detached from its tree'
     [E,R,S; 'E: still']   [E–R,S; 'E: no longer']

The habitual nominal aspect is expressed by *mbe*, a marker that is encountered to mark a non-finite clause. Given its habitual meaning translatable as 'usually', I gloss *mbe* as HAB in its aspectual function in nominals. The examples showing the contrast are given in (17).

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[7] *=fa* as a nominal aspect marker appears to be the grammaticalisation of the postposition comitative *=fa*.

(17) a. *nasi mbe   bobo*   vs. b. *nasi-wen*   bobo
       rice HAB plate   rice-CPLT   plate[8]
       'a plate usually for rice'   'a plate previously for rice'

(18) a. *Puraw mbe nggi*   vs. b. *puraw-on*   *nggi*
       bake   HAB sago   bake-CPLT   sago
       'sago usually for baking'   'baked sago'

To conclude, there is evidence that a nominal domain can have its own temporal structures, e.g., showing terminated/completive (past) relations in contrast to on-going or habitual relations. Except for *-on*, the resources used to mark these different temporal relations in Marori are also used in other constructions. A full analysis for the progressive and habitual aspect within nominals in Marori requires further research. In what follows, I will focus on the completive/terminative *-on* for which I have enough data for a coherent analysis.

5 The clausal TAM constraint of *-on*

This section discusses the morphosyntactic constraint imposed by *-on* on clausal TAM in Marori. But first I describe the morphosyntax of the verbal complex of the clause. As described in section 2, TAM in Marori is marked on the auxiliary verb, if present; otherwise on the lexical predicate. When the inflected auxiliary is present, the lexical predicate comes before the auxiliary and is not inflected. For example, the lexical verb *kibib* 'roll' is not inflected in (19a-b), whereas the auxiliary verbs (*nggurim, pendim*) are.

(19) a. *Tanambadu   nggafi sokodu bola kibib   nggu-ri-m*
       just.now   that   one   ball roll   AUX-DUR-3.NrPST
       'The ball was rolling just now.'

   b. *John   sokodu bola=i kibib pendi-m*
       John   one   ball=U roll   3SG.M.make-3.NrPST
       'John rolled the ball/ made the ball roll.'

Note that the verb *kibib* in (19a) is the lexical predicate of the clause. It is not inflected to encode its durative/progressive aspect in the past tense. In contrast, as discussed in the preceding section, a non-verbal predicate can be inflected in this position when it expresses completive-perfective aspect; e.g. examples (11) and (12). Crucially, there is a

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[8] Plate made of coconut shell.

syntactic restriction in that *-on* requires that the clausal auxiliary verb must be aspectually stative (i.e. the copular verb *te*) and in the present tense form. Consider the following contrast in (20), where the dynamic auxiliary (with the *ngg* root) is not acceptable.

(20) a. *Emde   usindu   kara-**won**   tere   / * nggo-ro*
      3NPL   all   sick-CPLT   BE.3PL.PRES   D.AUX3SG-PL
      'They are all no longer sick.' [E–R,S]

    b. *Nam-**on**   nggafi   nuron   te / *   ngguo.*
      1POSS-CPLT that.SG   wife   BE.3PL.PRES   D.AUX3SG
      'That is my ex-wife/that is the one who was my wife.'
      (Lit. That is the wife that I previously owned) [E–R,S]

The dynamic auxiliary *ngg* is used only in the dynamic event, as seen in (21). This is, however, a different kind of tense-aspect, not the one in the Present Perfective aspect. Note that the dynamic auxiliary is in the present tense (21a) and in the past (21b). In these cases *kara* cannot be marked with *-on*.

(21) a. *Emnde   usindu   tanamba   kara   nggo-ro.*
      3NSG   all   now   sick   D.AUX3NSG-PL
      'They are all (being) sick now.' [E,R,S] (E: 'dur'; R,S: 'now')

    b. *Emnde usindu fis   kara nggo-ro-b*
      3NSG all   yesterday sick   D.AUX3NSG-PL-NrPST.DUR
      'They were all (being) sick yesterday.' [E,R–S] (E: 'dur', R: 'yesterday')

In contrast to *-on* in (20) (associated with the non-verbal clausal predicate), *-on* associated with an argument NP does not constrain the TAM of the clausal head. For example, the NP subject in (22) comes with *-on* but the copula verb is of the dynamic type, which can be in the present tense (a) or the past tense (b).

(22) a. *[nam-on   nuron] kara nggo-ra   tanamba*
      1POSS-CPLT wife   sick   D.AUX-3.DUR.PRES   now
     'My ex-wife is sick now.'

    b. *[nam-on   nuron] fis   kara nggo-ra-m*
      1POSS-CPLT wife   yesterday sick D.AUX-DUR-3.NrPST
      'My ex-wife was sick now.'

Likewise, the presence of *-on* associated with an NP object does not require that the clausal TAM be in the present stative tense:

(23) *mar   na   nasi-wen   bobo   sokodu   ife-ben*
     NEG   1SG   rice-CPLT   plate   one   3SG.see-1NPL.PST
     'I didn't see the plate previously used to hold rice.'

To sum up, *-on* may or may not constrain the clausal TAM. This depends on whether *-on* is part of a lexical predicate of the clause or is an argument.

6 Analysis and discussion

In this section, I address the relevance of Marori data first in wider typological and theoretical contexts, and then provide an LFG analysis.

Typologically, Marori is not unique in that similar cases of nominal tense-aspect are, as discussed in Nordlinger and Sadler (2004), encountered in many other languages of different genealogical groupings. As mentioned in section 1, there is a debate whether there is such a thing as nominal tense. Tonhauser (2008) disagrees with Nordlinger and Sadler's analysis (or label) of the Guaraní markers as nominal TNS markers. While she entertains the label 'nominal grammatical aspect/modality markers' (Tonhauser 2006), she is reluctant to classify them as such in her later publication (Tonhauser 2007).

The present study in Marori contributes to this debate, providing further empirical evidence for non-verbal tense-aspect. On the analysis that the temporal structure of tense (i.e. the relation between E and R) is simpler than (or part of) the temporal structure of aspect (where the E and R relation is viewed from R relative to S), we can say that *-on* in Marori marks a nominal (viewpoint) aspect (i.e. [E-R,S]), rather than nominal tense. That is, it encodes a complex temporal structure, rather than a simple past precedence between E and R. As described earlier, verbal tense in Marori is a four-way system (RmPst, NrPst, Present and Fut), and *-on* does not fit in with any of these. Temporally it is associated with 'past E' and 'present' (R,S) perspective; hence its completive-perfective aspectual meaning.

While *-on* is essentially an aspect marker, its associated present tense meaning is in fact part of its important morphosyntactic properties because, as pointed out in the preceding section, its clausal TAM must be in the present tense with stative auxiliary root. For this reason, the correct label (despite its being rather long) is the 'present perfective stative aspect marker'. That *-on* carries tense information is recognised in the analysis as

seen in the representation of the f-str below. For simplicity, however, we can keep the simple label *-on* as an nominal aspect marker in Marori (while keeping in mind the complexity of its temporal structure as discussed earlier).

Having making my analysis explicit that *-on* is a non-verbal aspect marker in Marori, I now proceed to the next issue regarding the typology. According to Sadler and Nordlinger (2001) and Nordlinger and Sadler (2004), there are two kinds of nominal TAM: Independent Nominal TAM and Propositional Nominal TAM. Independent Nominal TAM has TAM information locally relevant to the nominal itself, independent from the clausal/propositional TAM.

Marori shows both the Independent Nominal type and Proposional Nominal type. The Independent Nominal Aspect is exemplified by subject NP with *-on* in (22) and object NP with *-on* in (23). In these instances, the nominals have their own temporal structure (namely, [E-R,S]), which is independent of the verbal/clausal TAM. We have seen, for example, that subject/object NP with *-on* can appear with the clausal/propositional TAM in the present or past tenses in dynamic aspect.

The Propositional Nominal/Nonverbal TAM of *-on* needs a bit of discussion. It is slightly different from the Propositional Nominal TAM exemplified in Sadler and Nordlinger (2001) and Nordlinger and Sadler (2004). In their account, when attached to dependent nominals (argument and adjunct NPs in verb-headed clauses), propositional TAM involves nonlocal interpretation of the TAM marker, in the sense that it is not interpreted with respect to the nominal to which it is attached but rather to the higher clause within which it is embedded.[9]

The situation for the non-verbal tense-aspect *-on* in Marori is slightly different. Recall that *-on* can appear not only with a noun but also with other categories such as an adjective; see example (20a). The crucial characteristic of *-on* is that it is both local and non-local (i.e. propositional): *-on* in the (20a-b) marks the temporal point associated with the E of the stem it is attached to, e.g. *kara-won* 'sick-CPLT= past sickness' and *nam-on* '1POSS-CPLT = past possession'. The marker is, however, also clausal/propositional since it contributes to and constrains the type of the clausal auxiliary it must co-occur with. This strategy of aspect marking in Marori can be thought of as a constructed strategy:

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[9] See Lardil examples in Klokeid (1976) and Nordlinger (2004:791) where the nominal tense markers are in a sense 'tense agreement' because they are additionally marked in the verb.

more than one exponent in syntax is involved to construct the 'present completive/perfective stative aspect'.

In short, the non-verbal aspect in Marori presents a slightly different kind of aspect type: while it is essentially a Propositional type, its encoding shows a constructed strategy involving both local and clausal auxiliary markers. This local-clausal property of non-verbal aspect type is a category not explicitly mentioned in Nordlinger and Sadler's (2004) typology.

I now discuss how the two types of nominal aspect in Marori can be captured in LFG. Before I move on to the LFG analysis, however, more discussion on the nature of aspect with its associated ASP feature is necessary. As pointed out in Tables 2 and 3, Marori subject suffixes show inflection encoding tense and aspect. I have also pointed out that a close investigation reveals a complex interplay of two temporal distinctions (*durative* vs. *completive* and *stative* vs. *dynamic*) in Marori grammar. The two distinctions cross-cut each other, and give rise to the aspectual space shown Figure 3.

The first two cells (stative durative and stative completive) are restricted in their temporal structure variations, as they both take the auxiliary *te*. The dynamic aspects (dynamic durative and dynamic completive) are rich in their variations, giving rise to numerous valence structures. Discussing them in considerable depth is beyond the scope of the present paper. For the analysis in this paper, which is on the non-verbal tense-aspect, we are only concerned with cell 2 of Figure 3, which encodes the completive stative aspect. Recall that we have two types of nonverbal aspect in Maori: the Independent Aspect associated with argument NPs and the Propositional Aspect (which in Marori is constructed by marking locally on the lexical predicate and also non-locally on the auxiliary verb).

|	durative	completive
stative	(1) verbal aspect: stative aux ***te*** [present tense only] [restricted temp. structure: E,S,R]	(2) non-verbal & verbal aspect: *-on* (+ stative aux *te*): 'perfective' [if predicative, present tense only] [restricted temp. structure: E−R,S].
dynamic	(3) verbal aspect dynamic aux *ngg, mo*: [any tense, possibly in progressive with *mba*] [unrestricted temp. structure]	(4) verbal aspect dynamic aux *ngg, mo*: [any tense, possibly in perfective with *tamba*] [unrestricted temp. structure]

Figure 3. Types of aspectual values in Marori

On the basis of the previous discussions, which highlight the point that tense and aspect are tightly intertwined properties in Marori (as also seen in Figure 3), I propose to have a TNS-ASP feature in the f-str, whose value is an f-str with TNS and ASP as shown in (24). For Marori, the values of the TNS and ASP are slightly different from the values of the corresponding TNS and ASP in familiar languages like English.[10]

(24) $\begin{bmatrix} \text{TNS-ASP} \begin{bmatrix} \text{TNS } \{\text{pres} \mid \text{nr.pst} \mid \text{rm.pst} \mid \text{fut}\} \\ \text{ASP } \{\text{sta-dur} \mid \text{sta-cplt} \mid \text{dyn-dur} \mid \text{dyn-cplt}\} \end{bmatrix} \end{bmatrix}$

Having the TNS-ASP feature in place, I now turn to the complete f-str representation. The analysis is to allow the feature TNS-ASP to appear in a non-verbal domain (e.g. adjective or nominal) and its associated local f-str. The Independent Nominal Aspect can be straightforwardly captured as it strictly local. For instance, sentence (25a) can be represented as having the f-str shown in (25b).[11]

(25) a. [*nam-on   nuron*] *kera nggo-ra   tanamba*
     1POSS-CPLT wife   sick D.AUX.3NSG-DUR.PRES now
     'My ex-wife is sick now.'

    b.

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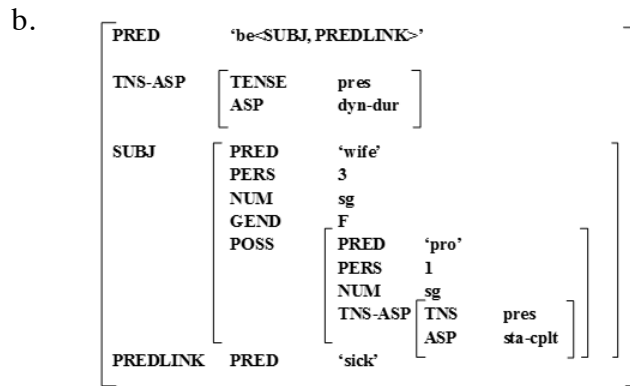
[10] An alternative way to capture the complex system in Marori is to have the following attribute values: TNS {pres | past | fut}, REMOTE { + | – }, AKTIONART {stative | dynamic}, EVENT-EXECUTION {dur | complete}. In this way we avoid using singular values and we can use a recurring feature space and combine it in different ways. In the interest of space, while promising, this proposal is not implemented in this paper. I thank the anonymous reviewer for the suggestion.

[11] Note that for the main copula predicate, I adopt a closed-function of PREDLINK analysis (Butt et al. 1999, Dalrymple, Dyvik, and King 2004, Attia 2008). This is mainly due to the fact that the copula predicate in Marori is obligatory for non-verbal predication.

The f-str says that the clausal propositional aspect is dynamic-durative in the present tense.[12] This captures the meaning that the event of being 'sick' (E) is true and persists at the moment of speaking 'now' (S,E); that is, the temporal properties of E, S and R overlap ([E,S,R]). The subject NP also has its own aspect whose value contains [ASP sta-cplt]. Given that the interpretation of *-on* is [E–R,S] (a stative relation terminated prior to the utterance time) in which the present-tense temporal anchoring is implied (and enforced on the clausal auxiliary in the case where the unit it marks is predicational), I therefore also include the [TNS pres] feature in the f-str of the nominal domain. In short, the idea of nominal (tense-)aspect being independent from the clausal aspect can be straightforwardly captured in our LFG representation.

The non-verbal Propositional Aspect is slightly more complicated than the Independent Nominal aspect. This is due to the fact that *-on* imposes a constraint on its auxiliary:

(26) *Emde usindu kara-**won** tere / * nggo-ro* (=(20))
    3NPL all sick-CPLT BE.3PL.PRES D.AUX3SG-PL
    'They are all no longer sick.'

To capture the non-local clausal constraint originated from the lower unit in the structure, I make use of an inside-out constraint. The inside-out constraint is imposed by *-on* is specified in the lexical entry of this suffix, partially shown in (27). The notation ((PREDLINK ↑) TNS-ASP) =c (↑TNS-ASP) says that when its corresponding f-str is part of the value of PREDLINK attribute in a larger f-str, which itself also contains TNS-ASP, this TNS-ASP must have the same values (namely TNS=pres and ASP= sta-cplt). Note that the inside-out constraint is optional (placed within brackets) as it will not apply when *-on* is not part of a PREDLINK structure, in which case the clause has its own TNS-ASP value.

(27) *-on* suff (↑ TNS-ASP) = ↓
    (↓ TNS)= pres
    (↓ ASP)= sta-CPLT
    ((PREDLINK ↑) TNS-ASP) =c (↑TNS-ASP))

With all these in place, sentence (26) can now be represented as

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[12] Note that 'being sick' in Marori is considered 'dynamic' as it implies a change of state; that is, the default state is assumed to be 'healthy' and sickness would have a starting point (and typically an ending point too).

having the f-str shown in (28). Both the lexical predicate (PREDLINK) 'sick' and the clausal predicate ('be') has TNS-ASP with the same values: 'stative completive' aspect in the 'present' tense.

(28)

$$
\begin{bmatrix}
\textbf{PRED} & \textbf{'be<SUBJ, PREDLINK>'} \\
\textbf{TNS-ASP} & \begin{bmatrix} \textbf{TNS} & \textbf{pres} \\ \textbf{ASP} & \textbf{sta-cplt} \end{bmatrix} \\
\textbf{SUBJ} & \begin{bmatrix} \textbf{PRED} & \textbf{'pro'} \\ \textbf{PERS} & \textbf{3} \\ \textbf{NUM} & \textbf{nsg} \end{bmatrix} \\
\textbf{PREDLINK} & \begin{bmatrix} \textbf{PRED} & \textbf{'sick'} \\ \textbf{TNS-ASP} & \begin{bmatrix} \textbf{TNS} & \textbf{pres} \\ \textbf{ASP} & \textbf{sta-cplt} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

7   Conclusion

Nonverbal temporal markers and their interpretation are of great interest typologically and theoretically. There is increasing evidence from under-described languages that TAM is not exclusively associated with the verbal domain. While it is true that the verb remains the native domain of rich and complex TAM coding, the semantics of non-verbal TAM is arguably equally complex. In this paper, I have presented preliminary research on nonverbal TAM in Marori, focusing on only one aspect of it, namely the completive perfective stative aspect marked by *-on*. I have argued that its broad aspectual meaning is [E-S,R], exactly the same as in the Present Perfect in English. While having this similar broad meaning as in English, its morphosyntactic realisation and constraint in the grammar is quite different, e.g. while it equivalent to the prefix *ex-* or adverb *former* (as in *ex-wife* or *former wife*), *-on* in Marori has a wider distribution as it can be attached to nouns and non-nouns. I have proposed an LFG analysis accounting for the distribution of *-on*, in particular its non-local constraint that extends to the clausal TAM by making use of the inside-out mechanism in LFG. Further investigation is needed to account for the full extent of non-verbal TAM in Marori. The areas that need in-depth exploration include the nature of nominal progressive and habitual aspect (see section 4) as well as nominal mood in Marori, which yet requires further investigation.

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