POc *ma- and the Adjectives: Oceanic as Seen through Possibly Productive Morphology in Tukang Besi

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An article in volume 40 of this journal discusses the history of the suffix *ma- in Oceanic languages, and compares the functions found in these languages with those attested in some non-Oceanic Austronesian languages. The current article adds some refinements based on a careful consideration of data from Tukang Besi, and provides a basis for questioning the simple bipartite divisions employed in classifying morphology in the earlier article. It is shown how reference to some of the synchronically attested morphological processes in Tukang Besi can help to model the Oceanic data.

1. INTRODUCTION. This article discusses some idiosyncratic functions and restrictions of morphemes and formatives in Tukang Besi related to the protoform Proto–Malayo-Polynesian *ma-, itself the source of Proto-Oceanic *ma-. By highlighting some overlooked morphological traits of the morpheme in Tukang Besi, a Western Malayo-Polynesian language, we find some further support for the categories and argumentation that Evans and Ross (2001) (henceforth E&R) propose in their account of Proto-Oceanic *ma-. While in the main discussing the functions of reflexes of this morpheme in Oceanic languages, and speculating about its use in Proto-Oceanic, E&R make reference to non-Oceanic data as external witness to their reconstructed functions. I shall leave discussion of the presentation of the Philippine material to those better suited to it, but feel I should address the way Tukang Besi is represented in their article.

The points that I address concern: (1) the notion of productivity in a morpheme; (2) the difference between stative and experiential verbs; (3) other reflexes of Proto–Malayo-Polynesian *ma- in Tukang Besi beyond those that E&R mention, and as part of this: [1] (4) reasons for the changed shape (*mo-*) of the most widespread reflexes of *ma- in Tukang Besi; and (5) a possible alternative source for an extra apparent reflex of *ma- in

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1. All references to *ma- in conjunction with a discussion of Tukang Besi morphosyntax shall, of course, refer to the Proto–Malayo-Polynesian *ma-, that is ultimately the source of both the Tukang Besi morpheme and the reconstructed *ma- of Proto-Oceanic that E&R describe; the Tukang Besi reflexes of PMP *ma- (*mo-, me-,* and *ma-*) are thus cognate with POc *ma-.

the language (this other *mo*-shaped morpheme clearly goes beyond the scope of what E&R considered, and its omission in their analysis is understandable).

Regarding the first of these issues, E&R (2001:270) discuss two "macro" categories of reflexes of *ma- in Oceanic languages: "productive" valency reducing morphemes, and (more or less) "fossilized" morphemes that appear to show the same history and form as the valency-reducing morpheme, but without that function. This begs the question of what it means for a piece of morphology, or grammatical construction, to be productive, and what sort of behavior (or lack thereof) we expect of fossilized morphemes. I shall address these questions not in the broad, general sense, but in the course of an examination of some of the Tukang Besi reflexes of PMP *ma-.

The question of stative and experiential verbs is raised by the terminology that E&R (2001:275–78) employ. They discuss three categories of "nonproductive" reflexes of *ma-, which they label, variously (i) stative verbs; (ii) stative (adjective) verbs ~ undergoer-subject (adjectival) verbs ~ undergoer-subject verbs, and (iii) experiential verbs. The labels used are not explained (what does it mean to be an [adjectival] verb in contrast to being a stative verb? In what way is the subject of an experiencer verb not an undergoer?), nor are references for such an explanation or justification given. Furthermore, the roots that they discuss do not appear to inherently support the distinct categories; on purely semantic grounds, at least, 'be cold' is surely at least as experiential as 'breathe', and I doubt that the single argument of 'right-hand(ed)' is any more an undergoer than that of 'left-hand(ed)'.

There are diachronic behavioral differences between their "(adjectival) verb" class and the other two: the stative verbs always reflect *ma- in Oceanic, the (adjectival) verbs are reconstructable both with and without *ma-, while the experiential verbs are split between these two groups. The question, however, is the extent to which these differences represent discrete categories, or simply a behavioral cline in the same category (something like a single "nonagentive verb" category, which shows different degrees of "intrusion" of a *ma- morpheme through its membership). From their data, there seems to only be one lexical category. Examining the Tukang Besi data, however, I can offer some support for the experiential verbs' existence as a separate category, and a suggestion, based on data introduced in the discussion of productivity, for the differential adoption of *ma- by these roots in Oceanic.

The final point above, the reflexes of *ma- in Tukang Besi and their forms, is relevant to the discussion of productivity, and so shall be presented first. To a large extent, the material presented in this article is not new; almost all of it appears in Donohue (1999a), and what is not found there can be found in various other published articles on the Tukang Besi language. The presentation here, however, brings together information of different sorts to bear on the specific issues raised by E&R and addressed here. On almost all the points of analysis, I can refer the reader to earlier published work, where more extensive discussion of many of the following points can be found (Donohue, various).

2. *ma- IN TUKANG BESI. E&R (2001:285) correctly identify the productive anticausative *mo-* (Donohue 1999a:274, 280–81)[2] as cognate with the stative *ma-

morpheme they are investigating, and also suggest that *ma- is also reflected in a fossilized prefix found on many adjectives and nonagentive verbs. They do not, however, discuss the frequentive prefix *me-* as another likely cognate (Donohue 1999a:272), nor do they account for another, admittedly infrequent, *mo-*shaped prefix, nor the (regular, but restricted) referential derivation, formed with a prefix *me-* and found on demonstratives. Two further prefixes, the durative performative *hæme-* and the (infrequent) verbalizer *homo-*, are most likely related to these prefixes, fused onto the other productive prefixes *he-* 'do verbalizer'[3] and *hoN-* 'purposeful verbalizer'. See Donohue (1999a: 271–72, 287–89, 483–84) for further details on these last two possibilities. This section presents a more complete account of the modern reflexes of *ma* in Tukang Besi.

2.1 REFLEXES OF *ma- AND *ta-: A PREVIEW OF THE OCEANIC SPLIT. There are a variety of morphemes associated with passive and passive-like functions in Oceanic languages. Outside the Polynesian passive suffixes, which appear to have developed from earlier object-marking morphology, Lichtenberk (1991) notes the presence of reflexes of *ta- in western Oceanic, often in an anticausative function. E&R summarize the literature, noting that Pawley (1972) pointed out that there are two reconstructable passive prefixes in Oceanic, *ma-, *ta-. These prefixes are in the main exclusive of each other in terms of their distribution as productive affixes across languages in Oceanic, and the same is frequently true in other, non-Oceanic Austronesian languages as well, as E&R note. They note that Malay does not show productive reflexes of *ma-; this appears to be largely true. There are some cases of dialectal fluctuation, such as Indonesian *asin* 'salty', versus Malaysian/Singaporean *masin*, and at least one apparent instance of productive derivation, *m-asam* 'sour', from *asam* 'tamarind', in Malaysian/Singaporean (Indonesian has *asam* for both 'sour' and 'tamarind') (this may be a development by analogy in Malaysian/Singaporean). The appearance of *mV-* on words such as *merah* 'red' (<*ma-iRaq) and *meti* 'low tide' (< *ma-qati) shows that this prefix has been more fully productive at earlier stages of the language.

Tukang Besi is one language in which both these morphemes are reflected, in both productive and nonproductive guises. In addition to the semifossilized use of *mo-* with the majority of adjectives, to be discussed in 2.3, a morpheme of the same shape is—as pointed out by E&R—a productive anticausative prefix. E&R cite (1) and (2) to demonstrate the function of this morpheme (Donohue 1999:281).[4]

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2. Unaccountably, E&R cite page numbers from the unpublished, and thus not easily available, 1995 version of what is here referred to as Donohue 1999a. They follow a similar practice referring to other books that are available in published form: Klamer 1994/1998, Van Klinken 1997/1999. I have updated page references to comply with the pagination of the published, and so more easily referenced, book.

3. Itself possibly related to the independent verb *sai* 'make, create'.

4. In addition to A, S, and P, which are defined as per Comrie (1978), the following abbreviations are used: 1, 2, 3: first, second, and third person; ANA, anaphoric; ANTICAUS, anticausative; APPL, applicative; CAUS, causative; CORE, core argument; EMPH, emphatic; FREQ, frequentive; GEN, genitive; I, irrealis; NOM, nominative; PASS, passive; PF, perfective; PL, plural; PRES, presentative; PP, P-prefix (in relativization); R, realis; REC, reciprocal; RED, reduplicant; REF, referential; SG, singular; SI, infix marking S/A; VRB, verbalizer. Ungrammatical examples are marked with an asterisk *, and are additionally marked by the lack of punctuation or capitalization.

(1) 'U-gonti='e   na   kau.   (2) No-mo-gonti=mo   na   kau.
     2SG.R-chop=3P   NOM   wood   3R-ANTICAUS-chop=PF   NOM   wood
     'You chopped the wood.'   'The wood is chopped.'

In addition to its phonological form and its prefixal position, this morpheme is described as displaying the following characteristics (Donohue 1999a:274, 281–82): (i) no agentive *by*-phrase is permitted in clauses involving *mo-*; (ii) *mo-* attaches to process verbs, and the derived verb denotes the state resulting from that activity: noun (y) was verbed, and has now changed state significantly; and (iii) the P of the original verb must be totally affected by the predicate. As such, the description of *mo-* matches closely the quoted and inferred descriptions of reflexes of *ma-* in Oceanic languages. There can be no doubt that Tukang Besi *mo-* is a regular reflex of this morpheme.

There is another morpheme that appears to fit into the scope of *ma-*. For the prefix *me-* 'frequentive', which indicates that the activity described by the verb is performed on more than one occasion, there is a sense of stativity, in that the predicate does not describe a single, punctual event, but rather is extended over time. An example of this prefix can be seen in (3), and the derived (4).

(3) No-tita'i ala'a.   (4) No-me-tita'i   ala'a.
     3R-defecate   just   3R-FREQ-defecate   just
     'S/he's only defecating.'   'All s/he does is defecate.'

Notably, when the base that is used is bivalent, the derived verb form is monovalent, similar to the *mo-* derivations (Donohue 1999:272).

(5) No-landa='e na   lau-mate.
     3R-stamp=3P   NOM   penis-dead
     'S/he's stamping on sea cucumbers.'

(6) No-me-landa.
     3R-FREQ-stamp=3P
     'S/he's always stamping on and on (e.g., when dancing).'

(7) *no-me-landa te   (wuta / lau-mate)
      3R-FREQ-stamp   CORE   ground   penis-dead
     'S/he keeps on stamping on the ground / sea cucumbers.'

(8) *no-me-landa='e na (wuta / lau mate)

This prefix is perhaps an even better match than *mo-* as a reflex of *ma-*, in that it involves both valency reduction as well as stativity (of a sort), thus matching both senses reconstructed by E&R (though notably lacking the 'involuntary' or 'inchoative' senses that are found in languages of the Philippines—this meaning is conveyed with a separate morpheme, *te-*).

These two prefixes, *me-* and *mo-*, are clearly separate prefixes in modern Tukang Besi. Despite a ban on two identical prefixes appearing on the same verb, these two may be used together. The following sentences have been heard when talking about village soccer teams.

(9) No-mo-talo.   (10) No-me-mo-talo.
     3R-ANTICAUS-beat   3R-FREQ-ANTICAUS-beat
     'They have been beaten.'   'They always lose.'

We thus have two separate productive prefixes that correspond in form to the two most frequently occurring forms of the reflexes of *ma- that adjectives and nonagentive verbs take, as will be seen in 2.3. The possibility of there being some behavioral correspondence between the productivity of these prefixes and the "fossilized" forms found with adjectives is addressed in that section.

2.2 THE CLASS OF ADJECTIVES. We need to acknowledge that there is a class of adjectives in Tukang Besi, a word class separate from the larger class of verbs. The full argumentation concerning the validity of this division has been given elsewhere (Donohue 1999b), but can be summarized, as follows: although verbs and adjectives show similar behavior when they are used predicatively, we can identify different morphological patterns for verbs and adjectives when their role is referential or modificational: verbs need a subordinating affix, *-um-* or *(n)i-*, to function as the head of an NP or a modifier of a noun inside an NP (that is, inside an NP they must appear in a relative clause, headless or headed), whereas adjectives do not, showing direct modification of the head noun (Donohue 1999a:91–95).

Other morphosyntactic tests that distinguish verbs from adjectives only apply for subsets of the adjectives, or subsets of the verbs. Some confusion about the distinction between these two classes is to be expected because there is no dedicated morphology that applies either solely to adjectives, or exists solely to derive adjectives. The fact that adjectives may appear with all of the derivational possibilities of verbs when they appear as the head of a verb phrase, and that they appear with the morphosyntax of nouns when they are the head of a noun phrase, means that they are in effect a disguised word class. Although distinct, adjectives have no syntactic structure or morphological uniqueness to define them, and must appear parasitically in a nominal or verbal structural position depending on the function of the adjective.

While we shall not examine this in great detail in this article, because it has already been discussed elsewhere (Donohue 1999a:chap. 4, where the many subdivisions of verb types are presented, and 1999b), one point of resemblance between verbs and adjectives is highly relevant, because it bears on one of E&R's main defining points when examining Proto-Oceanic *ma-. A large number of adjectives in Tukang Besi do not conform to the typical disyllabic pattern for roots that holds for most nonanimal nouns and for most simple verbs.[5] Rather, they display the following structure:

(11) Majority phonotactic structure for adjectives in Tukang Besi
        {*ma-* / *me-* / *mo-*} σ_2 σ_3

That is, most adjectives can be described as displaying a disyllabic root, in many cases reflexes of Proto-Austronesian forms attested elsewhere, preceded by *mV-*. I shall not attempt to posit semantic divisions between those adjectives that have reflexes of *ma- and those that do not, partly because there are homosemous pairs in which one member reflects *ma- and the other does not. Examples of such pairs are *to'oge* 'big'

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5. Animal names are frequently formed from a disyllabic root preceded by *ka-/ko-/'a-/'o-*, reflecting *ka-*, and showing variable application of the antepenultimate vowel rule (2.3), as well as variable treatment of the **k*. See Blust (1969).

and *moboha* 'big, great, heavy', *kapo* and *mobila* 'full (of stomach)', *leluma* and *marombu* 'dirty'.[6] Additionally, a number of nonagentive monovalent verbs show similar meanings to some attested adjectives, such as *ambanga* 'embarrassed', a verb that has a near-identical meaning to *mo'ini* 'be embarrassed', an adjective. Turning away from possible semantic classing, we are faced with the phonological shape of the prefix. Clearly the basis of the alternation in the vowels needs discussion.

2.3 THE SHAPE OF *ma- IN TUKANG BESI. What are the sources of the variation that we can observe in the vowel quality of the prefixes putatively reflecting *ma- in Tukang Besi? First, the different vowels are not found with an even distribution (ideally, one third each *ma-, me-,* and *mo-*). Rather, the relative frequency favors *mo-*: fully 67 percent of tokens involve *mo-*, with 19 percent given to *me-* and only 12 percent show *ma-* (the remaining two percent are the rare and somewhat suspicious tokens of *mu-*; see the appendix).

In part we can explain the more frequently appearing forms as following the patterns established by synchronically productive morphemes. The presence of a productive prefix with a similar shape might be likely to attract allomorphs of another morpheme with a similar set of meanings to its own form. This is unlikely to be sufficient to completely explain the skewing. Historically there has been a split in the reflexes of this morpheme, which van den Berg (1991b) suggests, probably correctly, was originally based on a process of partial vowel harmony in the Celebic languages, based on the vowel found in the first syllable of the root (such systems are still productive in Tomini-Tolitoli languages). This process altered the shape of the prefix according to the following schema.

(12) *ma-* →   *me-* / Ci σ (σ), Ce σ (σ)
       →   *mo-* / Cu σ (σ), Co σ (σ)
       →   *ma-* / Ca σ (σ)

It is certainly likely that an archaic vowel harmony is partially responsible for the changed form of *ma-, as E&R suggest, and similar vowel harmony processes are still productive in some languages of Sulawesi. This is not, however, the full story; we must also take account of the regular antepenultimate syllable weakening process in languages of Southeast Sulawesi. Under this account, antepenultimate syllables, which appear before the penultimate (stressed) position, are reduced to a schwa, which is followed by the application of a regular *ə > *o* rule, widely attested in both Tukang Besi and other languages of Southeast Sulawesi (van den Berg 1991a, Mead 1998). This model accounts for the great frequency of *o* in prefixes, where it occurs in fully two thirds of all prefixal vowels, the highest frequency of any of the five vowels in this position. This is striking, when compared to its relatively infrequent appearance elsewhere (it accounts for one-sixth of vowel occurrences in roots, being less frequent than *a, e,* or *u,* with only *i* less common). The fact that prefixes are almost invariably attached to disyllabic roots, and so are in an unstressed position, means that we would expect a greater frequency of *o* vowels in morphemes that are prefixal.

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6. Homonyms in which both members reflect *ma- are also found, such as *merimba ~ menti'i* 'fast', or *medumpu ~ mopera* 'short'.

In modern Tukang Besi, the vocalic conditioning factors do not play a strong role in determining the quality of the vowel in the *m*V- prefix. The most commonly occurring vowel is *o-*, and there are also three instances of what appear to be *mu-* prefixes on lexical items. Examples of these different vowels in the *m*V- prefix with roots showing different vowels in their first syllables are given in table 1, which clearly shows that there are few absolute restrictions regarding vowel quality in adjacent syllables.

The only correlation between the vowel in the historical prefix and the vowel in the following syllable is statistical: *me-* occurs with the front vowels more frequently than the back vowels, in approximately 60 percent of cases of *me-*. Similarly, *mo-* is found in the same 60 percent ratio with a preference to back vowels over front vowels. In all cases, however, an *a* in the following syllable is the most frequent case, reflecting the frequency of this vowel generally (40 percent of all vowel tokens in Tukang Besi are *a*). Reasons for this distribution will be discussed below, but we should point out that the balance between *ma-* and *me-* has also been affected by the collapse of Proto-Austronesian *ai* sequences to *e*, a regular sound change in Tukang Besi. Thus, for instance, *meha* 'red', is derived from Proto-Austronesian *ma-iRaq, through regular sound changes, including *ai/ay > *e*.[7]

There are a few items that show variation in the vowel in the first syllable; words such as *metuku ~ motuku* 'strong', and *malobu ~ molobu* show that the vowel harmony system cannot be an absolute conditioning factor of prefixal vowel quality. On the other hand, at least one minimal pair can be found, utilizing these contrasts in what is presumably the same root: *malino* 'lonely' and *molino* 'quiet' are too similar semantically for us not to suspect a common origin in *lino, which has been morphophonologically distinguished when two prefixes became available. Must we, at this stage, recognize separate functions for *ma-* and *mo-*? Other affixes that have developed from single morphemes do show a split in distribution indicating the genesis of separate, semantically distinct, morphemes. The widespread Austronesian suffix *-i* 'locative involvement', appears to preserve final consonants in Tukang Besi that are otherwise lost: *sepak 'kick' is *sepa*, but when suffixed emerges as *sepaki* with the final consonant preserved, and *Dateŋ 'come' is *rato*, which when suffixed appears as *ratomi* (there is no *-ŋi* in affixation; compare *tulumi* 'help' < Malay *tolong*). There are, however, too many instances of semantic classes organized by the consonant of the suffix, and too many instances of verb roots appearing, with different meanings, in more than one of these classes, for us to ignore the effects of historical change (Donohue 1999a:242–44).

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7. The application of this sound change across a morpheme boundary is also found in the requestive prefix *hepe-* 'ask that something be done', which probably reflects an earlier morpheme sequence *ha-pa-i(n)-. The last two morphemes are the causative and P-relative clause markers, respectively, the last of which is clearly related to the *-in P voice marker of many other Philippine-type languages. This analysis would explain why of all the causative constructions in the language, the causand, and not the causee, is treated as the P of the derived verb when the prefix is *hepe-* (Donohue 199a:217–19). It also indicates that the ban on causative having scope over a passive(-like) derivation (see section 7) did not always apply. In my (hybrid) variety of English I do not allow causatives of passives, but have seen them in historical documents ('he had toilets be constructed'), to my not inconsiderable amazement. This de-diphthongization might also be a source of *te-* (?< *ta- + *i[n]-), which is a passive that expresses a greater degree of spontaneity than does the more frequently occurring passive *to-*. If so, we must posit a great degree of bleaching on the part of the *-in morpheme, which is evidenced by its nonappearance as a main-clause voice marker in Tukang Besi (Donohue 2002).

2.4 THE MORPHOLOGY OF THE OTHER ADJECTIVES. Not all adjectives display reflexes of *ma-. A number of adjective roots do not show any prefix-like material that can be related to any synchronically productive prefixes. The set of these adjectives includes the lexemes given in table 2. Of these, two are suspected loans from Malay; ten out of the remaining 23 items are disyllabic, with four of the remainder (mostly negative in connotation) showing a possible fossilized *kV-, three (all positive) showing a possible *lV- prefix, and two items being transparent reduplicants of no-longer freely occurring disyllabic roots, *bo'u and *ki'i.

A number of other adjectives and nonagentive verbs appear with three syllables, all beginning with an initial *t*V-, and with similar semantic ranges to the senses we would expect for *ma-affixed adjectives (see table 3). Just as in the case with *ma-, where the most frequent prefixal form corresponds to the contemporary productive prefix *mo-*, so, too, is there a productive prefix *to-* 'passive' that matches the appearance of a large number of apparently (synchronically) monomorphemic roots with three syllables. The majority of these forms are not adjectives, but verbs, and the putative derivations with *to-* are not so semantically similar to the productive use of *to-* as a regular voice marker.

TABLE 1. ADJECTIVES AND VERBS
WITH DIFFERENT FOSSILIZED PREFIXES

V in σ_2:

PREFIX	a	e	i	o	u
ma-	mandawulu 'beautiful'	mameko 'sweet'	malino 'lonely'	malobu 'straight'	malute 'weak'
me-	mendaro 'deep'	mele 'happy'	merimba 'quick'	—	medumpu 'short'
mo-	mowangi 'fragrant'	mopera 'short'	monini 'cold'	mokobo 'thick'	mohute 'white'
mu-	—	—	—	—	muluru 'loose footing'

TABLE 2. ADJECTIVES WITHOUT *m*V- OR *to-* IN TUKANG BESI

bantu	'blunt'	kilua	'orphan with only one parent dead'
biru	'black' (? < Malay *biru* 'blue')	kombeo	'unusual, nonconformist, mad, insane'
bo'ubo'u	'small'	koruo	'many, much'
hawaa	'angry'	lalesa	'wide, spacious'
hawasaa	'angry'	leama	'good'
hele	'other, different'	leluma	'dirty'
kabongo	'deaf'	lewunse	'fragrant, nice smelling'
kalu	'tired (physically)'	pe'i	'stupid'
kana	'suitable, right'	pono	'full'
kandala	'blind'	rengka	'dry (as a result of being dried out)'
kapo	'full (stomach)'	songko	'narrow, cramped'
kengku	'cold (of water)'	misikini	'orphan without both parents' (< Malay *miskin* 'poor')
ki'iki'i	'small'		

One adjective in the list of table 3 matches almost completely the meaning of another adjective, one that is formed with *ma-: *to'oge* 'big' is largely synonymous with *moboha* 'big, great'. This is probably accidental.

2.5 THE OTHER *mo-*. In addition to there being different reflexes of *ma- in Tukang Besi, there also appear to be different sources of *mo-* as a prefix. The anti-causative and adjectival *mo-* prefixes share a similar range of meanings, both with each other and within each sense, but there is one (admittedly semantically peculiar) verb that also has a productive prefix of the form *mo-*, yet with none of the associated semantics that are found with the forms discussed so far.

With the verb *ha'a* 'be doing how', we find the following monovalent uses:

(13)   'U-ha'a=mo?
      2SG.R-why/how=PF
      'How are you doing?'(common greeting)

(14)   No-ha'a   i   wunua?
      3R-why/how   OBL house
      'What's she doing in the house?'

There is also a derived usage, with *mo-*, as in (15).

(15)   'U-mo-ha'a=ke=mo?
      2SG.R-??-why/how=3P=PF
      'What are you doing to her?'

None of the semantic parameters of the anticausative presented in 2.1 are associated with this appearance of a *mo-* prefix, which shows an increase in valency rather than a decrease. How can this be explained?

There is a productive alternation that produces a prefix of the shape [mo] in Tukang Besi, as shown in (16)–(17) below. The first sentence presents the basic underived verb, while the second shows the use of *hoN-* 'purposeful verbalizer' with it, deriving a bivalent verb (Donohue 1996a, 1999a: 287–89, forthcoming).

TABLE 3. LEXEMES THAT MIGHT DISPLAY A REFLEX OF THE PREFIX *təR-*

WORD	CLASS	GLOSS	COMMENTS
tita'i	verb	'defecate'	*ti-* plus *ta'i* 'faeces'
to'oge	adj.	'big'	*oge* is found as the root for 'big' in other languages of Buton, for example, Wolio *maoge*
to'oko	verb	'sleep face down'	*'oko* 'hide'
tokabi	verb	'lost'	*kabi* 'throw away'
tolaki	verb	'be late'	
tolida	n. / v.	'cousin'	
tolua	verb	'vomit' (Tomea and Binongko only)	Wanci has *wolua* 'spring (where water issues out of the sand)', showing a reflex of PAN *bəR-/məR- as well as a plausible cognate with *(to)lua*, and *lua* 'issue of speech'
torae	verb	'place, put, leave on'	

(16) No-makanu=mo.   (17) No-ho-makanu=’e=mo.
     3R-get.ready=PF   3R-VRB-get.ready=3P=PF
     ‘S/he’s ready.’   ‘S/he’s got them ready.’

If we wish to express an irrealis, intended aspect on the verb, then a form using the irrealis set of pronouns, as well as the ‘S/A infix’ *<um>*, is used. The infix usually appears infixed into the first syllable following the S,A prefixes, but when that syllable begins with *h* or *w* the infix is "absorbed" into the onset (additional exceptions, both lexical and phonological, are listed in Donohue 1999a:38–41). Examples of this absorption with nonprefixal *h* and *w* are given in (19) and (20).

(18) Na-[mo]-makanu=’e=mo.
     na-hoN<um>-makanu=’e=mo
     3I-VRB<SI>-get.ready=3P=PF
     ‘S/he’ll get them ready.’

(19) a. No-hopu=’e.   b. Na-<m>opu=’e.
        no-hopu=’e   na-hopu<um>=’e
        3R-blow=3P   3I-blow<SI>=3P
        ‘S/he blew at it.’   ‘S/he will blow at it.’

(20) a. No-waliako=mo.   b. Na-<m>aliako=mo.
        no-waliako=mo   na-waliako<um>=mo
        3R-return=PF   3I-return<SI>=PF
        ‘S/he came back.’   ‘S/he’s just about to come back.’

With *moha’a*, however, there is no longer any association of the *mo-* with intentionality, and no association of its occurrence with the irrealis prefixes. The bimorphemic account of its origin must remain speculative, but it would not be unrealistic to posit an irregular development in morphology just where we find it occurring with a semantically very atypical, and yet very frequent, verb.

2.6 THE OTHER *me-*. Another possible reflex of *ma-* in Tukang Besi, with the form *me-*, exists in the demonstrative system. The regular set of distinctions in the language involves *ana* ‘this, here, now’, *atu* ‘that (close), there (near you), recently/soon’, and *iso* ‘that/yon, (over) there, prior/later’. There are additionally two elevationally specific demonstrative forms, *ito* ‘that (higher)’ and *iwo* ‘that (lower)’.

There are also two sets of demonstratives that can be thought of as being regularly derived from these forms. The first of these sets, which I shall refer to as the presentative, involves prefixation with the otherwise unattested prefix *ka-*, as well as third person P-agreement enclitics being added, as can be seen in (21) and (22). In derived forms the distal demonstrative appears as *aso*, not *iso*.

(21) Ka-ana’e na   loka.   (22) Ka-aso’e na   wunua=no.
     PRES-this   NOM banana   PRES-yon NOM house=3GEN
     ‘Here’s a banana.’   ‘There’s her house over there.’

The second possible derivation also involves encliticization, but the prefix is *me-*. This set, which I refer to as the referential demonstratives, are not so strictly spatial in

their deixis, but are used more to refer to different referents in a stretch of discourse, or to refer to invisible entities. Some textual examples can be seen in (23) and (24).

(23) "Mbea'e na ngaa me-atu'e di ana."
     not.exist NOM name REF-that OBL here
     'There's no one of that name here.'

(24) Toka bisa no-tu'o=ke (a)wana 'umpa, te kau me-aso'e
     but allow 3R-chop=3P manner Q CORE tree REF-yon
     ai mbeaka no-hama='e na la'a=no.
     ANA not 3R-scratch=3P NOM just=3GEN
     'But no matter how much he tried chopping it, that tree wasn't scratched one little bit.'

One extremely common use of a member of this set is in the normal expression for 'now', which uses the referential form of *ana* 'this'. The relation between a more concrete, at least potentially spatially referent *ana*, and the very referentially abstract (compared to the concreteness of objective nouns) temporal use here follow the same pattern that has already been seen with *me-* attaching to *atu* and *aso*.

(25) Ara i [bula(n)]=n(u)=dua awana meana'e ai, ane ke po'o,
     if OBL month=GEN=two manner REF-now ANA exist and mango
     ke kaubarasa, nangka, ndanga, ke ane=h(o) o-koruo=do 'uka.
     and custard.apple jackfruit jackfruit and exist=yet 3R-many=EMPH again
     'In February like it is now, there are mangoes, custard apples, *nangka,* jackfruit, and lots more besides.' (*Nangka* is a loan word from Malay, in common use in western Wanci, at least.)

The semantics associated with this use of *me-* do not seem to be incompatible with those posited for the stative prefixes, and it is tempting to assume a *ma- origin for this derivation, though it has acquired a distinct sense, perhaps associated with the distinct word class that it appears with, members of which are less objectively anchored in the world. The two demonstratives that do have some strict real-world semantic reference, *ito* 'that (higher)' and *iwo* 'that (lower)' are also the demonstratives least frequently heard with *me-*.

2.7 THE REFLEXES OF *ma-. To summarize, the following possible reflexes of *ma- are found in Tukang Besi:

     ma- prefix on adjectives
     me- frequentive prefix
           referential prefix on demonstratives
           prefix on adjectives
     mo- anticausative prefix
           prefix on adjectives
           (valency increasing prefix on *ha'a* 'do what')

The validity and robustness of use of the notion of productivity as a dimension for classifying these different reflexes is taken up in the following section, where we shall see that an unproductive morpheme may well take on many appearances that we should normally associate with productivity.

3. PRODUCTIVITY. E&R frequently refer to productivity in their account of Proto-Oceanic *ma-: "In no language does the reflex of *ma- seem to be a fully productive morpheme" is just one example of their reference to this concept. But what does it mean for a morpheme to be productive? This is not a rhetorical question, but is one that morphologists grapple with (see Aronoff and Anshen 1998 for the issues involved).

It is difficult (for me, at any rate) to succinctly describe what is meant by the term "productive" in linguistics, so I shall start with its opposite. To describe a morpheme as being nonproductive implies that there are exceptions to its application that must be specified lexically; that is, the exceptions are not predictable by reference to any of the other ingredients that the grammar makes reference to, be they phonological, morphological, syntactic, or semantic. (This begs the question of the delimitation of a morpheme, and the kind of scope that is associated with productive and nonproductive morphemes.)

It is possible for a piece of derivational or inflectional morphology to be (highly) syntactically or semantically restricted, and yet be fully productive. The conative in English is an example of one such productive construction, which is nevertheless highly restricted in its range. There is only a small number of verbs that show the alternation seen in *hit (something)* versus *hit at (something)*, yet within that set the alternation is regular. Furthermore, we can productively introduce nonce verbs of violence into the language, and expect this alternation (*wap* is a nonstandard verb of violence that I have observed with this alternation in use among energetic English-speaking 4–6-year-olds). Within Tukang Besi we can note the extremely productive voice alternation monitored by the presence or absence of P agreement enclitics on the verb (Donohue 1999a:158–66, 469–74; Donohue and Maclachlan 2000), an alternation that is nevertheless not found with a small number of roots (Donohue 1998). The other end of the spectrum is the prefix *ban-*, which, when applied to a mid-limb joint of the body, derives a verb with the sense 'smash with'. Because there are only two joints that can be used violently (*siku* 'elbow' and *tu'u* 'knee', deriving *bansiku* 'smash with elbow', and *bantu'u* 'smash with knee') this prefix has an extremely limited distribution. Should it be considered, productive, or is it merely a lexical accident that it appears with these two, and no other, body parts? Other body parts, or configurations of body parts, can be used verbally with no overt derivation: *busu* 'fist, punch', *peku* 'back of knuckles, backfist strike', *pepe* 'inside palm+fingers, slap hard', and so forth. These roots allow derivation, such as *hombusu* 'punch to knock down', *hebusu* 'punch ineffectually', but only *siku* 'elbow' and *tu'u* 'knee' require derivation, either with *ban-* or, less destructively, with *he-*: *hesiku* 'elbow (something)', and so forth. The fact that these are exactly the same groupings as are found in English (which permits *knee* [noun, verb], but not [violently] *hand* [verb], *head* [verb], etc.), while representing the opposite treatment, seems beyond accident.

I contend that as long as the range of a morpheme or construction does not have to be specified in the lexicon, then it should be considered productive. On the other hand, when there are no grammatical "tools" that allow us to describe a morphosyntactic phenomenon other than to stipulate, then we must consider it to be unproductive.

These arguments apply to the notion of "fossilized" morphology as well. It is possible for a morpheme to be fossilized on to a root, and yet not in all cases be obligatorily bound to it. That is, there are cases in which an apparently fossilized (and so not con-

sidered productive) morpheme is not found with the root to which it is has become bound. In the following sections we shall see cases in which morphemes that appear to be fossilized show varying degrees of productivity. The clearly identifiable *m*V- prefix on adjectives has all the hallmarks of being a fossilized morpheme, yet given the right (less common) discourse functions, and in some minor constructions, the (historical) root can appear without the fossil. Furthermore, we find evidence that not all of the phonologically distinct reflexes of *ma- are treated as equally fossilized.

3.1 CONSTRAINTS ON DERIVATION. There is a constraint on valency changing operations in Tukang Besi that mirrors one found in most languages of the world. While roots may show valency increase, and subsequently be reduced by further derivation, they may not show decrease, and then be increased.[8] This can be seen in the interpretation of the following sentence, in which the scope of the passive must be taken as being over the whole verb+applicative derivation, and not over the verb root alone (Donohue 1997; 1999a: chap. 10, also 297–98; 2001).

(26) Ku-balu=ako='e   na   ina=su   te   pandola.
     1SG-buy=APPL=3P   NOM   mother=1SG.GEN CORE   eggplant
     'I bought eggplants for my mother.'

(27) No-to-balu=ako=mo na   ina=su   te   pandola.
     3R-PASS-buy=APPL=PF   NOM   mother=1SG.GEN CORE   eggplant
     'My mother was bought some eggplants.'

(28) *no-to-balu=ako=mo na   pandola   te   ina=su
      3R-PASS-buy=APPL=PF NOM   eggplant   CORE   mother=1SG.GEN
     'Some eggplants were bought for my mother.'

(29) DERIVATION OF (27) AND (28)
     to-balu=ako   [$_{PASS}$ to- [[$_{VERB}$ balu] $_{APPL}$ =ako]]
                     'have (something) bought for self'

     to-balu=ako   *[[$_{PASS}$ to- [$_{VERB}$ balu]]] $_{APPL}$ =ako]
                     *'be bought for (someone)'

These restrictions apply equally to multiple derivations involving two prefixes, where constraints on affix order make the scope transparent, as seen in the following sentences.

(30) Ku-pa-balu='e   na   ina=su   te   pandola.
     1SG-CAUS-buy=3P   NOM   mother=1SG.GEN CORE   eggplant
     'I had my mother buy eggplants.'

(31) No-to-pa-balu=mo   na   ina=su   te   pandola.
     3R-PASS-CAUS-buy=PF   NOM   mother=1SG.GEN CORE   eggplant
     'My mother was made to buy eggplants.'

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8. The sole exception to this involves reciprocals, which may appear causativized: *No-pa-po-sepa='e na mo'ane*. 3R-CAUS-REC-kick=3P NOM man 'He made the men kick each other.' The particular semantics of the reciprocal construction mean that the two arguments are not reduced, nor is one removed, but rather both are combined, with the resulting subject remaining agentive. It might be that this is what licenses the subsequent causativization.

(32) * ku-pa-to-balu=mo
      1SG-CAUS-PASS-buy=PF
      'I had (them) be bought.'

These examples make it clear that, again, valence-reducing morphology may only apply after valence-increasing morphology has been applied, and not the other way round.

(33) DERIVATION OF (31) AND (32)
      to-pa-balu   [PASS to- [CAUS pa- [VERB balu]]]
                        'be made to buy'

      pa-to-balu   *[CAUS pa- [PASS to- [VERB balu]]]
                        *'make be bought'

Similarly, the anticausative may appear outside the causative when they are both found on the same verb root, but the reverse is not true. A verb cannot have an anti-causative applied, decreasing valency, and the resulting stem cannot then be further derived with a causative. This is shown in the ungrammaticality of (38):

(34) Ku-'angka='e.   (35) No-mo-'angka.
      1SG-forbid=3P   3R-ANTICAUS-forbid
      'I forbade it.'   'It is forbidden.'

(36) Ku-pa-'angka='e.   (37) No-mo-pa-'angka.
      1SG-CAUS-forbid=3P   3R-ANTICAUS-CAUS-forbid
      'I made them forbid (it).'   'They have been made to forbid it.'

(38) *ku-pa-mo-'angka
      3R-CAUS-ANTICAUS-forbid
      'I made (it) be forbidden.'

When we examine the behavior of the adjectival reflexes of *ma- (and *ta-), we find that they are fully eligible to appear inside the scope of causation, and do not count as a passive or anticausative derivation to the verb, which may be marked separately.

	ma- ADJECTIVE	*me-* ADJECTIVE	*mo-* ADJECTIVE
PLAIN	Ku-ma'eka. 1SG-afraid 'I'm afraid.'	Ku-mebuku. 1SG-strong 'I'm strong.'	Ku-mobila. 1SG-full 'I'm full (from eating).'
CAUSATIVE	No-pa-ma'eka=aku. 3R-CAUS-afraid=1SG.P 'They made me afraid.'	No-pa-mebuku=aku. 3R-CAUS-strong=1SG.P 'They strengthened me.'	No-pa-mobila=aku. 3R-CAUS-full=1SG.P 'They made me full.'
PASSIVE + CAUSATIVE	Ku-to-pa-ma'eka=mo. 1SG-PASS-CAUS-afraid=PF 'I have been made afraid .'	Ku-to-pa-mebuku=mo. 1SG-PASS-CAUS-strong=PF 'I have been strengthened.'	Ku-to-pa-mobila=mo. 1SG-PASS-CAUS-full=PF 'I have been made full .'

The crucial test of whether the adjectival *mo-* (as well as *me-* and *ma-*) and the anticausative *mo-* have the same identity synchronically is whether they can appear on the same root. We would not expect a monovalent adjective to appear with the anticausative prefix unless it has first increased in valency, so the following combinations show a causative and anticausative together. In all cases the anticausative retains the shape *mo-*, regardless of the root to which it attaches, and in all cases the reflex of *ma-* is still obligatory on the adjectival root.

ANTICAUSATIVE + CAUSATIVE COMBINATIONS WITH A *ma-* ADJECTIVE

(39) Ku-mo-pa-ma'eka=mo.
      ISG-ANTICAUS-CAUS-afraid=PF
      'I am in a state of having been made afraid .'

(40) *ku-ma-pa-(ma)'eka=mo

ANTICAUSATIVE + CAUSATIVE COMBINATIONS WITH A *me-* ADJECTIVE

(41) Ku-mo-pa-mebuku=mo.
      ISG-ANTICAUS-CAUS-strong=PF
      'I am in a state of having been strengthened .'

(42) *ku-me-pa-(me)buku=mo

ANTICAUSATIVE + CAUSATIVE COMBINATIONS WITH A *mo-* ADJECTIVE

(43) Ku-mo-pa-mobila=mo.
      ISG-ANTICAUS-CAUS-full=PF
      'I am in a state of having been made full .'

(44) *ku-mo-pa-bila=mo

Similarly, adjectives beginning with a reflex of *təR-, or with no apparent prefixation, may also be causativized or appear with further passive derivation.

(45) a. No-pa-to'oge='e.   b. No-to-pa-to'oge=mo.
         3R-CAUS-big=3P   3R-PASS-CAUS-big=PF
         'They enlarged it.'   'It has been enlarged.'

(46) a. No-pa-kana='e.   b. No-to-pa-kana=mo.
         3R-CAUS-suitable=3P   3R-PASS-CAUS-suitable=PF
         'They made it just right.'   'It has been made just right.'

The data in this section are a clear indication that the reflexes of *ma- that are found on adjectives should be considered fossilized relics, and not synchronically productive morphemes analogous to the anticausative *mo-*. This is hardly surprising, but is a necessary backdrop to the presentation of the next two sections.

3.2 BEHAVIOR OF *ma- UNDER REDUPLICATION. Reduplication of verbs or adjectives in Tukang Besi shows the extension of an action over time, or is used to emphasize a noncanonical aspect of the predicate (Donohue 1999a:42). Reduplication never applies to the prefix marking the S or A on a verb. Thus, from the unreduplicated (47a), with a simple verb, (47b) is a grammatical reduplicated form, and (47c) is not, because it includes the inflectional prefix. (47d) is ungrammatical because the reduplicant is not the first two syllables of the post-inflectional unit, but skips a syllable, *he-*.

(47) a. No-helo'a.   b. No-helo-helo'a.
         3R-cook   3R-RED-cook
         'They are cooking.'   'They've been cooking for a while.'

      c. *nohe-no-helo'a   d. *no-helo'a-lo'a
         RED-3R-cook   3R-cook-RED

More details can be found in Donohue (1999a:42, 298–301), but informally we can characterize the reduplication as applying to the first two syllables after the S/A prefix, as seen in (48).

REDUPLICATION TEMPLATE:
(48) Pref-σ_1 σ_2 (σ_3…)   →   Pref-σ_1 σ_2 σ_1 σ_2 (σ_3…)

There are complications when reduplication occurs with adjectives. There are no irregularities with adjectives that do not exhibit either *ma-, me-,* or *mo-,* so that adjectives such as *kengku* 'cold', *kombeo* 'mad, nonconformist', or *lalesa* 'spacious' follow the "normal" reduplication pattern. Adjectives that are only two syllables long (such as *meha*, 'red', or *muntu* 'sweet') are also regular, with the first two noninflectional syllables showing reduplication. The behavior of a trisyllabic root without any reflex of **ma-* is shown below, illustrated with *to'oge* 'big', where we can see that reduplication targets the first two syllables in the root.

(49) a. No-to'oge.   b. No-to'o-to'oge.
        3R-big   3R-RED-big
        'She's big.'   'She's rather big.'
     c. *no-to-'oge-'oge

Turning to those roots that appear with some reflex of **ma-*, we find that when the adjective begins with *ma-*, the same rules apply as have already been described for adjectives with *to-*. With *ma-* adjectives, the first syllable after the supposed prefix is combined with the *ma-* to form a two-syllable reduplicating base. The alternative, in which the historical prefix does not count for reduplication purposes and the remaining two syllables of the adjective are reduplicated (as in [50c]), is not grammatical.

(50) a. No-mameko.   b. No-mame-mameko.
        3R-sweet   3R-RED-sweet
        'It's sweet.'   'It's quite sweet.'
     c. *no-mameko-meko

When the adjective begins with *me-,* there are two possible reduplicated forms of the verb, one that behaves just as the forms that we have already seen, and another that appears to bypass the *me-* syllable, and applies the reduplication template to the historical root alone.

(51) a. No-medumpu.   b. No-medu-medumpu
        3R-short   3R-RED-short
        'She's short.'   'She's rather short.'
     c. No-me-dumpu-dumpu.

When the adjective begins with *mo-*, there is only one possible reduplicated form of the verb, that which does not include *mo-* in the reduplicant.

(52) a. No-mopera.   b. *no-mope-mopera
        3R-short
        'She's short.'

c. No-mo-pera-pera.
3R-RED-short
'She's rather short.'

We may summarize the behavior of the morphologically different types of adjectives as follows, with the ( )² notation indicating the reduplicated portion of the word:

NONADJECTIVE, UNPREFIXED ADJECTIVE, *ma*-PREFIXED ADJECTIVE

(50') Pref-$(\sigma_1\ \sigma_2)^2\ \sigma_3$

me-PREFIXED ADJECTIVE

(51') Pref-$(\sigma_1\ \sigma_2)^2\ \sigma_3$ OR   Pref-$\sigma_1\ (\sigma_2\ \sigma_3)^2$

mo-PREFIXED ADJECTIVE

(52') Pref-$\sigma_1\ (\sigma_2\ \sigma_3)^2$

To provide a comparison, derivationally prefixed verbs show a reduplication pattern that excludes the productive prefix:

(53) a. No-pa-nangu='e.   b. *no-pana-panangu='e
3R-CAUS-swim=3P
'S/he made them swim.'

c. No-pa-nangu-nangu='e.
3R-RED-CAUS-swim=3P
'S/he made them swim a bit.'[9]

This clearly matches the *mo-* adjective prefix pattern. Because we have already seen that the reduplication template can skip over inflectional prefixes such as are represented by the S/A inflection, the data on variable behavior for the adjectives with reflexes of *ma-* indicates that the *mo-* prefix is the least strongly bound to the root, and that *ma-* is the most strongly bound. In other words, *mo-* behaves the most like a separable prefix, while *ma-* does not show such behavior.

3.3 MINOR CONSTRUCTION TYPES AND *ma-. The preceding sections have presented good reasons for treating (at least some of the) "adjectival" occurrences of *ma-* reflexes in Tukang Besi as being fossilized. The data on reduplication were ambiguous, with some of the reflexes showing fossilized behavior, and some not, based on the phonological shape of the reflex. In this section, I present data that suggest that none of the adjectival reflexes of *ma-* other that *ma-* itself is completely fossilized.

The adjectives presented in the preceding sections have involved their being used in predicative functions. This is, cross-linguistically, the most common position for either adjectives or verbs to occur in, but are certainly not restricted to appearing in that function, though often appearing in an atypical discourse function forces a word class to adopt a particular construction or morphological derivation in order to be well formed.

The constructions examined here are nominalizations, the appearance in a nominal-like exclamatory clause, and the form taken when used with another causative derivation, that found when the factitive prefix is added (Donohue 1999a: 205–11,

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9. There is no morphological means of expressing 'She somewhat caused them to swim.'

219–23, 362). The data that emerge challenge the conclusions from section 3.1 even further, adding to the doubts raised in 3.2.

Table 4 shows the two ways in which adjectives can be nominalized, contrasting with the sole means of nominalizing a verb. Verbs may be nominalized only by appearing in headless relative clauses, marked by either the infix dedicated to an S/A head, *<um>*, or the prefix used for a P head, *i-/di-/ni-*.[10] In table 4 we can see the use of the S/A infix with the monovalent, nonagentive verb *kakanda* 'be blue'. This same strategy is also found with adjectives, in which case, as with verbs, the construction can only be interpreted as referring to a physical entity displaying an extreme example of the quality denoted by the adjective. (Unfortunately a regular morphophonemic rule obscures the application of the *<um>* infix on *m*-initial words, whether they are adjectives or verbs: the possible interpretation of *te <m>anga,* using the verb root *manga* 'eat', as 'the eating one', as well as 'the eating' [from *te manga*], shows that this is a genuine syncretism, and not simply the nonrealization of the affix on adjectival roots. Despite the phonological identity of the stem with and without the S/A-marking morpheme added, speakers have no trouble in semantically sorting paradigms of roots with and without the affix.) When the nominalization is formed without an affix, which is only possible for adjectives, and not verbs, then the reflex of *ma- shows variable behavior, being in some instances obligatorily retained, in others obligatorily omitted, depending on the form it takes on the adjective in question.

Table 5 shows us that the factitive prefix *hoko-*, when attached to adjectives, requires the same phonologically determined omission of reflexes of *ma- as was seen in unmarked nominalizations above. We can also see that verbs may not use the same exclamatory clause construction as do adjectives.[11] When adjectives appear with a following genitive clitic, they show a uniform pattern of not displaying any reflex of *ma- that normally appears with them, including the otherwise resilient *ma-* forms that were retained in nominalizations and factitive constructions.

TABLE 4. BEHAVIOR OF VERBS AND ADJECTIVES IN NOMINALIZATIONS

		NOMINALIZATION 1	NOMINALIZATION 2
VERB:	kakanda 'blue'	te k<um>akanda 'the blue one'	*te kanda / *te kakanda
ADJECTIVE:	kengku 'cold'	te k<um>engku 'the most cold one'	te kengku 'the coldness' ~ 'the cold one'
	ma'eka 'scared'	te <m>a'eka 'the most scared one'	te ma'eka 'the fright' ~ 'the scared one'
	melampa 'scarce'	te <m>elampa 'the most scarce one'	te melampa / te lampa 'the scarcity' ~ 'the scarce one'
	mowangi 'fragrant'	te <m>owangi 'the most fragrant one'	te wangi / *te mowangi 'the fragrance' ~ 'the fragrant one'

10. Unmarked relative clauses are also possible with some verbs, when the head is an instrument. See Donohue (1996b, 1999a:chap. 15).

11. A similar meaning can be rendered with *Awana 'umpa no-kakanda!* manner how 3R-blue 'It's so blue!'.

These data suggest that, rather than being fossilized, the prefixes we are dealing with are, in fact, productive stative prefixes. This is most clear when the reflex of *ma- takes the form *mo-* or *me-*, but there is also evidence that even the form *ma-* is not completely fused on to the roots that it occurs with. We have independently occurring prefixes with similar enough meanings to be consistent with this analysis, and also have evidence of their detachability. What problems would be encountered if we were to treat the adjectival formatives as separable prefixes as well?

3.4 PRODUCTIVE ADJECTIVALIZATION? There is further evidence that a not-entirely-fossilized analysis of *ma- in Tukang Besi is to be preferred. Table 6 presents a list of adjectives formed with *ma- that can be plausibly related to a noun(-like) root without *ma-. For these roots, at least, it seems that, even synchronically, the prefix must be considered to be productive (Donohue 1999a:536-48).

Table 6 is striking in its complete lack of adjectives with *ma-* prefixed; all the synchronically productive forms involve *me-* and *mo-*, just the two forms that we find to behave most suspiciously, from the point of view of an analysis that assumes that they are fossilized. Furthermore, the left half of table 6 includes only adjectives. There are no *ma- derived monovalent verbs that appear to show synchronically productive derivational behavior. We should emphasize that the syntactic tests that we have examined for adjectives in this section and in 3.2 are also behavioral patterns that apply to adjectives, not to nonagentive verbs with *ma- reflexes. Thus the reduplicated form of *mombaka* 'delicious' is *mombamombaka*, not *mombakambaka*; the nominal form is *te mombaka* 'the tastiness/the delicious one'; we can exclaim *Ke mombakano!* 'How deli-

TABLE 5. BEHAVIOR OF VERBS AND ADJECTIVES IN EXCLAMATORY CLAUSES, AND WITH FACTITIVE PREFIXES

		FACTITIVE	EXCLAMATORY
VERB:	kakanda 'blue'	No-hoko-kakanda='e. 'S/he made them all blue.'	*ke kakanda=no!
ADJECTIVE:	kengku 'cold'	No-hoko-kengku='e. 'S/he froze them.'	Ke kengku=no! 'How cold it is!'
	ma'eka 'scared'	No-hoko-ma'eka='e. 'S/he terrified them.'	Ke 'eka=no! 'How scary it is!'
	melampa 'scarce'	No-hoko-lampa='e. 'S/he made them vanishingly rare.'	Ke lampa=no! 'How scarce it is!'
	mowangi 'fragrant'	No-hoko-wangi='e. 'S/he made them smell wonderful.'	Ke wangi=no! 'How nice it smells!'

TABLE 6. ADJECTIVES WITH REFLEXES OF *ma- AND THEIR NOMINAL CORRESPONDENTS

mebuku	'strong'	buku	'bone'
mendaro	'deep'	laro	'inside'
metuko, motuko	'strong'	tuko	'pole used to support a ship when dry-docked for repairs'
mokado	'hot'	kado'oloo	'midday' (*'oloo* 'day')
molulungu	'slippery'	lumu	'moss'
molungu	'wet'		
mososoa	'sweat, be sweaty'	soa	'hot (of the sun); sweat'
motutu	'blunt'	tutu	'beat, pound (as of a blacksmith)'

cious!', not **ke mbakano;* and of a good cook say *Nohokomombaka'e* 'S/he made it really tasty', not **nohokombaka'e.* (Other nonagentive verbs with *ma-* and *me-* show identical behavior. See the appendix for a list of verbs and adjectives that might reflect **ma-*.) Clearly if we are to assume that there is some synchronic productivity in some of the reflexes of **ma-*, we must restrict this productivity not only to a phonologically random set, but a set that is also arbitrarily delimited into the word class adjective, as opposed to a subclass of verbs (if we accept the assumption by E&R concerning the development of adjectives in Western Malayo-Polynesian languages).

4. EXPERIENTIAL VERBS. E&R suppose that there is a separate class of experiential verbs, yet provide no evidence for this claim (this has been briefly discussed in sec. 1). In this section I shall present some arguments that support considering experiential verbs as a distinct class in Tukang Besi.

The following morphological traits characterize experiential verbs (Donohue 1996a, 1999a: 90–102, 482–85): (1) they cannot appear with the factitive prefix *hoko-*; (2) they may lose their S/A agreement prefixes in favor of a genitive clitic marking the experiencer; and (3) they cannot be the root of a passivized causativized verb, in the southern Wanci Lia-Mandati dialect (though this is allowed in the other Wanci dialects with which I am familiar).

These points are exemplified in the following examples. We have already seen the behavior of adjectives when prefixed with *hoko-*. Nonagentive verbs may also take *hoko-* prefixation, unless they are experiential verbs.[12] All monovalent verbs may appear with the general causativizer *pa-*.

		NONEXPERIENCER VERB		EXPERIENCER VERB
(54)	a.	No-pa-poso='e.	b.	No-pa-motondu='e.
		3R-CAUS-dizzy=3P		3R-CAUS-drown.at.sea=3P
		'They made her/him dizzy.'		'They made (her/him) drown.'

		NONEXPERIENCER VERB		EXPERIENCER VERB
(55)	a.	No-hoko-poso='e.	b.	* no-hoko-motondu='e
		3R-FACT-dizzy=3P		3R-FACT-drown.at.sea=3P
		'They made her/him (completely) dizzy.'		

The Lia-Mandati dialect has a restriction that a causativized nonexperiencer nonagentive verb may appear with its S as the head of a relative clause when passivized, but a similar construction based on an experiencer verb may not. The contrast is shown in (56a) and (56b).

		NONEXPERIENCER VERB			EXPERIENCER VERB	
(56)	a.	te	t\<um>o-pa-poso	b.	*te	t\<um>o-pa-motondu
		CORE	PASS\<SI>-CAUS-dizzy		CORE	PASS\<SI>-CAUS-drown.at.sea
		'the one who was made dizzy'			'the one who was made to drown'[13]	

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12. As expounded in Donohue (1996a), this creates a tripartite division of the monovalent verbs: agentive, nonagentive experiencer, and nonagentive nonexperiencer.

13. This may be grammatically expressed with a P-relative clause: *Te i-pa-motondu* CORE PP-CAUS-drown.at.sea 'the one who was made to drown at sea'.

This restriction does not apply to adjectives, even if they take experiential Ss, showing that this is a morphosyntactically delimited categorial distinction, and not simply a reflection of the semantic content of the lexical item. A grammatical relative clause with a passivized, causativized experiencer adjective is shown in (57).

(57) te   t<um>o-pa-moha'ato
      CORE   PASS<SI>-CAUS-itchy
      'the one who was made itchy'

Finally, human experiencers may be encoded on a verb or adjective by means of genitive enclitics, as an alternative to the use of the regular S,A prefixes.

ADJECTIVE
(58) a. No-monini na   mo'ane.   b. Nini=no   na   mo'ane.
        3R-cold   NOM   man   cold=3GEN   NOM   man
        'The man is cold.'   'The man is really cold.'

EXPERIENCER VERB
(59) a. No-mo'aro na   mo'ane.   b. Mo'aro=no   na   mo'ane.
        3R-hungry NOM   man   hungry=3GEN NOM   man
        'The man is hungry.'   'The man is really hungry.'

NONEXPERIENCER (NONAGENTIVE) VERB
(60) a. No-kandala na   mo'ane.   b. *kandala=no na   mo'ane
        3R-blind   NOM   man   blind=3GEN   NOM   man
        'The man is blind.'

There are clear reasons to regard experiencer verbs as a morphosyntactically distinct class in Tukang Besi. This has been discussed in Donohue (1996a, 1999a), but the relevance to the present discussion is that it provides some motivation for the experiencer verb class that E&R propose. There are, however, considerable mismatches in categories between what is attested in Tukang Besi and what E&R propose for Proto-Oceanic. They only list three verbs in their experiential verb class, and of these the Tukang Besi cognate for Proto-Oceanic *[ma]t[i,u]Du(R) 'sleep', *moturu*, is not treated in Tukang Besi as taking an experiencer argument, but a theme. It might be that the category that E&R label as "experiential" does not imply an experiencer argument, in the sense that the term is widely used. In Tukang Besi, the grouping includes bivalent verbs such as *monimpala* 'feel homesick; miss (someone)', a cognate of which in Proto-Oceanic would be an exception to E&R's listing of otherwise straightforward monovalent verbs being included in the class.

5. CONCLUSIONS: THE PRODUCTIVITY OF REFLEXES OF *ma- AND ITS IMPLICATIONS FOR PROTO-OCEANIC RECONSTRUCTION. The preceding discussion has shown that the argumentation provided by E&R in their discussion of *ma- falls short in three areas: (1) the notion of what constitutes fossilized morphology is not addressed with the detail that their account requires; (2) tied in to this, the notion of what counts as productivity exhibited by a morpheme is not explained in depth, although much of their presentation depends on this concept; and (3) the data from Tukang Besi are presented only superficially, thus losing access to

much data that might have been brought to bear on the questions about the status of the morpheme *ma- in Proto-Oceanic that they raise.

These points have been addressed, in increasing degrees of detail, in this article. We have seen that the notion of a morpheme being fossilized, in the sense that it is bound to a lexical form that is not attested in its absence does not preclude the affixless form from appearing in a particular construction. We have seen that adjectives reflecting *ma-, even when there is no independent root without that prefix, can appear, in certain constructions in the putative root form alone.[14] This offers a mechanism that might explain the irregular appearance and disappearance of *ma- on Proto-Oceanic lexemes as reconstructed by E&R: if *ma- was present on certain etyma in the language, and if there were discourse-function dependent conditions on its appearance, then that very variability would provide the basis for reinterpretation without the *ma- in some daughter languages, and with the reflex of *ma- in others, even after the variation vanished in the daughters, leaving an apparently unproductive syllable, a morpheme only historically. By any standards of the fossilized versus nonfossilized status of a morpheme, it is clear that the term fossilized cannot be applied to the adjectives that occur with a reflex of *ma-. We have seen that the productive morphemes *me-* and *mo-* are found, showing that this part of the putatively fused bimorphemic expression has not lost its productivity. Equally, we have seen that there are several constructions that, to varying degrees, allow or require an adjectival root to appear without the *m*V- 'prefix', showing that they cannot be considered completely fused to the *m*V- element. Clearly, "fossilized" is not a descriptor that can be applied to this construction. Where does this confusion come from? I believe that it is the fact that diachronically linguists speak of productive versus fossilized morphology, and synchronically morphologists speak of productive versus nonproductive morphology.

Which leads to the notion of productivity. At what stage can a morpheme be considered productive, and at what stage must it be considered unproductive? In English we have the pseudo-latinate prefixes, such as *con-*, *re-,* and *trans-*, which are not productive, and yet which do yield semantically consistent meanings when applied to various bases, and which occur on a fairly wide range of bases. On the other hand the conative occurs on only a small number of bases. Are the latinate prefixes any less productive than the conative? I would argue that they are, because there are no syntactic or semantic grounds for delimiting the scope of application of these pseudo-morphemes, while the conative, while not terribly wide-ranging across the lexicon, is semantically delimited (verbs of physical percussion or contact, and metaphorical extensions from these).[15] One major difference between the Oceanic reflexes of *ma- and those in Tukang Besi is that, unlike most Oceanic languages, there are fully productive reflexes of *ma- in Tukang Besi, in

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14. This is as if the bound root *cran-* in English were to appear without *-berry* (or another more recent host, such as apple in *cran-apple* [juice], etc.) in some particular environments. For instance, it is conceivable that, in the context of listing fruit-juice types, *cran* could appear on its own: #*"We've got orange, apple, orange and mango, raspberry, and cran-."* This is not grammatical in my variety of English, but I can easily imagine another variety of English in which it would be. (I assume that the modern use of *cran-* without *-berry* is a regular abbreviation that appears as part of mixed-juice names. We can see the same process in other (longer) fruit names such as *pine-orange* [< *pineapple-orange*]. These compounds can only refer to a mixed juice, not to a fruit salad. As such, the truncated form *cran,* referring only to the mass noun *juice,* cannot appear with inflectional morphology, such as marking plural with *-s:* **cran-s,* for instance.

the form of the anticausative and frequentive prefixes. It is true that this prefix cannot be applied to all verbs, just as, for instance, the passive in English cannot be used with one-place verbs. Not even all apparently bivalent verbs may appear in a passive construction. The relative animacy of the participants plays a major role in determining the acceptability of a passive construction (see DeLancey 1981), especially as we move away from the more prototypical primary transitive verbs and into low-affect, atelic predicates. This can be seen in the ungrammaticality of sentences such as *85 kilograms are weighed by me*, *over 100 grammars are had by me*, or even #*Bananas are always liked by me* (compare with the more acceptable *I have not been accepted by my peers*, where the more affected, and first person, subject, combined with a perfective aspect, makes the passive more felicitous). Nonetheless, the English passive is considered a productive piece of verbal morphosyntax, and so too should the Tukang Besi anticausative *mo-* be considered productive, albeit restricted to occurring only with verbs that are within its domain (high-transitive verbs only; see 2.1). The keystone of productivity is predictability, whether that is dependent on word class, or more detailed semantic specification within that word class. If the only conditions on the application of a morpheme are lexically based, then by definition that is not a productive morpheme, because the lexicon is the resting place of all irregularities and unpredictable facets of a language ("it contains only the lawless," as DiSciullo and Williams remarked). As an example of this, the adjectival suffix *-y* in English, when applied to verbs, is truly nonproductive: the class of words to which it can apply cannot be delimited on the basis of any known semantic or syntactic criteria (other than "class of verbs that can be adjectivalized with *-y*"), yet this morpheme cannot freely combine with just any verb: *bitey*, *scratchy*, but not *punchy*, or *eaty*. There is a wide class of words to which it applies, but there are no regular rules or restrictions that can delimit these words from any others.

How does this discussion allow us to strengthen E&R's argument? And how does this argumentation apply to the adjectival reflexes of *ma-? We have seen that their discussion of non-Oceanic Austronesian data refers to the concepts of productive and nonproductive uses of the *ma- morpheme when it appears as a marker of "stative (adjective) verbs / undergoer-subject (adjectival) verbs / undergoer-subject verbs / experiential verbs." We have seen that this is not such a simple decision to make, and that apparent nonproductivity in a majority of lexical items can be reversed in a minority of cases. Table 6 presents some lexemes in which the reflexes of *ma- appear to be functioning in a regular, productive, derivational manner; sections 3.2 and 3.3 show that the *ma- reflexes can in many cases be detached from the roots to which they are allegedly fossilized. The fact that this is the current situation in Tukang Besi allows us to posit a similar situation in Proto-Oceanic, a situation in which the language was moving away from a stage in which certain adjective/

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15. The ability to be applied to new words sees the latinate prefixes and the conative evenly matched: children's invented verbs of hitting are heard with the conative (see section 3), and cartoons regularly invent new words with latinate affixes, such as Bloom County's intentionally nonsensical *renoberation*. I have heard some arguments that *re-* can regularly apply to any and all verb roots (as long as they allow repetition) in North American varieties of English; whether this is so or not, it is not in my speech, where it is lexically restricted, and requires the notion of each successive iteration more fully accomplishing the predicate.

nonagentive verb–marking morphemes were fossilized in the Tukang Besi sense, to one in which they became inextricably bound into the root. This process was not predictable. The restriction on the bondedness of the morpheme lay in the lexicon, not in any morphosyntactic feature, and so can be considered irregular. But the fact that the form of the adjectival prefix was identical to that of a (productive, but highly restricted) anticausative or passive marker meant that there was some support for a reductionist analysis of at least some of the adjectival roots with *ma-, leading to the incomplete bonding of the adjectival *ma- with some roots. E&R (2001:288) refer to "an ongoing tendency for the prefix to become fossilized," but offer no explanation for why this should be so. Given the data that we have seen in section 3, the answer is clear: rather than the bonding of *ma- to various nonagentive lexical items being an erratic process that increased the irregularity of the grammar, it is a regularizing process. If the earlier (pre-Oceanic) system resembled the Tukang Besi one with regard to its treatment of lexical items with *ma-, allowing the *ma- to be omitted in certain low-frequency constructions, and yet not having undergone the (partly conditioned, partly unconditioned) phonological split (into three separate prefixes, *ma-, me-,* and *mo-* [see 2.2]), then any steps that removed the requirement to lexically specify each root as to the degree of bondedness of its prefix would be a regularization of the grammar, and so a natural step. The different degrees of productivity and fossilization of the reflexes of *ma- are shown in table 7.

There is clearly no one uniform pattern that applies to all the reflexes of *ma-, but rather a cline of behavioral tendencies. The fact that not all lexemes that could, on semantic grounds, fit into the class of words displaying *ma- do so, and that many do so inconsistently, shows that the change did not apply at once throughout the language (as with most historical processes). Rather, it moved (is moving?) through the lexicon, at different rates and by different routes in various languages.

The idea that there are in fact two lexically distinct classes affixed with *ma-, both an adjectival class and a set of nondynamic verbs, might also be a partial explanation for the variable appearance of *ma- in Oceanic languages (including Proto-Oceanic). Not only are we dealing with differential spread through the lexicon of a particular lexical category, but also more than one lexical category, potentially showing different rates

TABLE 7. PRODUCTIVITY AND DEGREES OF 'FOSSILIZATION' OF *ma- REFLEXES IN TUKANG BESI

The prefix …	SHAPE OF THE PREFIX:			SECTION:
	ma-	me-	mo-	
… occurs with free verb roots?	–	+	+	2.1
… occurs with free nominal roots?	–	+	+	3.4
… occurs inside causativization?	+	+	+	3.1
… 'counts' for reduplication?	+	+ / –	–	3.2
… is retained in nominalizations?	+	+ / –	–	3.3
… is retained in the factitive?	+	–	–	3.3
… is retained in exclamatory clauses?	–	–	–	3.3

of diffusion. All of this, combined with different degrees of grammaticalization of what may have been (to judge from the Tukang Besi evidence) a morpheme that could be considered separable in some discourse functions, but not in others, makes the erratic presence of *ma- in Oceanic languages an expected outcome. The cases in which *ma- must be unambiguously reconstructed reflect instances of (to judge from the data that E&R present) very early pre-Proto-Oceanic grammaticalization of *ma-, while the items that show ambiguous behavior would represent a set of lexical items that displayed behavior closer to that attested in the Western Malayo-Polynesian cognates.

Another benefit that we gain from a more detailed examination of the Tukang Besi data is some empirical justification for what E&R label the class of experiential verbs, or at least for the existence of two (or more) separate classes of *ma-taking lexemes. They separate this class from their more general undergoer subject verbs with reflexes of *ma- on the grounds that "the subject of these undergoer verbs was a human experiencer rather than an inanimate patient" (E&R 2001:288). This is, of course, a (contentious) semantic distinction, and not the sort of material that can be submitted for an evaluation of syntactic categories, because no criteria are put forward to justify why the term "experiential" is necessary as a morphosyntactically relevant class.[16] In Tukang Besi, on the other hand, we have seen that we can recognize a class of experiential verbs, which, while displaying many of the characteristics of nondynamic verbs generally, do have some unique properties of their own, as described in section 4 of this article. The fact that, of the very few verbs alleged to be experiential by E&R, the only one for which we have a definite cognate in Tukang Besi, *moturu*, cognate with Proto-Oceanic *[ma]t[i,u]Du(R) 'sleep', does not behave as an experiencer verb is simply support for the stance that semantic verbal classification without corresponding morphosyntactic behavior is not a valid linguistic strategy. This is not to say that there might not have been a class of experiential verbs in Proto-Oceanic, because the classification of verbs varies from one language to another along essentially arbitrary grounds. The Tukang Besi data show that there is supporting evidence for a morphosyntactic class of experiential verbs in languages related to Proto-Oceanic, but the burden of proof lies with the Oceanicists to demonstrate that a similar category was also relevant in Proto-Oceanic (or, for that matter, in Oceanic daughter languages).

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16. Similarly I do not see why "a consequence of becoming an experiencer-subject verb" leads to "[being] reinterpreted in various daughter-languages as dynamic, … and thus as eligible for transitivization." The experiencer of a monovalent experiencer subject verb is just as much an undergoer as is the patient (or theme) of a monovalent verb with this semantic role for its argument, and is just as nondynamic. It is well known that patient-subject verbs can be transitivized, and that transitive (= bivalent) verbs can be nondynamic. Neither is it clear in what way the predicate 'fear' can be interpreted as dynamic, and what criteria make up the morphosyntactic differences between verbs and adjectives. For this reason, the notions of dynamic/nondynamic and agentive/nonagentive have been separated (Donohue 1999a: chap. 4).

APPENDIX: LEXICALIZED REFLEXES OF *ma- IN TUKANG BESI

The lists that follow give the confirmed members of adjective and verb (or precategorial) classes that display possible reflexes of *ma- (Donohue 1999a: 541–43). In the following lists, the note 'Lia' refers to a form that is only found in the Lia dialect (southern Wanci), 'K' refers to Kaledupa Island forms, and 'T, B' to forms that occur in the southern islands of Tomea and Binongko. Details of Tukang Besi dialectology can be found in Donohue (2000).

ADJECTIVES POSSIBLY REFLECTING *ma-

ma'eka	'scared, fear'	mohama	'sharp'
malingu	'various'	mohana	'salty, hot (chili)'
malino	'lonely'	mohii	'left, left handed'
malobu	'straight'	mohoo	'sick'
malute	'weak'	mohulu	'chewy'
mameko	'sweet'	mohute	'white'
mamuda	'easy, pleasant'	mokado	'hot (K)'
mandawulu	'beautiful'	mokeha	'salty (water)'
marasai	'difficult'	mokobo, mokobu	'thick'
marombu	'dirty'	mokuri	'yellow'
mebuku	'strong'	molango	'drunk'
medombi	'fruitful'	molau	'smelly'
medumpu	'short'	molengo	'long (time)'
meha	'red'	molinga	'forget'
melai	'far, distant'	molobu	'straight'
melampa	'few, scarce'	molulungu	'slippery'
melanga	'long, high'	molungu	'wet'
melangka	'long (horizontally)'	mondilu	'sour'
mena	'hot (of liquids)'	monihi	'thin'
mendaro	'deep'	monini	'cold'
menti'i	'fast'	mopaa	'light (not heavy)'
mepanda	'dwarf(ish)'	mopera	'short'
meransa	'heavy (rain, wind)'	morombo	'dirty'
merimba	'fast'	morunga	'young'
metangku	'close'	morusu	'skinny'
metuko	'strong.'	mosega	'naughty, criminal'
mo'ini	'shy (T, B)'	mosenga	'pink'
mo'omuru	'hungry (T, B)'	mososoa	'sweaty'
mo'owu	'fat'	motembe	'fresh (of water)'
moana	'right-hand side'	motika	'old(ish)'
mobai	'hard, tough, chewy'	motiti	'dry'
mobasa	'big, great'	motuko	'strong'
mobela	'injured, wounded'	motutu	'blunt (edge)'
mobila	'full, satisfied'	mowangi	'fragrant'
moboha	'big, heavy, large'	mowondu	'strong smell'
moha'ato	'itchy'	mowuru	'rotten'
mohaki	'bitter'	muntu	'sweet (Lia)'
mohali	'expensive, difficult'		

VERBS AND PRECATEGORIAL ROOTS POSSIBLY REFLECTING *ma-

maho	'to breath'	moma'a	'yawn'
makanu	'be/get ready'	mombaka	'delicious'

VERBS AND PRECATEGORIAL ROOTS POSSIBLY REFLECTING *ma- (CONTINUED)

mangule	'exhausted'	monea	'usual, normal'
mansuana	'old (people)'	moniasi	'feel pity for'
mawa	'flow'	monimpala	'miss, feel homesick'
mele	'happy, content'	moree	'to cough'
melu	'request'	moro'u	'drink'
membali	'turn out, become'	morondo	'night'
mente	'be surprised'	moso	'retract head (of a tortoise)'
menturu	'normal'	mota'a	'ripe'
mepa	'wet'	motalo	'lose'
miso	'suck' (?)	motindo'u	'thirsty'
mo'ane	'male, man, husband'	motondu	'drown at sea'
mo'aro	'hungry'	motongka	'sink'
Mo'ori	'God'	moturu	'sleep'
moina	'day (T, B)'	motuturu	'tired, sleepy'
molo	'drown in shallows'	muluru	'lose footing'
molola'a	'widow(er)'	muru	'be bald'

A list of many other lexical items can be found in Donohue (1999a), and pan-dialectal lists can be found in Donohue (2000).

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