

# Is Malayo-Polynesian a primary branch of Austronesian? A view from morphosyntax

Victoria Chen<sup>1</sup>, Jonathan Kuo<sup>2</sup>, Maria Kristina Gallego<sup>3</sup>, and Isaac Stead<sup>4</sup>

<sup>1</sup>Victoria University of Wellington

<sup>2</sup>National Taipei University of Technology

<sup>3</sup>Australian National University/University of the Philippines Diliman

<sup>4</sup>Max Planck Institute for Evolutionary Anthropology

## Abstract

An understudied morphosyntactic innovation, reanalysis of the Proto-Austronesian (PAN) stative intransitive prefix *\*ma-* as a transitive affix, offers new insights into Austronesian higher-order subgrouping. While Malayo-Polynesian is currently considered an Austronesian primary branch with no identifiably closer relationship with any linguistic subgroup in the homeland (Blust 1999, 2013; Ross 2005), the fact it displays the same innovative use of *ma-* with Amis, Siraya, Kavalan, and Basay-Trobiawan and shares the merger of PAN *\*C/t* with this group suggests that Malayo-Polynesian and East Formosan may share a common origin – the subgroup that comprises the four languages noted above. This observation points to a renewed subgrouping more consistent with a socio-historical picture where the out-of-Taiwan population descended from a seafaring community expanding to the Batanes and Luzon after having developed a seafaring tradition. It also aligns with recent findings in archaeology and genetics that (i) eastern Taiwan is most likely the starting point of Austronesian dispersal (Hung 2005, 2008, 2019; Bellwood 2017; Bellwood & Dizon 2008; Carson & Hung 2018) and (ii) the Amis bear a significantly closer relationship with Austronesian communities outside Taiwan (Capelli et al. 2001; Trejaut et al. 2005; McColl et al. 2018; Pugach et al. 2021; Tatte et al. 2021). Future investigation of more shared innovations between Malayo-Polynesian and East Formosan could shed further light on their interrelation.

**Keywords:** Austronesian higher-order subgrouping, Malayo-Polynesian, East Formosan, syntactic reanalysis; Austronesian diaspora; Out-of-Taiwan Hypothesis; triangulation

## 1 Introduction

There has been a consensus in the literature that all Austronesian languages spoken outside Taiwan belong to a single subgroup, Malayo-Polynesian (MP). This subgroup is defined by a series of innovations shared across extra-Formosan languages (e.g. Mills 1975; Dahl 1973; Blust 1977, 1993a; 1999, 2001, 2013; Liao 2011; Ross 2002, 2005, 2012, a.o.).<sup>1</sup>



However, linguistic evidence for the origin of MP has remained vague. From the perspective of sound change, two Formosan subgroups are most likely to be its closest relatives: (i) Bunun, which shares the mergers of PAn \*C/t and \*N/n with MP, and (ii) East Formosan (EF), a subgroup comprising four coastal languages that share the merger of PAn \*C/t with MP. Both mergers are commonly treated as drifts, as neither constitutes an exclusively shared innovation. Accordingly, MP is considered a higher-order subgroup that bears no particularly close relation with any Formosan language (e.g. Blust 1999; Ross 2009, 2012).

In this paper we present evidence for an alternative view: MP is not an Austronesian primary branch, but a subgroup under a larger branch that also subsumes East Formosan. Support for this claim comes from an understudied functional variation of the PAn morpheme \*ma- among higher-order Austronesian subgroups. While its stative intransitive function is attested across western Austronesian, an innovative use is exclusively shared between MP and EF. We argue accordingly that EF may be the closest relative of MP in the homeland and together with it constitutes a single daughter of Austronesian, as in Figure 2. Not only does this proposal better reflect the out-of-Taiwan dispersal, but it also point to a scenario more consistent with that expected from a socio-historical perspective (Figure 1) as well as recent findings in genetics and archaeology.

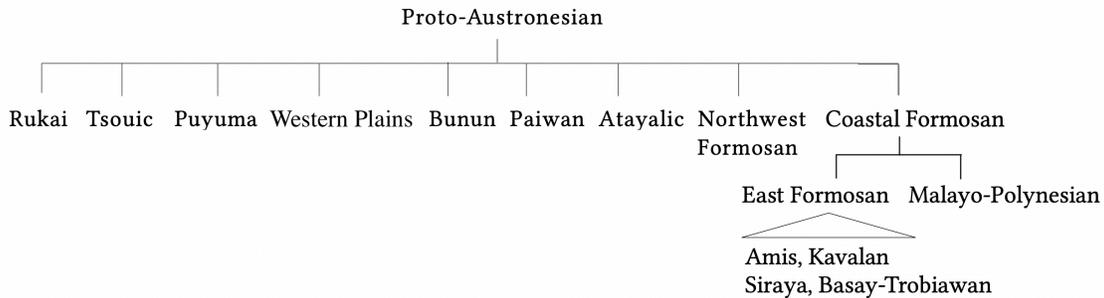


Figure 2: Austronesian higher-order subgrouping

The remainder of this paper is structured as follows. In the following section, we review recent proposals for Austronesian higher-order subgrouping, focusing on the treatment of Malayo-Polynesian. Section 3 surveys two distinct uses of \*ma- among higher-order Austronesian languages and their distribution. Sections 4 and 5 present arguments for one of the two uses of \*ma- as a true case of shared innovation. Section 6 presents additional evidence for the subgrouping in Figure 2 and inferences from sister fields. Section 7 concludes. Except where otherwise indicated, the data presented in this paper comes from primary fieldwork over a period of five years from 2015 to 2020.

## 2 A note on Austronesian higher-order subgrouping

We begin with an overview of MP’s interrelationships with other higher-order subgroups. Current controversies in Austronesian primary-level subgrouping boil down to three questions, (2a-c).

- (2) a. Whether or not all Austronesian languages except Rukai, Tsou, and Puyuma constitute a single primary branch (Ross 2009, 2012).

- b. Whether or not all Austronesian languages except Rukai constitute a single primary branch (Starosta 1995; Aldridge 2016).
- c. Whether or not MP is an independent primary branch (Blust 1999; Ho & Yang 2000; Ross 2020).

These proposals yield distinct interpretations of the position of MP: (a) MP as an Austronesian primary branch (Proposal 1), (b) MP as a first-order subgroup of a primary branch (Proposal 2), and (c) MP as a secondary or lower order subgroup of a primary branch (Proposal 3).<sup>4</sup>

Proposal 1 treats MP as a first-order offshoot of PAN along with nine other branches located in the homeland (Blust 1999), as seen in Figure 3. This treatment draws on the absence of exclusively shared phonological innovations between MP and any Formosan subgroups. Accordingly, MP is considered an independent primary branch.

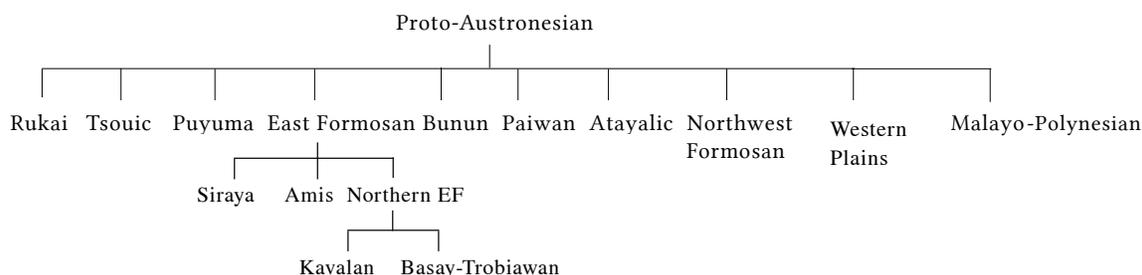


Figure 3: Blust (1999)

Proposal 2 treats MP as a first-order subgroup of a primary branch comprising all Austronesian languages except Rukai, Tsou, and Puyuma (Figure 4). This proposal draws on the fact that Proto-Malayo-Polynesian displays a morphological paradigm that manifests nominalizer-voice affix homophony. Based on the assumption that this feature reflects a single shared innovation, MP is placed under the primary branch defined by this alleged post-PAN innovation.

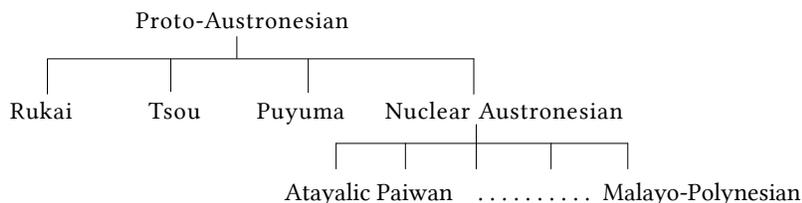


Figure 4: Ross (2009, 2012)

Proposal 3 argues instead that MP shares a closer relationship with Siraya, Kavalan, and Bunun (Ho & Yang 2000) (Figure 5), building on the assumption that the merger of PAN \*C and \*t observed in all these languages reflect a single shared innovation.

<sup>4</sup>This summary excludes earlier proposals that offer no specific evidence for their subgroupings (e.g. Dyen 1965; Ferrell 1969; Reid 1982; Harvey 1982) and those that have been critically reviewed in recent work (e.g. Sagart 2004; Aldridge 2016). See Ross (2012), Blust (2013), Blust (2014), Blust & Chen (2017), and Chen (2017) for a more detailed discussion.

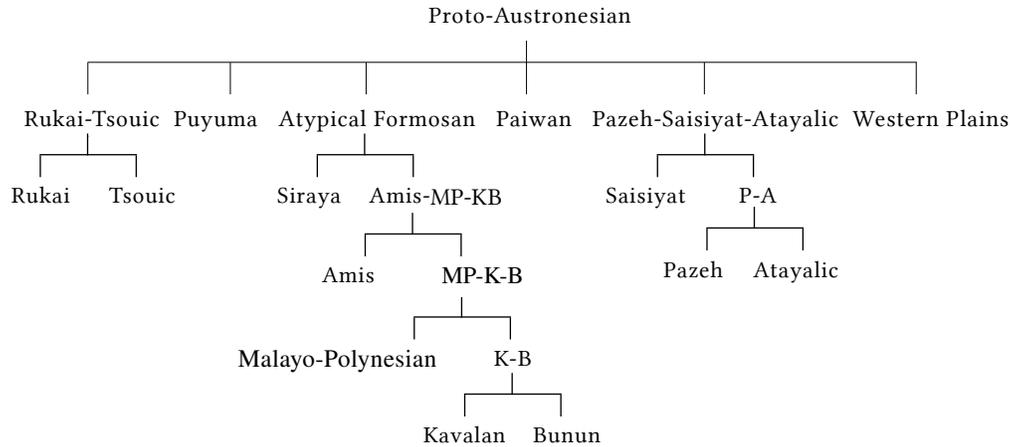


Figure 5: Ho & Yang (2000)

Since nominalizer-voice affix homophony is found across the majority of higher-order subgroups and the merger of PAN \*C/t remains controversial as a criterion for subgrouping, neither proposal offers a definite answer to the origin of Malayo-Polynesian.

Turning now to the internal subgrouping of Malayo-Polynesian, two competing proposals are worth noting. According to the traditional view (Blust 1983–84, 1991, 1999), PMP underwent a binary split into two primary branches, Western Malayo-Polynesian (WMP) and Central-Eastern Malayo-Polynesian, as in Figure 6.

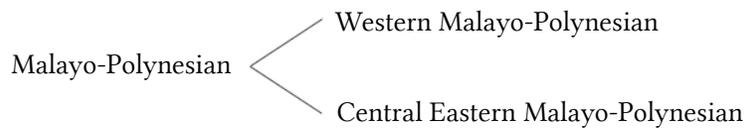


Figure 6: MP primary-level subgrouping (Blust 1983–84, 1993b, 1999)

However, as Ross (1995: 67) points out, given the standard view of MP migration patterns, WMP as a group only reflects the speech of all of the communities that remained behind after the migration of the Central-Eastern speech community. Blust (1984–85) also acknowledges the absence of definite evidence defining WMP as a coherent subgroup. Building on this agreement is a more recent proposal that PMP is better viewed as having undergone a rapid split into no fewer than 9 primary branches (Smith 2017), illustrated in Figure 7. We adopt this proposal as it aligns with recent archaeological findings (Bellwood 1988, 1989, 2007; Kirch 2002; Ward, Athens, & Hotton 1998).<sup>5</sup>

With this background in mind, we are now ready to turn to the functional variation of the morpheme \*ma- in western Austronesian and its implications for the origin of MP.

<sup>5</sup>As Smith (2017) notes, archaeological evidence suggests that the settlement of Neolithic agriculturalists in Borneo, Java, Sumatra, Sulawesi, Timor, Halmahera, the Marianas, and Palau (between 4,000 and 3,500 BP) were not much later than in the Philippines (4,500 BP). This contradicts the subgrouping proposal in (8) and suggests a rapid expansion after the settlement of Luzon.

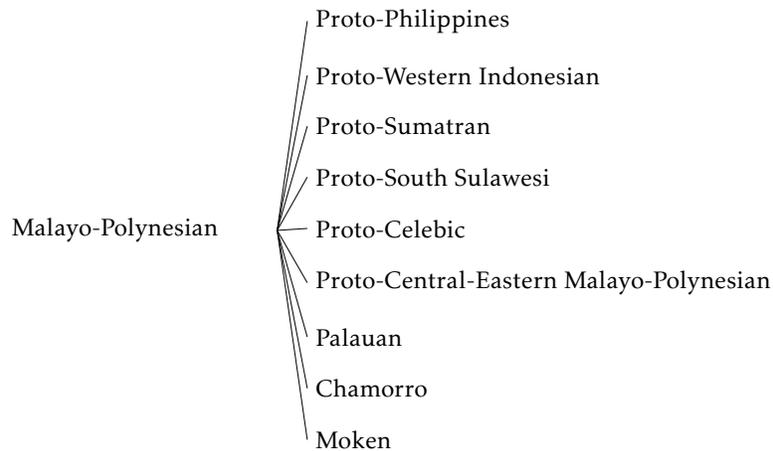


Figure 7: MP primary-level subgrouping (Smith 2017)

### 3 Two functions of *ma-* in western Austronesian

A comparative look at *ma-* in higher-order western Austronesian languages reveals two distinct functions: (i) *ma-* as a stative prefix used in intransitives, and (ii) *ma-* as a Patient Voice-like affix used in transitives. While the former is attested across western Austronesian, the latter is rare in Taiwan and attested only in a subset of Malayo-Polynesian languages.<sup>6</sup> We begin with a look at the distribution of each function, and then discuss what this implies for subgrouping.

#### 3.1 *ma-* as a stative intransitive prefix

The stative intransitive use of *ma-* is well-documented in the literature (see Himmelmann 2004; Huang & Song 2008; Blust 2013; Ross 2015; Blust & Trussel 2020, and the literature cited in these works). Across western Austronesian, this affix commonly combines with adjectival verbs and forms stative intransitive clauses. In such constructions, the sole argument – usually a theme or an experiencer – bears subject-marking, analogous to other Actor Voice-marked intransitives. This case pattern is illustrated by the Tagalog examples (3a-c). To remain analysis-neutral, we gloss subject-marking as PIVOT throughout this paper.

- (3) Tagalog
- a. *Ma-rikit ang babae.*  
 STAT.AV-be.beautiful PIVOT woman  
 ‘The woman is beautiful.’ (*ma*-clauses)
- b. *K<um>anta ang babae.*  
 <AV>sing PIVOT woman  
 ‘The woman sang.’ (Actor Voice clauses)
- c. *D<um>ating ang babae.*  
 <AV>arrive PIVOT woman

<sup>6</sup>We do not discuss other attested functions of *ma-* in individual languages here, as this is not directly relevant to our subgrouping argument. See Ross (2015) and Himmelmann (2004) for details.

‘The woman arrived.’

(Actor Voice clauses)

This function of *ma-* is uncontroversially reconstructable to Proto-Austronesian, as it is attested across all primary branches regardless of the exact subgrouping adopted (Ho 1998; Blust 1999; Starosta 1995; Sagart 2004; Ross 2009). The data below illustrates its use in 12 selected languages representing different higher-order subgroups. Square brackets following the language name indicate the language’s subgrouping affiliation under Blust’s (1999) (Figure 3) and Smith’s (2017) proposals (Figure 7) for Malayo-Polynesian subgrouping.<sup>7</sup>

- (4) a. Puyuma (Puyuma)  
*Ma-liyay na bangsaran.*  
[AV.STAT]-be.drunk DEF.PIVOT young.man  
‘The young man is drunk.’
- b. Paiwan (Paiwan) (Chang 2006: 269)  
*Na=ma-Leva-Leva=mun?*  
PRF=[AV.STAT]-RED-be.joyful=2PL.PIVOT  
‘Have you been happy?’
- c. Bunun (Bunun) (de Busser 2009: 328)  
*Ma-diqla babi.*  
[AV.STAT]-be.bad dream.PIVOT  
‘The dream is bad.’
- d. Saisiyat (Northwestern Formosan) (Zeitoun et al. 2015: 514)  
*Hae:wan ma-skes.*  
night [AV.STAT]-be.cold  
‘At night it is cold.’
- e. Ivatan (Batanic, MP) (Reid 1966: 127)  
*Ma-pteng qo tao qandelak.*  
[AV.STAT]-be.hungry PIVOT man tomorrow  
‘The man will be hungry tomorrow.’
- f. Seediq (Atayalic) (ODFL)  
*M-sibus beyuq ka walu ga.*  
[AV.STAT]-sweet very PIVOT honey that  
‘That honey is very sweet.’
- g. Rukai (Rukai) (ODFL)  
*Ma-adraw kay awlru-su.*  
[AV.STAT]-be.big PIVOT head-2SG.POSS  
‘Your head is big.’
- h. Tagalog (Philippines, MP) (Kroeger 1991: 24)

<sup>7</sup>We indicate Ivatan’s subgrouping affiliation as ‘Batanic,’ as the relationship of Batanic languages with other Philippine languages has remained controversial. (see Ross 2005, 2020, Blust 2019, 2020, and Liao 2020 for discussion).

*Ma-ta-talino ang=mga-bata-ng Intsik.*  
 [AV.STAT]-PL-be.smart PIVOT=PL=child=LK Chinese

‘The Chinese children are bright.’

- i. Chamorro (Chamorro, MP) (Chung 2020: 159)

*Ma-guf i geftao na biba.*  
 [AV.STAT].be.happy the generous LK old.woman

‘The generous old woman was happy.’

- j. Palaun (Palauan, MP) (Chedaol Biblia, Matthew 19: 22)

*Ng kmal mle me-rau.*  
 3SG.S very AUX.PST [AV.STAT]-be.rich

‘He was very rich.’

- k. Tamambo (CEMP, MP) (Jauncey 1997: 135)

*Glas mo ma-bila.*  
 glass 3SG [STAT.INTR]-shatter

‘The glass is shattered.’

- l. Tukang Besi (Western Indonesian, MP) (Donohue 1999: 157)

*No-mo-nini.*  
 3R-[STAT.INTR]-cold

‘They are getting cold.’

Given this distribution, *mainTR-* is uncontroversially a retention from Proto-Austronesian. See Blust (2013), Ross (2015), and Blust & Trussel (2020) for the same assumption.

### 3.2 *ma-* as a Patient Voice-like affix used in transitives

A second function of *ma-* is found in a subset of western Austronesian languages, where the affix appears in transitive clauses featuring a genitive initiator and a theme in subject-marking.<sup>8</sup> Consider the data below from Amis (Formosan) and Tagalog (Malayo-Polynesian). Examples (5a) and (6a) illustrate the affix’s intransitive use; (5b) and (6b) demonstrate the transitive use with a genitive-marked initiator.

- (5) Amis (East Formosan)

a. *Ma-curah ku lumaq.*  
 MA-burn PIVOT house

‘The house burned.’

(*ma-* as a stative intransitive affix)

b. *Ma-curah ni Kulas ku lumaq.*  
 MA-burn [GEN Kulas]PIVOT house

‘Kulas burned the house.’

(*ma-* as a transitive affix)

- (6) Tagalog (Malayo-Polynesian)

<sup>8</sup>We use the term ‘initiator’ here to refer to noun phrases with either the agent or causer role, as the genitive-marked argument in the *ma-* construction is not restricted to (animate) agents.

- a. *Na-sunog ang babay.*  
 MA.REAL-burn PIVOT house  
 ‘The house burned.’ (ma- as a stative intransitive affix)
- b. *Na-sunog ni Ivan ang babay.*  
 MA.REAL-burn PN.GEN Ivan PIVOT house  
 ‘Ivan accidentally burned the house.’ (ma- as a transitive affix)

In both languages, the presence of the genitive initiator alters the sentence from stative to eventive/dynamic. The GEN-PIVOT case frame is reminiscent of the canonical Patient Voice (PV) construction, which displays the same case pattern. Consider the examples in (7)-(8).<sup>9</sup>

(7) Amis

- a. *Ma-curah ni Kulas ku lumaq.*  
MA-burn GEN Kulas PIVOT house  
 ‘Kulas burned the house.’ (ma-construction)
- b. *Curah-en ni Kulas ku lumaq.*  
 burn-PV GEN Kulas PIVOT house  
 ‘Kulas will burn the house.’ (Patient Voice clause)

(8) Tagalog

- a. *Na-sunog ni Ivan ang babay.*  
MA.REAL-burn PN.GEN Ivan PIVOT house  
 ‘Ivan (accidentally) burned the house.’ (ma-construction)
- b. *S<in>unog ni Ivan ang babay.*  
 burn-<PV.PRF> PN.GEN Ivan PIVOT house  
 ‘Ivan burned the house.’ (Patient Voice clause)

Sharing the same case frame, these two constructions differ only in subtle semantic interpretations. In Amis, *ma*-marked clauses denote less volitional events with an emphasis placed on the affectedness of the undergoer (Tsukida 1993; Wu 2006; see also Huang & Sung 2008 for a similar description for Kavalan). In contrast, the *en*-marked Patient Voice construction usually features a volitional initiator (Wu 2006: 39–41, 269). Similarly, *ma*-marked constructions in Tagalog often bear an accidental or abilitative reading (Himmelman 2004, 2006), as opposed to its PV-marked construction, which denotes volitionality.<sup>10</sup> Given their shared case frame, much literature has described *ma*-marked transitive clauses as a type of Patient Voice construction (e.g. Amis: Tsukida 2008; Wu 2006; Kavalan/Amis: Huang & Sung: 2008; Ivatan: Reid 1966;

<sup>9</sup>Voice markers such as *-en ma-* and in Amis has been reported to bear default TAM readings (perfective versus future). See Tsukida (1993, 2008) for details. The sequence *ma-* in Tagalog and many other languages of the Philippines and northern Borneo inflects for mood and surfaces as *na-* in realis clauses. See Himmelman (2004) for details.

<sup>10</sup>In some Philippine languages, *matr*-marked clauses can bear an abilitative reading and the actual interpretation (abilitative vs. accidental) is determined by context. However, the accidental/abilitative reading is not attested in available descriptions in Chamorro and Palauan, two isolated MP primary branches. This suggests that these two readings could be secondary innovations. Here, we focus on only the diachronic implications of the morpheme’s reanalysis from an intransitive intransitive morpheme to a transitive affix.

Proto-Paitanic: Lobel: 2013; Itbayaten: Yamada 2014; Yami: Rau & Dong (2006); Cebuano: Tanangkingsing (2009); inter alia).

Crucially, genitive-marked initiators are impossible with *ma*-constructions in most Formosan languages, where initiators can only be incorporated as an optional oblique phrase. Consider the data below from Paiwan and Puyuma, which represent two different primary branches.<sup>11</sup> Each represents a distinct Austronesian primary branch.<sup>12</sup>

- (9) a. Paiwan (Chang 2006: 214)  
*Ma-takeDus a za kupu ni 'aLuay (tay Kalalu).*  
 AV.STAT-touch PIVOT that cup PN.POSS 'aLuay (PN.OBL Kalalu)  
 'aLuay's cup was unintentionally touched (by Kalalu).'
- b. Puyuma  
*Ma-binga=ku dra tu-nirengayan kan Siber.*  
 AV.STAT=annoy=1SG.PIVOT ID.OBL 3.POSS-word LK Siber  
 'I was annoyed by Siber's words.'
- c. Puyuma  
 \**Tui=ma-binga=ku (kan Siber/kana tu-nirengayan kan Siber)i.*  
 3.GENi=MA-annoy=1SG.PIVOT (SG.GEN Siber/CN.GEN 3.POSS-word LK Siber)i  
 (intended: 'I was annoyed {by him/her/Siber/Siber's words}.'

Within Formosan, the transitive use of *ma*- is attested only in four coastal languages: Amis (10), Kavalan (11), Basay-Trobiawan (12), and Siraya (13).<sup>13</sup> These languages constitute all members of Blust's (1999) East Formosan branch defined by the merger of PAn \*j and \*n.

- (10) Amis (East Formosan)  
*Ma-curah ni Kulas ku lumaq.*  
 MA-burn GEN Kulas PIVOT house  
 'Kulas burned the house.'
- (11) Kavalan (East Formosan) (Huang & Sung 2008: 161)  
*Ma-ziut=na ya taquq nay ta paRinan.*  
 MA-hang=3SG.GEN PIVOT chicken that LOC tree  
 'He hung the chicken on the tree.'
- (12) Basay-Trobiawan (East Formosan) (Li 2014: 26)

<sup>11</sup>According to primary fieldwork on Nanwang Puyuma and available descriptions (Teng 2008), neither structures is possible for *ma*-marked clauses, as in (9c).

<sup>12</sup>Note that the [PIVOT - OBLIQUE] case frame is available also in languages with *matr*-. Consider: Tagalog *Na-inis ng/sa (GEN/OBL) bata ang ale* 'The woman was annoyed by the child.' Amis: *ma-'esam kura tamdaw tura (OBL) lalangaw* 'The person was annoyed with the fly'.

<sup>13</sup>All Basay data cited in this paper comes from the Trobiawan dialect. Following previous work (Blust 1999; Li 2004, Sagart 2004), we refer to this language as 'Basay-Trobiawan.'

*Ma-unu=isu ma-tavan=na tama-isu?*  
 MA-what=**2S.GEN** MA-head.hunt=ASP father-2s.POSS

‘Why have you beheaded your own father?’

- (13) Siraya (East Formosan) (Adelaar 2011: 88)

*Ma-i-riney=eta bia tu-turo ki rata.*  
 MA-LOC-make=**1PL.GEN** here RED-three PIVOT tabernacle

‘Let’s make here three tabernacles’

This observation allows for two generalizations: (i) given *matR-*’s limited distribution in Formosan, this function is likely to be innovative, and (ii) given its presence in all members of EF it is most economical to assume *matR-* to be a retention from Proto-East-Formosan. This strengthens East Formosan as an independent subgroup (Blust 1999) and undermines previous disagreements (Sagart 2004, 2014).

A similar function of *ma-* is attested across multiple Malayo-Polynesian primary branches: Western Indonesian, Palauan, Chamorro, and Philippines. Whether or not Philippine languages constitute a single coherent primary branch remains controversial (Reid 1982; Blust 2017, 2020; Smith 2017; Liao 2020; Ross 2020; Zorc 2020). The fact that *matR-* is attested in various Philippine subgroups thus indicates that this function may in fact be distributed across more than four MP primary branches. Examples (14a-f) present a list of data that illustrate this distribution.<sup>14</sup> See also Table 1 for a sample of our survey results.

- (14) a. Chamorro (Chamorro, MP) (Chung 2020: 213)

*Ma-yamak i batalan ni napu.*  
 MA-break the plank GEN wave  
 ‘The plank was broken by the waves.’

- b. Palauan (Palauan, MP) (Gibson 1993: 143)

*A ngikel a me-ka er a ngalek.*  
 DL fish DL MA-eaten GEN DL child  
 ‘The child is eating the fish.’

- c. Arta (Philippines, MP) (Kimoto 2017: 215)

*Saya [ ma-alap didi ama=mi=ti ] a laman.*  
 that [ MA-get PL.GEN father=1PL.GEN.SPC ] LK boar  
 ‘That is the wild pig which our fathers can get.’

- d. Papar (WI, MP) (Lobel, pers. comm.)

*Pai’ to’o’ dinó, niyá’ ma-akan kadaingan.*  
 NEG put.OV-IMP there later MA.NPST-eat children.(GEN)  
 ‘Don’t put it there, the children might accidentally eat it.’

<sup>14</sup>While this function is common in western Austronesian, we have not found a similar use in CEMP languages, where reflexes of *ma-* have lost the ability to license an optional genitive initiator. See Evans & Ross (2001) and work cited there.

- e. Murut Nabaay (WI, MP) (Lobel, pers. comm.)  
*Kai' bulii' tiyo' ginó, indák am ma-akan nu dalaing.*  
 NEG put.LV-IMP that there or.else MA.NPST-eat GEN children  
 'Don't put it there, it might (accidentally) get eaten by the child.'
- f. Bisaya (WI, MP) (Lobel, pers. comm.)  
*Racun ino na-akan nu anak titinó.*  
 poison that MA.NPAST-eat GEN child that  
 'That poison, it got accidentally eaten by that child.'
- g. Tatana (WI, MP) (Lobel, pers. comm.)  
*Ino na-akán nu bogók dodinái'.*  
 that MA.PST-eat GEN child earlier  
 'That got (accidentally) eaten by the child earlier.'
- h. Sungai Karamuak (WI, MP) (Lobel, pers. comm.)  
*Racun diri na-akan di tanák.*  
 poison that MA.PST-eat GEN child  
 'That poison, it accidentally got eaten by the child.'
- i. Sinabû (WI, MP) (Lobel, pers. comm.)  
*Racun siti, na-akan ni anak-ku.*  
 poison that MA.PST-eat GEN child-1SG.GEN  
 'That poison, it got (accidentally) eaten by my son/daughter.'

Table 1: Two functions of *ma-* in selected western Austronesian languages

	subgrouping affiliation	intransitive <i>ma-</i>	transitive <i>ma-</i>	source(s)
Puyuma	Puyuma	YES	NO	Teng 2008, Cauquelin 2015, primary data
Paiwan	Paiwan	YES	NO	Chang 2000, 2006
Saisiyat	Northwestern Formosan	YES	NO	Zeitoun et al. 2015, Zeitoun 2018b
Atayalic	Atayalic	YES	NO	Huang 2000; Huang & Wu 2018
Pazeh	Western Plains	YES	NO	Lin 2000
Rukai	Rukai	YES	NO	Zeitoun 2000, 2007, 2018
Bunun	Bunun	YES	NO	De Busser 2008, Li 2018
Tsou	Tsouic	YES	NO	Chang & Pan 2018, Wang 2014
Saaroa	Tsouic	YES	NO	Pan 2012
Kanakanavu	Tsouic	YES	NO	Sung 2018, Wild 2018
Amis	East Formosan	YES	YES	Wu 2006, Bril 2017, primary data
Kavalan	East Formosan	YES	YES	Li & Tsuchida 2006
Siraya	East Formosan	YES	YES	Adelaar 2011
Basay-Trobiawan	East Formosan	YES	YES	Liu 2007, Li 2014
Yami	Batanic/(Philippines), Malayo-Polynesian (MP)	YES	YES	Rau & Dong 2006
Itbayaten	Batanic/(Philippines), MP	YES	YES	Yamada 2014
Ivatan	Batanic/(Philippines), MP	YES	YES	Reid 1966
Ilocano	Philippines, MP	YES	YES	Rubino 1997
Arta	Philippines, MP	YES	YES	Kimoto 2017
Tagalog	Philippines, MP	YES	YES	Himmelman 2004, 2006; primary data
Cebuano	Philippines, MP	YES	YES	Tanangkingsing 2009
Proto-Paitanic	Greater Dusunic, Western Indonesian, MP	YES	YES	Lobel 2013, pers. com.
Sinabu	Paitanic, Greater Dusunic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Bisaya Sabah	Bisaya-Lotud, Greater Dusunic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Sungai Karamuak	Dusunic, Greater Dusunic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Papar	Papar, Greater Murutic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Murut	Murutic, Greater Murutic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Tatana	Tatana, Greater Murutic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Tidung Sumbol-Dungusan	Tidung, Greater Murutic, Western Indonesian, MP	YES	YES	Lobel pers. com.
Old Balinese	Western Indonesian, MP	YES	YES	Beratha 1992
Chamorro	Chamorro, MP	YES	YES	Gibson 1980, Chung 2020
Palauan	Palauan, MP	YES	YES	Gibson 1993

Note in particular that *matR-* is attested across the Batanic languages, which are spoken on a group of islands scattered between Taiwan and Luzon (Figure 8). The fact that *matR-* is attested in all four languages (15a-d) is important for interpreting the chronology of *matR-*, as Proto-Batanic could be argued to be one of the early descendants of Proto-Malayo-Polynesian given its geographic location and conservatism. However, this question remains unsettled. See recent debates in Ross (2005, 2020); Blust (2019, 2020); Liao 2020; Reid (1982, 2020); Zorc (2020).<sup>15</sup>



Figure 8: Distribution of the Batanic languages

- (15) a. Ibatan (Batanic) (Maree 2007: 223)  
*Na-boyaw ni Adod bago saya.*  
 MA-chase GEN Adod PIVOT boar those  
 ‘Those pigs were chased away by Adod.’
- b. Ivatan (Batanic) (Reid 1966: 125)  
*Ma-voyaw=mo qo manok.*  
 MA-chase=2SG.GEN PIVOT chicken  
 ‘The chicken is being chased by you.’
- c. Itbayaten (Batanic) (Yamada 2014: 72)  
*Na-tta=ko si Orsing daw.*  
 MA-see=1SG.GEN PIVOT Orsing there  
 ‘I saw Orsing there.’
- d. Yami (Batanic) (Rau & Dong 2006: 115)

<sup>15</sup>According to primary fieldwork, *ma-* can, but not always, denote non-volitional or abilitative reading in Batanic languages. The actual interpretation of a sentence is still context-based. This is why examples (15a-d) do not bear a non-volitional reading.

*Ma-kala=ta*                      *o*        *mogis nio?*  
 MA-find=1PL.INCL.GEN PIVOT rice 2PL.GEN  
 ‘Can we find your rice?’

#### 4 Proposal: *ma<sub>TR</sub>-* as a single, shared innovation of EF and MP

Given the observation above, an important question arises: is *ma<sub>TR</sub>-* reconstructable to PAn, as is the stative intransitive function?; if not, does it reflect a single innovation? As seen earlier, *ma<sub>TR</sub>-* is attested in East Formosan and four MP primary branches. Possible interpretations of this distribution are laid out in (16). Here, we use the term ‘drift’ in its accepted sense, i.e. parallel and independent innovations (Sapir 1921; Jespersen 1922; Andersen 1990; McMahon 1994; Croft 2000; Baxter et al. 2006; Steels & Szathmáry 2018; inter alia.).<sup>16</sup>

- (16) a. **Scenario I (retention)**: Both functions were retentions from PAn; the stative function was stable, while the transitive function has been lost in most primary branches.
- b. **Scenario II (single innovation)**: The transitive use of *ma-* reflects a single innovation that took place prior to the split of East Formosan and Malayo-Polynesian.
- c. **Scenario III (two independent innovations, i.e. drift)**: The transitive use of *ma-* reflects two independent innovations in Proto-East-Formosan and Proto-Malayo-Polynesian respectively.
- d. **Scenario IV (multiple independent innovations, i.e. drift)**: The transitive use of *ma-* reflects multiple innovations in various East-Formosan and Malayo-Polynesian subgroups.
- e. **Scenario V (borrowing)**: The distribution of *ma<sub>TR</sub>-* is the result of contact between East Formosan and Malayo-Polynesian.

In what follows, we present specific arguments for Scenario II.

##### 4.1 Against Scenario I (*ma<sub>TR</sub>-* as a PAn retention)

Interpreting *ma<sub>TR</sub>-* as a PAn retention is disfavored given its absence in any other higher-order Austronesian subgroup. Interpreting this function as a retention thus forces an undesirable assumption: *ma<sub>TR</sub>* has been lost independently in the majority of Austronesian primary branches, while the stative function of the same morpheme remains stable across these branches. This scenario also entails a further undesirable assumption: *ma<sub>TR</sub>-* is unstable and prone to loss in 8 of the 10 primary branch, but remains highly resistant to change in all East Formosan and Malayo-Polynesian subgroups. Finally, the fact that *m*-initial morphemes canonically denote an Actor Voice case frame in western Austronesian (Blust 2009; Ross 2015) suggests that *ma<sub>TR</sub>-* which denotes a Patient Voice case frame – is more likely to be innovative.

Accordingly, Scenario I is disfavored.

<sup>16</sup>The reanalysis proposed here is thus not a unique case. See Lavidas (2007) and Kulikov (2003) for two similar cases of change in Greek and Vedic where an originally intransitive/anticausative construction was reanalyzed as a transitive causative.

## 4.2 Against Scenarios III and IV ( $ma_{TR}$ - as the outcome of drift)

Two other potential alternatives are to analyze  $ma_{TR}$ - either as (a) the outcome of two independent changes occurring in Proto-East-Formosan (PEF) and Proto-Malayo-Polynesian (PMP) or as (b) the result of multiple innovations occurring at lower-level subgroups of EF and MP.

Neither proposal is ideal. The fact that  $ma_{TR}$ - is attested in all members of East Formosan (§3) indicates that this innovation is best reconstructed to Proto-East Formosan. Similarly, the presence of  $ma_{TR}$ - in four of the nine Malayo-Polynesian primary branches — in particular in two isolated branches, Chamorro and Palauan, as well as all Batanic languages, strongly suggests that this function can be traced back to PMP. This argues against interpreting  $ma_{TR}$ - as the outcome of multiple independent innovations in EF and MP subgroups (Scenario IV).

Analyzing  $ma_{TR}$ - as two independent developments in PEF and PMP (Scenario III) is disfavored for similar reasons, as it forces the undesirable assumption that PAN  $*ma$ - underwent two highly similar innovations in two immediate descendants (and before further split of both branches) but not within any other eight branches. Moreover, given the presence of PAN  $*C/t$  merger in both EF and MP we must assume PEF and PMP underwent two identical changes: innovation of  $mainTR$ - and the merger of PAN  $*C$  and  $*t$  into  $t$ .

Not only do both scenarios go against the Principle of Economy, but they also leave a few independent pieces of evidence for an EF-MP connection unexplained. See section 6 for details.

## 4.3 Against Scenario V ( $ma_{TR}$ - as a case of structural borrowing)

Could the distribution of  $ma_{TR}$ - reflect borrowing between EF and MP as a product of contact? We argue that this scenario is highly unlikely. Structural borrowing has been reported to be far less common than lexical borrowing, and it typically occurs under conditions of intensive contact and bilingualism (see, e.g., Haugen 1950; Weinreich 1953; Thomason & Kaufman 1988). If  $ma_{TR}$ - is indeed a product of contact, we would expect to see other contact-induced changes in the lexicon of EF and MP languages. However, none of the four East Formosan languages show significant borrowing from MP languages, and vice versa.

The fact that  $ma_{TR}$ - adheres to the inflectional paradigms of EF and MP lends further support against a borrowing hypothesis. In MP languages,  $ma$ - inflects for mood and surfaces as  $na$ - in the realis, as seen in (14f-i) and (15). This follows from the general morphological rule observed with other  $m$ -initial morphemes, such as reflexes of PMP  $*maR$ - 'actor voice durative' and PMP  $*maN$ - 'actor voice distributive'. In Formosan, this MP-specific inflectional rule is not attested.

## 5 East Formosan as the closest relative of Malayo-Polynesian

We argue accordingly that the transitive use of  $ma$ - is best viewed as an innovation occurring prior to the split of EF and MP, and inherited by all its modern descendants. This proposal points to the subgrouping scenario in (Figure 9), with the proposed ancestor of EF and MP labeled *Coastal Formosan*. Given the absence of PAN  $*j$  and  $*n$  in MP, we assume that MP moved out of Taiwan before Proto-East-Formosan underwent this change.<sup>17</sup>

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<sup>17</sup>This proposal partially coincides with two earlier insights: (i) Amis falls under an Austronesian primary branch that also subsumes extra-Formosan languages (Harvey 1982), and (ii) PMP was a language spoken by multiple small

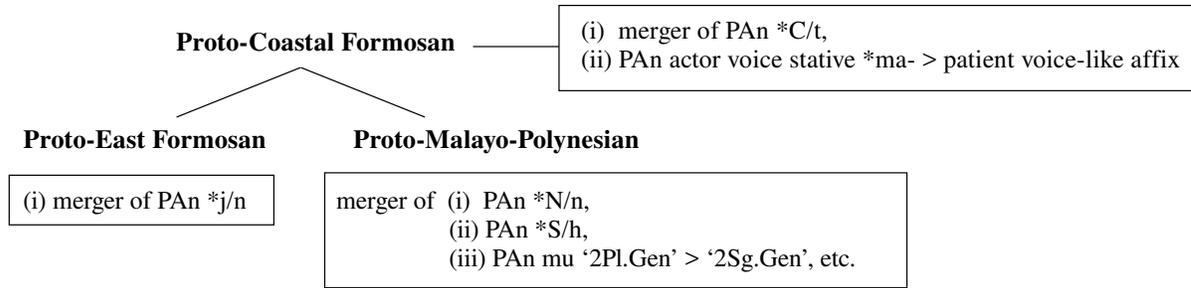


Figure 9: Working hypothesis: EF and MP as sisters under a single primary branch

The current proposal yields two broader implications. First, the East Formosan languages are the closest relatives of Malayo-Polynesian in Taiwan. Second, all Austronesian primary branches are represented on Taiwan, with Malayo-Polynesian being a subbranch of one of the nine Formosan branches.<sup>18</sup> This proposal is consistent with the fact that East Formosan constitutes the only Austronesian language group in Taiwan distributed around the coastline of the island, as seen in Figure 1.



Figure 10: Distribution of East Formosan languages

The fact that EF languages spread across the northern tip to the southwestern coast throughout the east coast of Taiwan suggests that EF speakers may have expanded along the coastline of the island by sea.<sup>19</sup> We term this proto-language *Coastal Formosan*. This distribution, along with the known seafaring traditions of the East Formosan groups (Mabuchi 1960; Ferrell 1969; Li 2004, 2012), offers a reasonable origin story for Malayo-Polynesian as a speech community

groups of migrant seafarers from southeastern Taiwan (Reid 2016: 132).

<sup>18</sup>The current evidence also argues against placing Bunun within an EF-MP language group (Ho & Yang 2000), as the transitive use of *ma-* is not attested in Bunun.

<sup>19</sup>Several authors have noted that East Formosan speaking communities share certain cultural similarities, such as the matrilineal kinship system shared by the Amis, Kavalan and Siraya (Li 2004: 372, note 17; Shepherd 1993: 458, note 88, Ferrell 1969: 56). This constitutes tentative evidence for a common ethnic origin for speakers of these language groups.

that was enabled to split off and spread to new environments by the seafaring technology already possessed by the parent community. This proposal indicates a nine-branch tree for Austronesian higher-order subgrouping (Figure 11).

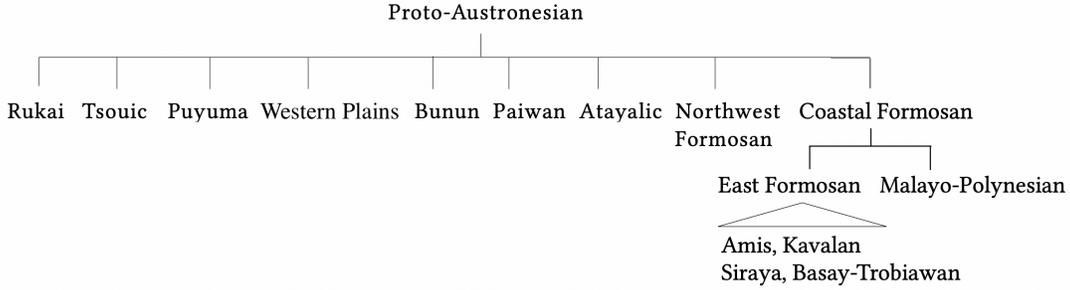


Figure 11: Revised Austronesian higher-order subgrouping

## 6 Further evidence for EF-MP connection

Before concluding, we present additional support for the proposal we have outlined. Section 6.1 presents lexical evidence for an EF-MP connection; section 6.2 discusses recent findings in sister fields consistent with the current proposal.

### 6.1 Potential lexical innovations defining Proto-Coastal-Formosan

If EF and MP are indeed descended from a single ancestor, we would expect more evidence for their common origin. One piece of evidence comes from the cognacy of Amis’s existential negator *awa*. As seen in Table 2, neither EF nor MP languages possess a reflex of the PA existential negator *\*uka*, which is widely attested in Formosan (Austronesian Comparative Dictionary (ACD); Lin 2011). Moreover, an innovative form is attested in the EF language Amis and in five MP languages of the Philippines (Table 3), demonstrating a potential case of *replacement innovation* indicating their shared origin. This cognacy is difficult to explain if Amis and Philippines languages belong to two distinct primary branches.

Table 2: Reflexes of Proto-Austronesian existential negator *\*uka*<sup>20</sup>

Saisiyat	Northwestern Formosan	<i>'oka</i>
Seediq	Atayalic	<i>uka</i>
Thao	Western Plains	<i>uka</i>
Bunun	Bunun	<i>uka</i>
Tsou	Tsouic	<i>uk'a</i>
Saaroa	Tsouic	<i>'uka'a</i>
Rukai	Rukai	<i>okaodho</i> (near comparison)
Atayal	Atayalic	<i>ungat</i> (near comparison)

Table 3: Replacement innovation of PAn \*uka in EF and MP languages<sup>21</sup>

Amis	East Formosan	<i>awa</i>
Ivatan	Batanic/Philippines, Malayo-Polynesian	<i>ava</i>
Ibatan	Batanic/Philippines, Malayo-Polynesian	<i>aba</i>
Ilokano	Philippines, Malayo-Polynesian	<i>awan</i>
Isneg	Philippines, Malayo-Polynesian	<i>awan</i>
Casiguran Dumagat	Philippines, Malayo-Polynesian	<i>ewan</i>

Two other replacement innovations we have observed are PAn \*kuti ‘vulva, vagina’ (replaced by EF-MP \*puki) and \*qelud ‘housepost, pillar’ (replaced by EF-MP \*SadiRi). Consider Tables 4-6. To the best of our knowledge, both PAn words have no reflex in EF and MP languages.

Table 4: Reflexes of PAn \*kuti ‘vulva, vagina’

Papora	Western Plains	<i>huci/kuci</i>
Thao	Western Plains	<i>kuti</i>
Bunun	Bunun	<i>kuti</i>
Paiwan	Paiwan	<i>kutji</i>
Puyuma	Puyuma	<i>kuti</i>

Table 5: PAn \*kuti replaced by EF-MP \*puki

Amis	East Formosan	<i>poki</i>
Ibang	Philippines, Malayo-Polynesian	<i>fuki</i>
Atta	Philippines, Malayo-Polynesian	<i>puki</i>
Kapampangan	Philippines, Malayo-Polynesian	<i>púki</i>
Tagalog	Philippines, Malayo-Polynesian	<i>púki</i>
Bikol	Philippines, Malayo-Polynesian	<i>púki</i>
Yakan	Philippines, Malayo-Polynesian	<i>puki</i>
Berawan	Western Indonesian, Malayo-Polynesian	<i>pukkeb</i>
Javanese	Western Indonesian, Malayo-Polynesian	<i>puki</i>
Acehnese	Chamic, Western Indonesian, Malayo-Polynesian	<i>pukɔə</i>
Moken	Moken, Malayo-Polynesian	<i>pukui</i>
Banggai	Celebic, Malayo-Polynesian	<i>uki</i>
Palauan	Palauan, Malayo-Polynesian	<i>wuk</i>
Li’o	CEMP, Malayo-Polynesian	<i>puki</i>
Erai	CEMP, Malayo-Polynesian	<i>ui</i>
Sula	CEMP, Malayo-Polynesian	<i>poki</i>
Loniu	OC, CEMP, Malayo-Polynesian	<i>pwi-n</i>
Tarpia	OC, CEMP, Malayo-Polynesian	<i>piki</i>
Gitua	OC, CEMP, Malayo-Polynesian	<i>pugi</i>

Table 6: Reflexes of PAN \*qelud ‘housepost, pillar’

Saisiyat	Northwestern Formosan	kæ-‘Lor
Pazeh	Northwestern Formosan	urut
Paiwan	Paiwan	qeluz
Thao	Western Plains	grus

Table 7: PAN \*qelud replaced by EF-MP \*SadiRi

Amis	East Formosan	salili
Ilokano	Philippines, Malayo-Polynesian	adigi
Tagalog	Philippines, Malayo-Polynesian	haligi
Aklanon	Philippines, Malayo-Polynesian	haligi(h)
Berawan	West Indonesian, Malayo-Polynesian	dəkkɪh
Iban	Western Indonesian, Malayo-Polynesian	diri
Totoli	Celebic, Malayo-Polynesian	olii
Balantak	Celebic, Malayo-Polynesian	orii’
Rotinese	CEMP, Malayo-Polynesian	di
Manggarai	CEMP, Malayo-Polynesian	siri
Tetun	CEMP, Malayo-Polynesian	rii
Buli	SHWNG, CEMP, Malayo-Polynesian	li
Numfor	SHWNG, CEMP, Malayo-Polynesian	rir
Manam	OC, CEMP, Malayo-Polynesian	ariri
Lau	OC, CEMP, Malayo-Polynesian	lili

EF and MP also share a number of lexical items unattested in any other primary branch.<sup>22</sup> Consider the sample list in Tables 8-12. All items are attested in Amis and Kavalan (two better described EF languages) and various MP primary branches, but not in any other Formosan subgroup. Note in particular that the regular sound correspondences shown between Amis and Kavalan suggest these lexical items existed prior to the split of Proto-East-Formosan.

<sup>22</sup>A preliminary search of the ACD has revealed more than 30 lexical items that have a wide distribution in Malayo-Polynesian but observed only EF languages in Taiwan. This includes \*kawit ‘hook’, \*baba ‘to ride pick-a-back’, \*betik ‘to snap the fingers’, \*qasawa ‘spouse’, \*ma-baSaw ‘cooled off’, \*pikpik ‘sound of patting or tapping’, \*tabaN ‘head trophy’, \*tekep ‘a cover; to cover with a flat surface’, \*qaluR ‘current, deep channel in the middle of a river’, and \*pekpek ‘to beat, hit’. We remain agnostic about the status of these items, as they may be PAN retentions with limited reflexes.

Table 8: Cognates of \*bubu ‘conical bamboo basket trap for fish’<sup>23</sup>

Amis	East Formosan	<i>fofo</i>	a fish trap for catching fish and crabs in rivers
Kavalan	East Formosan	<i>bubu</i>	conical bamboo basket trap for fish
Ilokano	Philippines, Malayo-Polynesian	<i>bobo</i>	kind of large bow net used to catch fresh-water shrimps
Tagalog	Philippines, Malayo-Polynesian	<i>bubo</i>	fish trap
Akalanon	Philippines, Malayo-Polynesian	<i>bobo</i>	fish trap
Kelabit	Western Indonesian, Malayo-Polynesian	<i>bubub</i>	bamboo basket trap for fish
Bintulu	Western Indonesian, Malayo-Polynesian	<i>buwew</i>	conical bamboo fish trap
Malagasy	Western Indonesian, Malayo-Polynesian	<i>vovo</i>	kind of basket used for fishing
Moken	Moken, Malayo-Polynesian	<i>bubey</i>	fish trap
Palauan	Palauan, Malayo-Polynesian	<i>bub</i>	trap (usually for fish)
Hawu	CMP, CEMP, Malayo-Polynesian	<i>wuwu</i>	fish trap
Rotinese	EMP, CEMP, Malayo-Polynesian	<i>bufu</i>	fish trap
Buli	SHWNG, CEMP, Malayo-Polynesian	<i>pup</i>	fish trap
Kowiai	CMP, CEMP, Malayo-Polynesian	<i>fuf</i>	kind of fish trap
Proto-Oceanic	CEMP, Malayo-Polynesian	<i>*pupu</i>	conical bamboo basket trap for fish

Table 9: Cognates of \*Rabiqi ‘late afternoon, evening, evening meal’

Amis	East Formosan	<i>lafi</i>	‘evening’
Kavalan	East Formosan	<i>Rabi</i>	‘evening, dinner; the evening meal’
Isneg	Philippines, Malayo-Polynesian	<i>xabi</i>	‘evening, night’
Ifugaw	Philippines, Malayo-Polynesian	<i>labi</i>	‘night’
Cebuano	Philippines, Malayo-Polynesian	<i>gabi’i</i>	‘night’
Supan	Western Indonesian, Malayo-Polynesian	<i>gabpi-n</i>	‘night’
Mongondow	Celebic, Malayo-Polynesian	<i>gobii</i>	‘night’
Bimanese	CMP, CEMP, Malayo-Polynesian	<i>awi(na)</i>	‘yesterday’
Wandamen	SHWNG, CEMP, Malayo-Polynesian	<i>ravi-nena</i>	‘afternoon’
Ron	SHWNG, CEMP, Malayo-Polynesian	<i>rob</i>	‘night’
Numfor	SHWNG, CEMP, Malayo-Polynesian	<i>rob</i>	‘night’
Proto-Oceanic	CEMP, Malayo-Polynesian	<i>*Rapi</i>	‘afternoon, evening, yesterday’

Table 10: Cognates of \*buSaw ‘cold, of leftover food; leftover from a meal’

Amis	East Formosan	<i>fasaw</i>	‘cooled off’
Kavalan	East Formosan	<i>basaw</i>	‘fever went down, abated; to become cold’
Itbayaten	Batanic/Philippines, Malayo-Polynesian	<i>vabaw</i>	‘idea of being cold (of food esp.)’
Ilokano	Philippines, Malayo-Polynesian	<i>baaw</i>	‘left over, cold rice; tepidity, coolness’
Pangasinan	Philippines, Malayo-Polynesian	<i>baaw</i>	‘cooked rice’
Tagalog	Philippines, Malayo-Polynesian	<i>babaw</i>	‘left-over food, especially boiled or steamed rice’
Bikol	Philippines, Malayo-Polynesian	<i>babaw</i>	‘cold, referring only to food once served hot’
Aklanon	Philippines, Malayo-Polynesian	<i>babaw</i>	‘cold rice; cool off, get cool (said of food)’
Mansaka	Philippines, Malayo-Polynesian	<i>baaw</i>	‘food prepared for a trip’
Bintulu	Western Indonesian, Malayo-Polynesian	<i>pa-vaw</i>	‘cold, of hot food that has gotten cold’
Agutaynen	CEMP, Malayo-Polynesian	<i>baw</i>	‘breakfast, morning snack’

Table 11: Cognates of \*laRiw ‘run, run away, flee, escape’

Amis	East Formosan	<i>laliw</i>	‘escape’
Kavalan	East Formosan	<i>m-RaRiw</i>	‘run, run away’
Itbayaten	Batanic/Philippines, Malayo-Polynesian	<i>yayo-b</i>	‘race’
Hanunóo	Philippines, Malayo-Polynesian	<i>lagiw</i>	‘running’
Abaknon	Philippines, Malayo-Polynesian	<i>labi</i>	‘to run, run away’
Cebuano	Philippines, Malayo-Polynesian	<i>lagiw</i>	‘run away’
Maranao	Philippines, Malayo-Polynesian	<i>lagoy</i>	‘rush, hurry’
Samal	Philippines, Malayo-Polynesian	<i>lahi-lahi</i>	‘to run’
Iban	Western Indonesian, Malayo-Polynesian	<i>lari</i>	‘run away’
Malay	Western Indonesian, Malayo-Polynesian	<i>lari</i>	‘escape’
Kambara	CMP, CEMP, Malayo-Polynesian	<i>lao</i>	‘to run’
Hawu	CMP, CEMP, Malayo-Polynesian	<i>rai</i>	‘run, run away’
Soboyo	CMP, CEMP, Malayo-Polynesian	<i>labi</i>	‘to run, run away’
Ron	SHWNG, CEMP, Malayo-Polynesian	<i>farar</i>	‘to run’

Table 12: Cognates of \*bangeSiS ‘fragrant/fragrance’

Amis	East Formosan	<i>fangsís</i>	‘sweet’
Kavalan	East Formosan	<i>bangsís</i>	‘fragrant’
Ilokano	Philippines, Malayo-Polynesian	<i>bang’i</i>	‘to smell of toast’
Cham	Western Indonesian, Malayo-Polynesian	<i>bangi</i>	‘used of all agreeable sensations: good, tasty, redolant, etc’
Simalur	Western Indonesian, Malayo-Polynesian	<i>fàngi</i>	‘odor, fragrance’
Old Balinese	Western Indonesian, Malayo-Polynesian	<i>wangi</i>	‘fragrance’
Ngadha	CMP, CEMP, Malayo-Polynesian	<i>wangi</i>	‘to smell’

## 6.2 Support from sister fields

In what follows, we summarize recent findings in genetics and archaeology which yield consistent inferences with the current proposal.

### 6.2.1 Genetics

Much recent genetic research has suggested a close connection between East Formosan and Malayo-Polynesian populations. Capelli et al. (2001) report that Y chromosomes from the Amis but not other non-East Formosan aboriginal communities of Taiwan are distributed throughout selected Austronesian communities outside Taiwan. McColl et al. (2018), Tatte et al. (2021) and Pugach et al. (2021) reach a similar conclusion that the Amis speakers cluster most closely with Philippine speakers in Y-DNA and mtDNA. Consider the following data from Chen et al. (2011:44), which shows that the genetic distance between the Amis and Filipinos was shorter than that between the Amis and other Formosan tribes.<sup>24</sup>

Table 13: Genetic distance between Formosan and Philippines populations

population compared	genetic distance
Amis - Philippines	0.025
other Formosan aboriginals - Amis	0.068
other Formosan aboriginals - Philippines	0.073

Trejaut et al. (2005) reports two consistent findings: (i) among all Formosan populations tested, the Amis in particular are more closely related to island Southeast Asian populations than to populations from mainland East Asia, and (ii) Y-chromosome haplogroup B4a1a occurs frequently among the Amis and the Yami (Batanic, Malayo-Polynesian) but not in any other Formosan communities (Paiwan, Puyuma, Rukai) examined in the study. Contra the conventional view in Linguistics that Malayo-Polynesian does not have a closer relationship with any Formosan group, this suggested link between East Formosan and Malayo-Polynesian finds a *home* for the out-of-Taiwan population in Taiwan, offering a scenario that is potentially more compatible with the perspective of human expansion.

### 6.2.2 Archaeology

Recent archaeological findings further support a closer link between East Formosan and Malayo-Polynesian. In particular, evidence from material culture shows strong links between early Malayo-Polynesian sites on the Batanes islands and Luzon, and the areas of Taiwan where East Formosan languages are spoken today and where Proto-Coastal Formosan was presumably spoken.

Early sites on the Batanes islands, dated at the earliest to around 2200BCE, have yielded numerous pottery sherds characterised by red-slipped or plain surfaces, rare cord-marking and circle stamped decoration, and occasional carination (joining of a rounded base to a main vessel with inward sloping sides) (Bellwood, Dizon & De Leon 2013; Bellwood & Dizon 2005, 2008).

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<sup>24</sup>Capelli et al. (2001) did not specify the exact Filipino community examined in their study, and the Amis was the only East Formosan population examined in this study.

This pottery has strong similarities with that found in coastal southeastern Taiwan. Sites of similar age or slightly earlier than 2200 BCE, such as Donghebei (Chu 1990), Fushan, and Chaolaiqiao (Hung 2008), share the characteristics already mentioned, as well as very similar everted and concave rim profiles, indicating that similar vessel forms and techniques were used in their manufacture. These sites are regarded as the representative Fushan cultural sites of the Middle Neolithic phase in eastern coast of Taiwan.

The “package” of material culture which arrived in the Batanes with Neolithic settlers shows other strong links to southeast Taiwan and the Fushan culture (Hung 2005, 2008; Kuo 2019). Geochemical composition of nephrite jade artifacts from early settlement sites in the Batanes and northern Philippines shows the raw material was sourced from the Fengtian quarry in Hualien, eastern Taiwan (Hung & Iizuka 2013; Hung et. al. 2007) . Many of these artifacts are also clearly linked to the Fushan culture in terms of their design and workmanship.

Several authors have already suggested in the archaeological literature that based on these similarities in material culture indicate that it was people bearing the Fushan cultural sites who moved southwards into the Batanes and Luzon (e.g. Hung 2005; Kuo 2019; Carson & Hung 2018). The East Formosan languages are also concentrated in southeast Taiwan, overlapping with the zone in which Fushan culture sites are found. Because of this, and because it is also clear from the archaeological evidence that the Neolithic colonisation process moved north to south from eastern Taiwan to the Philippines (Bellwood & et al. 2011), it seems reasonable to identify the Fushan culture with a possible Proto-Coastal Formosan speech community.

## 7 Conclusion

Although the Austronesian peoples’ long pause in Taiwan (Bellwood 2007, 2017, Bellwood et al. 2011; Gray et al. 2009) suggests that Malayo-Polynesian (MP) languages would belong to a primary branch located in the homeland, the lack of precise phonological evidence for their origin has led to the view that MP constitutes a primary branch. In this paper, we have presented novel evidence that MP is the sister of East Formosan, a subgroup comprising four languages (Amis, Siraya, Kavalan, Basay-Trobiawan) distributed around the coastline of Taiwan. Support for this claim comes from an understudied syntactic reanalysis shared exclusively between EF and MP: reanalysis of the PAn stative intransitive \*ma- into a transitive affix. The fact that all members of East Formosan reflect the same merger of PAn \*C/t with MP lends further support to this proposal. This renewed subgrouping is not only supported by a number of lexical innovations between EF and MP, but it also aligns with two recent findings in sister fields: (i) eastern Taiwan is the starting point of Austronesian expansion Hung 2005, 2008, 2019; Bellwood 2017, Bellwood & Dizon 2008; Carson & Hung 2018, and (ii) East Formosan speakers are genetically closer to Austronesian communities located outside Taiwan (Capelli et al. 2001; Trejaut et al. 2005; McColl et al. 2018; Pugach et. al.; Tatte et. al. 2021).

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## Abbreviations

List of abbreviations: ASP: aspect AUX: auxiliary; AV: actor voice; CEMP: Central-Eastern Malayo-Polynesian; CMP: Central Malayo-Polynesian; CN: common noun; EMP: Eastern Malayo-Polynesian; GEN: genitive; ID: indefinite INTR: intransitive; IRR: irrealis; LK: linker; LOC: locative; OBL: oblique; NPST: non-past; PAN: Proto-Austronesian; PL: plural; PMP: Proto-Malayo-Polynesian; PN: proper name; PRF: perfective; PST: past tense; PV: patient voice; RED: reduplication; REAL: realis; SG: singular; SHWNG: South Halmahera-West New Guinea; STAT: stative; TR: transitive.

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## Résumé

Innovation morphosyntaxique peu étudiée, la réanalyse du préfixe intransitif statif proto-austronésien (PAn) \*ma- en affixe transitif, offre de nouvelles perspectives sur le groupement linguistique dont émerge l'austronésien. Le malayo-polynésien, le sous-groupe linguistique qui inclut toutes les langues austronésiennes parlées en dehors de Taïwan, est actuellement considéré comme une branche primaire sans étroite relation discernable avec aucun sous-groupe linguistique du foyer d'origine (Blust 1999, 2013 ; Ross 2005). Cependant, ce sous-groupe affiche la même utilisation innovante de ma- que quatre langues de Formose orientale dispersées sur le littoral de Taïwan (Amis, Siraya, Kavalan, Basay-Trobiawan) et partage la fusion de PAn \*C/t avec ce groupe, ce qui suggère la possibilité d'une origine commune pour les groupes linguistiques Formose orientale et malayo-polynésien. Cette observation conduit au re-dessin d'un sous-groupe plus conforme à la représentation socio-historique selon laquelle la population issue de Taïwan descendrait d'une communauté de navigateurs dont la tradition maritime s'étendait des Batanes à Luzon. Cela correspond également aux découvertes récentes en archéologie et en génétique selon lesquelles (i) l'est de Taïwan est probablement le point de départ de la dispersion austronésienne (Hung 2005, 2008, 2019; Bellwood & Dizon 2008, 2017) et (ii) les Amis manifestent une relation spécifiquement plus étroite avec les communautés austronésiennes en dehors de Taïwan (Capelli et al. 2001 ; Trejaut et al. 2005 ; Tatte et al. 2021 ; Pugach et al. 2021). Un examen ultérieur des innovations communes aux langues malayo-polynésiennes et de Formose orientale pourrait aider à clarifier leur corrélation.

## Zusammenfassung

Die Reanalyse des proto-austronesischen (PAn) Stativpräfix \*ma-, einer wenig beachteten morphosyntaktischen Innovation, als Transitivaffix bietet neue Erkenntnisse in Bezug auf die übergeordnete Gruppierung des Austronesischen. Das Malayo-Polynesische, der Zweig der alle austronesischen Sprachen ausserhalb Taiwans umfasst, wird als primärer Zweig gesehen ohne identifizierbare nähere Verhältnis zu den Zweigen in Taiwan. Es zeigt aber den gleichen innovativen Gebrauch von ma- und die Verschmelzung von PAn \*C/t wie vier ostformosische Sprachen, die verstreut an der Küste Taiwans liegen. Dies deutet darauf hin, dass der ostformosische und der malayo-polynesische Zweig einen gemeinsamen Ursprung haben könnten. Diese Beobachtung deutet auf eine neue Gruppierung hin, die besser mit einem sozio-historischen Szenario übereinstimmt in dem die Bevölkerung ausserhalb Taiwans von einer seefahrender Gruppe abstammt, die in die Batanen und Luzon expandierte. Dies passt auch zu jüngsten Erkenntnissen aus Archäologie und Genetik die zeigen, (i) dass der Osten Taiwans wahrscheinlich der Ausgangspunkt für die Ausbreitung des Austronesischen ist und (ii) dass die Amis ein viel engeres Verhältnis mit austronesischen Gruppen ausserhalb Taiwans haben denn innerhalb. Zukünftige Studien zu mehr gemeinsamen Innovationen zwischen dem Malayo-Polynesischen und dem Ostformosischen könnte mehr Licht auf ihr Verhältnis werfen.

## Author's address

Victoria Chen (corresponding author)  
School of Linguistics and Applied Language Studies  
Victoria University of Wellington  
VZ 302, 26 / 28 Kelburn Parade,  
Wellington 6012  
New Zealand  
victoria.chen@vuw.ac.nz  
Jonathan Kuo  
Department of English  
National Taipei University of Technology  
1, Sec. 3, Zhongxiao East Road,  
Taipei 10608  
Taiwan  
kuojona@ntut.edu.tw

Maria Kristina S. Gallego  
University of the Philippines Diliman  
The Australian National University  
Unit 607 Tower 1 Avida Towers Vita  
Brgy. Bagong Pag-Asa, Quezon City 1105  
Philippines  
kristina.gallego@anu.edu.au

Isaac Stead  
Max Planck Institute for Evolutionary Anthropology  
Deutscher Platz 6  
04103 Leipzig  
Sachsen  
Germany  
isaac\_stead@eva.mpg.de