Maranao Revisited: An Overlooked Consonant Contrast and its Implications for Lexicography and Grammar

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This paper revisits Maranao, a Philippine language spoken on the island of Mindanao. In spite of its being the object of foreign inquiry for nearly a century, major errors have persisted in the analysis of its phonology and verb system. However, several now-deceased Muslim Maranao scholars unknowingly deciphered their language's phoneme system in the early 1970s in the process of trying to develop a more ideal orthography than had previously been in use. This breakthrough, unnoticed by linguists until now, allows for revision of the phonological analysis and for a better understanding of its historical development. In turn, such a revision is a prerequisite to the analysis of the morphophonemically complex verbal system, which by its nature cannot be properly analyzed unless based on a clear understanding of the language's phonological system. Finally, by examining the shortcomings of the nearly one hundred years of studies of the Maranao language, linguists can learn many lessons that, hopefully, will help them avoid making similar mistakes in the future.

1. INTRODUCTION.[1] Maranao is a Greater Central Philippine language (Blust 1991) spoken by a population of the same name living on the Philippine island of Mindanao.[2] The speakers reside primarily in the provinces of Lanao del Sur and a large part of Lanao del Norte, although as they are merchants, there is hardly a city and relatively few towns in the Philippines that are not home to at least a few Maranao. This approxi-

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mately million-strong ethnolinguistic group, virtually 100 percent Muslim, is often characterized as the Philippines' most devout Muslim group, evident in the fact that their capital—fittingly named "The Islamic City of Marawi"—has a civic code that largely mirrors Islamic Shari'ah law (the only place in the Philippines where this is the case).

The Maranao language has hardly been ignored by the outside world; in fact, as far as Philippine languages go, it has been studied by a relatively large number of non-Maranao. The first known publication about the Maranao language written by a non-Maranao—and probably the first to feature the Maranao language written in the Latin script [3]—was a 1913 phrasebook by U.S. Infantryman Charles Winslow Elliott about what he called "Lanao Moro." In the 1930s, Frank Laubach (1884–1970) advanced the romanization of Maranao, and compiled the first Maranao dictionary (Laubach 1937). There are currently no less than three available published dictionaries: McKaughan and Macaraya (1996), a revision of the pair's 1967 dictionary; Dansalan College Foundation Inc. (1998); and Tungol (1992). In addition, there is a reconstruction of its protolanguage Proto-Danaw (Allison 1979), a comparative article on the Danao languages (Fleischman 1981), a full Bible translation, and a variety of articles to be found in Philippine and American publications (McKaughan 1958, 1959, 1962; McKaughan and Macaraya 1965; Ward and Forster 1967). The only dedicated phonological description is a brief, unpublished sketch by Ward (n.d.b), probably written in the late 1960s, which is highly problematic, based on too little data to be able to properly analyze the language's complicated phonology. Regardless of the lack of a dedicated phonological study, it can be assumed that previous linguists and Bible translators followed the normal route of at least trying to work out the phonology before making orthographic decisions. The abovementioned works by these outsiders (that is, non-Maranao) and others portray Maranao as having either 19 or 20 phonemes: 15 consonants /p b m w t d n s l r y k g ŋ ʔ/ and either four or five vowels /a i o ə/ plus sometimes either /ɨ/ or /u/.

For most Philippine languages, this would have sufficed, but not for Maranao, whose phoneme system is unlike that of any other Philippine language; likewise, the Maranao are a population quite unique among ethnolinguistic groups in the geographical Philippines. First, as might be expected, Christianizers and devout Muslims are two rather mutually exclusive groups. Secondly, even in this age of globalization, the Maranao are quite fond of their language and culture, and both are preserved rather well today, even as the cultures and languages of a great many other Philippine ethnolinguistic groups are rapidly disappearing, faster and faster with each passing decade. For at least these two reasons, two separate orthographic traditions and bodies of written Maranao literature developed: one written by the mainstream Muslim Maranao scholars, largely consisting of Islamic books and various educational and political writings with a decisively Islamic undertone; and one written largely by non-Maranao Christians along with a small number of native Maranao who were affiliated with them. Neither group seems to have noticed the other: the Christian missionaries and Bible translators were, out of necessity,

3.   The Maranao language was written since earlier times in the Jawi script, an adaptation of the
     Arabic script to better fit the phonologies of Southeast Asian languages like Malay. Even late
     into the twentieth century, Shaiekh Abdul Azis Guroalim Saromantang continued publishing
     Maranao books written in the Jawi script and without Latin script transcriptions, and Maranao
     books written in the Jawi script can still be bought on the streets of the Islamic City of Marawi.

hidden away with the few native Maranao who were willing to work with them. The Muslim Maranao scholars, originating from various towns around Lake Lanao, were working quite publicly, writing and publishing in their native language and enjoying the constant input of many other fellow Maranao, yet the decisively Islamic nature of their work all but ensured that Christians would have little or no interest in it. Included in the writings of these mainstream Muslim Maranao scholars are an interpretation of the Qur'an (Saromantang 2001); [4] countless religious books ranging from a few dozen pages each to several hundred (Abdul 2006, Abdullah 2001, Alonto et. al. n.d., Alonto 1991, Kandhlawi 2004, Ombaya 2008b, Said 1989, n.d.a, n.d.b); academic works on topics like Maranao society and Islam in the Philippines, each hundreds of pages long (Ansano 2001, 2004, and about a dozen others); and various poems, songs, and other short works (Alonto 1988a, 1988b, Ansano 1974, etc.). The three most important of these Muslim Maranao scholars were Shaiekh Abdul Azis Guroalim Saromantang of Tugaya (1923–2003), a self-taught Islamic scholar who translated not only the Qur'an but also numerous other Islamic books; Aleem Abdulmajeed D. Ansano of Taraka (1943–2008), author of a number of several-hundred-page Maranao-language academic books; and Senator Ahmad Domocao "Domie" Alonto of Ramain (1914–2002), translator of Maranao versions of the 1973 Philippine Constitution, the Islamic Hadith and various other Islamic books, and an award-winning Maranao translation of Jose Rizal's *Mi Ultimo Adios* poem.

The orthography that is almost universally preferred by these Muslim Maranao scholars is a "nativized" orthography that was developed in the early 1970s without the help or input of non-Maranao,[5] and indicates Maranao as having 23 phonemes: four vowels /a i o ə/ and nineteen consonants, including the aforementioned 15 /p b m w t d n s l r y k g ŋ ʔ/ plus four additional "heavy" consonants written as *ph, th, z* (or *sh*),[6] and *kh*. The four additional consonants are voiceless consonants that contrast with /p t s k/, respectively, but whose exact phonetic value is elusively difficult to pinpoint.

The phonemic contrast between *ph, th, z,* and *kh* vs. /p t s k/ is clearly supported by the sets of minimal pairs in items (1)–(25), written according to the nativized Maranao orthography, with phonemic and phonetic transcriptions. The heavy consonants will be

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4. An "interpretation of the Qur'an" is like a "translation of the Bible," except that in Islam, there is only one Qur'an, in the original Arabic as written by the Prophet, and it is said that it cannot be "translated," but its meaning can be "interpreted" into other languages for understanding by those who don't understand Arabic. In general, the Arabic original is obligatorily placed next to the vernacular interpretation, and this is true of the Maranao Qur'an.

5. Although the "nativized" orthography is largely the same across writers, the late Saromantang used *u* for the schwa in his Maranao Qur'an, whereas nearly all other Maranao scholars and writers use the letter *e*. Also, both Saromantang and the late Senator Ahmad "Domie" Alonto used *sh* for the heavy fricative, whereas Ansano and most current authors prefer *z*. Finally, Alonto was unique in spelling a final *h* on all words that did not end with a glottal stop or another consonant. It is unknown exactly how early this orthography was in use (especially since the earliest writers to use it are all now deceased), but its first known appearance is in Ansano (1974).

6. This is the heavy unvoiced consonant /s'/, and should not be confused with the *z* /z/ written in Arabic loans that is a voiced /z/ not present in the native phonology of Maranao. The /z/ of Arabic is only pronounced as a voiced fricative by Maranao who have training in the Arabic language; on the other hand, the orthographic *z* of native Maranao words is never pronounced as a voiced consonant, even by those fluent in Arabic. They are two different phonemes, and those well versed in Arabic recognize the difference between Arabic loans and native Maranao words.

represented phonemically as /p' t' s' k'/, respectively, for lack of a currently definitive phonetic analysis.[7]

   (i)   *ph* /p'/ vs. *p* /p/

       (1) a. *paphag* /pap'ag/ [pa.p'ǝg] 'to bang or beat'
            b. *papag* /papag/ [pa.pag] 'wooden container on which a meal is placed'

       (2) a. *sophon* /sop'on/ [so.p'un] 'to join together'
            b. *sopon* /sopon/ [so.pon] 'nipple of a baby bottle' (< Spanish)

       (3) a. *apher* /ap'ǝr/ [a.p'ɨr] 'possessed'
            b. *aper* /apǝr/ [a.pǝr] 'to touch or inspect'

       (4) a. *topha* /top'a/ [to.p'ǝ] 'to spit out of the mouth forcefully, as water, food, or medicine'
            b. *topa* /topa/ [to.pa] 'to tell someone that he or she had better not repeat s.t. bad that was done'

   (ii) *th* /t'/ vs. *t* /t/

       (5) a. *othang* /ot'aŋ/ [o.t'ǝŋ] 'to fall'
            b. *otang* /otaŋ/ [o.taŋ] 'debt'

       (6) a. *bathik* /bat'ik/ [ba.t'ik] 'hard and sticky'
            b. *batik* /batik/ [ba.tɪk] 'the Indonesian *batik* cloth'

       (7) a. *tithig* /tit'ig/ [tɪ.t'ig] 'to cut or chop'
            b. *titig* /titig/ [tɪ.tɪg] 'vowels'

       (8) a. *mathay* /mat'ay/ [ma.t'ǝy] 'take a long time'
            b. *matay* /matay/ [ma.tay] 'die'

       (9) a. *betho* /bǝt'o/ [bǝ.t'u] 'to name, say, or mention'
            b. *beto* /bǝto/ [bǝ.to] 'to fire a gun or set off fireworks'

      (10) a. *otho* /ot'o/ [o.t'u] 'noon; a type of big, red, poisonous snake'
            b. *oto* /oto/ [o.to] 'that.NOM'

      (11) a. *letho* /lǝt'o/ [lǝ.t'u] 'to stretch upwards in order to reach something'
            b. *leto* /lǝto/ [lǝ.to] 'protruding into s.t. that is otherwise flat or even'

      (12) a. *titho* /tit'o/ [tɪ.t'u] 'true'
            b. *tito* /tito/ [tɪ.to] 'puppy'

      (13) a. *bethang* /bǝt'aŋ/ [bǝ.t'ǝŋ] 'crazy'
            b. *betang* /bǝtaŋ/ [bǝ.taŋ] 'dowry'

   (iii) *z* /s'/ vs. *s* /s/

      (14) a. *lozak* /los'ak/ [lo.s'ǝk] 'step on'
            b. *losak* /losak/ [lo.sak] 'left behind, left out'

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7. Abbreviations and symbols used in this paper are: ' marks heavy consonants /p' t' s' k'/; ^ over the final orthographic vowel indicates that the word ends in a glottal stop, which isn't indicated in the nativized Maranao orthography; [ǝ] indicates an allophone of /a/ that is similar to [ǝ] but [+tense]; G = assimilative voiced stop; PSPн, Proto-Southern Philippines (proposed subgroup including the Danao, Subanen, and Manobo languages); PGCPн, Proto-Greater Central Philippines (as proposed by Blust 1991); PDᴀɴ, Proto-Danaw. Grammatical abbreviations not found in the Leipzig Glossing Rules are ᴀʙɪʟ, abilitative; ᴀꜰ, Actor Focus; ʙꜰ, Beneficiary Focus; ᴇᴍᴘʜ, emphatic; ʟꜰ, Location Focus; ᴏꜰ, Object Focus.

(15) a. *sizing* /sis'iŋ/ [sɪ.s'iŋ] 'to wipe'
   b. *sising* /sisiŋ/ [sɪ.sɪŋ] 'ring'

(16) a. *ozod* /os'od/ [o.s'ud] 'to fall head first; a type of spear'
   b. *osod* /osod/ [o.sod] 'to bring something somewhere'

(17) a. *ozor* /os'or/ [o.s'ur] 'progress'
   b. *osor* /osor/ [o.sor] 'to regret'

(18) a. *(ma)rezik* /marəs'ik/ [ma.rə.s'ik] 'dirty'
   b. *resik* /rəsik/ [rə.sɪk] 'to spread'

(iv) *kh* /k'/ vs. *k* /k/

(19) a. *dakhar* /dak'ar/ [da.k'ər] 'to jab'
   b. *dakar* /dakar/ [da.kar] 'to get s.t., with bad intentions'

(20) a. *kakhar* /kak'ar/ [ka.k'ə̂r] 'to dig'
   b. *kakar* /kakar/ [ka.kar] 'gutter'

(21) a. *sokhar* /sok'ar/ [so.k'ər] 'to pick fruit from a tree with a stick'
   b. *sokar* /sokar/ [so.kar] 'to die; to stir the ingredients of the native food
      dudul when cooking it in a pot'

(22) a. *kokhor* /kok'or/ [ko.k'ur] 'to skim; to scrape the surface lightly'
   b. *kokor* /kokor/ [ko.kor] 'to scrape out the contents of a coconut'

(23) a. *tekhaw* /tək'aw/ [tə.k'ə̂w] 'thief, robber'
   b. *tekaw* /təkaw/ [tə.kaw] 'sudden movement; surprised, startled'

(24) a. *talikhod* /talik'od/ [ta.lɪ.k'ud] 'to turn one's back'
   b. *likod* /likod/ [lɪ.kod] 'back (anatomical)'

(25) a. *lokhabang* /lok'abaŋ/ [lo.k'ə̂.baŋ] 'shell'
   b. *kabang* /kabaŋ/ [ka.baŋ] 'for one's haircut not to be in proper shape'

Three sets, items (26)–(28), are minimal pairs orthographically, but differ phonologically in the presence of a word-final glottal stop in one of the members of each pair:

(26) a. *tiphô* /tip'oʔ/ [tɪ.p'uʔ]'to jump down'
   b. *tipo* /tipo/ [tɪ.po] 'envy'

(27) a. *bothâ* /bot'aʔ/ [bo.t'ə̂ʔ] 'mud'
   b. *bota* /bota/ [bo.ta] 'blind'

(28) a. *izâ* /is'aʔ/ [ɪ.s'ə̂ʔ] 'question; to ask'
   b. *isa* /isa/ [ɪ.sa] 'one'

In addition to the above minimal pairs for root words, the heavy-light consonant contrast is an integral part of productive morphology (see section 6), as (29)–(34) illustrate:

(29) a. *ikhan* /ik'an/ [ɪ.k'ən] 'time for eating' (< *iG-kan)
   b. *ikan* /ikan/ [ɪ.kan] 'to take responsibility by feeding visitors at a
      wake' (<* i-kan)

(30) a. *khakan* /k'akan/ [k'ə̂.kan] 'edible (OF.ABIL.FUT)' (< *əG-ka-kan)
   b. *kakan* /kakan/ [ka.kan] 'eat (AF.PRS)' (< *ka-kan)

(31) a. *khaped* /k'apəd/ [k'ə̂.pəd] 'can be accompanied (OF.ABIL.FUT)' (<
      *əG-ka-pəd)
   b. *kaped* /kapəd/ [ka.pəd] 'companion' (< *ka-pəd)

(32) a. *thepad* /t'əpad/ [t'ɨ.pad] 'get off a vehicle (AF.FUT)' (< *əG-təpad)
   b. *tepad* /təpad/ [tə.pad] 'get off a vehicle (AF.IMP)' (< *Ø-təpad)

(33) a. *khan* /k'an/ [k'ə̞n] 'eat (AF.FUT)' (< *əG-kan)
   b. *kan* /kan/ [kan] 'eat (AF.IMP) (< * Ø-kan)

(34) a. *zong* /s'oŋ/ [s'uŋ] 'go (AF.FUT)' (< *əG-suŋ)
   b. *song* /soŋ/ [soŋ] 'go (AF.IMP)' (< * Ø-suŋ)

The above data establish beyond a reasonable doubt that a phonemic contrast exists between each numbered pair, which is represented orthographically by the C*h* clusters (or *z* for the fricative), and this contrast has never been represented in any nonnativized orthography. Establishing this contrast is the easy part; characterizing it proves much more difficult, and will be the topic of a subsequent paper based on ongoing phonetic analysis. Subjectively, the consonants *ph*, *th*, *z*, and *kh* have the following phonetic properties:

   (i)   They are often aspirated, but not always; in contrast, ordinary /p t s k/ are never aspirated.

   (ii) They have a more forceful release, even in the absence of aspiration. This was demonstrated for the heavy labial stop /p'/ using a U-tube manometer,[8] in which the force of the release of /p'/ was enough to send the water shooting out of the tube, a movement that was several times greater than the inch or so that the water moved with the release of /p/ or /b/ (including the latter's word-initial implosive allophone [ɓ]). John Ohala suggests that this result indicates that the heavy bilabial stop may be an ejective (pers. comm. September 7, 2009).

   (iii) They obligatorily cause the following vowel to be especially tense, strongly resonant, and higher than its value after nonheavy consonants, as illustrated in table 1.

This paper will center around a revised analysis of synchronic and diachronic phonology of the Maranao language, and the first steps towards the revision of the analysis of the verb system. First, however, we will take a look at the development of Maranao from Proto-Danaw.

2. DANAO HISTORICAL PHONOLOGY. The recognition of a Danao subgroup consisting of the closely related languages Maranao, Maguindanaon, Iranun (of Mindanao), and Sabah Iranun is uncontroversial and its history in the literature is discussed in full by Blust (1991).[9]

TABLE 1. RAISED AND UNRAISED VALUES OF MARANAO VOWELS

ORTHOGRAPHIC VOWEL	HISTORICAL SOURCE	UNRAISED VALUE (all lax)	RAISED VALUE (all tense)
a	*a	[a]	[ə̞]
e (or *u*)	*ə	[ə]	[ɨ]
i	*i	[ɛ] to low [ɪ]	[i]
o	*u	[o] to low [ʊ]	[u]

Allison (1979) presented a comparative analysis of the Danao languages. His Maranao data were based solely on a 372-item SIL wordlist collected in 1966 by Robert Ward,[10] who missed the four "heavy" Maranao consonants, and as a result, his description of Maranao phonology and its derivation from Proto-Danaw (PDAN) suffered in this regard. However, since the absolute set of Proto-Danaw protophonemes is rather straightforward—indeed, it is identical to the present phonology of Maguindanaon and Iranun, and likewise almost identical to Proto-Central Philippines and Proto-Greater Central Philippines—its reconstruction by Allison (shown in table 2) was accurate.

As Maguindanaon and Iranun have rather simple phonologies, the analysis of the Proto-Danaw phonological system in table 2 is correct, and is sufficient for the description of the historical phonology of those two languages. Iranun itself (regardless of the dialect) is the most phonologically conservative of the Danao languages, virtually unchanged from Proto-Danaw. Maranao, however, is a different story. It contains phonemes that resulted from the coalescence of what were homorganic voiced-voiceless consonant clusters in Proto-Danaw, and were also voiced-voiceless consonant clusters (albeit not necessarily homorganic) in Proto-Greater Central Philippines. In order to derive the Maranao phonology from Proto-Danaw, we not only need individual reconstructible segments, but also reconstructible *-CC- sequences.[11] In turn, on a higher level, a full analysis of the derivation of PDAN from PSPH, PGCPH, and PPH requires the reconstructibility of consonant clusters in those higher-level protolanguages. This is difficult without a considerable amount of data for their daughter languages: many of the forms with medial consonant clusters reconstructible at the highest levels—Proto-

TABLE 2. PROTO-DANAW PHONEMES (ACCORDING TO ALLISON 1979)

*p	*t	*k	*ʔ		*i		*u
*b	*d	*g				*ə	
*m	*n	*ŋ				*a	
	*s						
	*l						
	*r						
*w	*y						

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9. There has been some confusion in the naming of the languages of this group, since many adjacent ethnolinguistic groups call the Iranun "Ilanun" /i.lá.nun/ (variously spelled "Illanen," "Illanun," "Illanon," or in variants with only one "l"). However, there is no ethnolinguistic group that calls itself **/ilanun/ (or any variation in spelling thereof), as both the Iranun of Mindanao and the Iranun of western and eastern Sabah pronounce the name with /r/, not /l/. The Iranun of Mindanao are still located in Cotabato, the seat of the old Sultanate of Maguindanao, and both the Maranao and Maguindanaon claim that the royal lineage of the Sultan of Maguindanao was Iranun, not Maguindanaon. It is interesting to note that the Maranao and Maguindanaon themselves—especially scholars and activists—actually self-identify as Iranun on some level, to the extent that "Maranao" or "Maguindanaon", while now the primary ethnic distinction, can be described as branches of a larger ethnic group whose endonym is "Iranun."

10. In another case of extremely bad luck, Allison decided to elicit his own data from speakers of Iranun and Maguindanaon, but did not do so for Maranao, the language that would have made the most difference.

11. Under an alternate analysis to be discussed and rejected in section 4, it would even be necessary to reconstruct *-CCV- sequences in order to explain the Maranao reflexes.

Philippines (PPн), Proto–Malayo-Polynesian (PMP), or Proto-Austronesian (PAɴ)—do not survive into a large enough number of the lowest-level daughter languages. Of those forms that have survived, most have had their consonant clusters assimilated or simplified in daughter languages of the Danao, Subanen, and Mongondow-Gorontalo subgroups, making them difficult to recognize without previous knowledge of their reconstructible source. Therefore, without large amounts of lexical data, there are not enough reconstructible specimens of each consonant cluster to be able to authoritatively state their regular reflexes. Data of this type were not previously available (certainly not when Allison was writing), and what was available was not easily accessible. Fortunately, the first author has carried out fieldwork on most or all of these lowest-level GCPн languages, and has benefited enormously from computer-searchable dictionary databases—in particular, one for Western Subanon by William and Lee Hall of the Summer Institute of Linguistics (SIL); another for Maguindanaon by a group of contributors including Luke Schroeder, Bruce Skoropinski, and Bruce Van Zante, also of SIL; and a third for Sabah Iranun by Pandikar Padi of Kota Belud, Sabah, Malaysia. These databases allow searches for segments—and more importantly, sequences of segments—in a quick and comprehensive manner that was not previously possible. This has led to the reconstruction of over 150 Proto-Danaw forms with consonant clusters based on Maranao, Maguindanaon, and Iranun cognates, presented in appendix 1. By examining this material, we can determine the Proto-Danaw source of the Maranao heavy consonants.

As seen in appendix 1, Proto-Danaw had a series of homorganic voiced-voiceless medial clusters *bp, *dt, *ds, and *gk. These clusters are an areal feature that can be found in the Danao languages, adjacent Manobo languages, and Ida'an-Begak, as well as a number of other Bornean languages (for discussion of the latter see Blust 2009). There is no indication that these consonant sequences in Maguindanaon, Iranun, or Proto-Danaw are unit phonemes. However, in Maranao they became the "heavy" consonants written (by Maranao) as *ph, th, z,* and *kh.* These clusters were not merely simplified, as one is led to believe from previous studies of Maranao, in which the reflexes of Proto-Danaw *bp, *dt, *ds, *gk are represented as having merged with the reflexes of *p, *t, *s, *k, respectively.[12] Instead, they became heavy consonants, which are the onsets of syllables in which the vowel is obligatorily tensed and raised. Native speakers of Maranao consistently hear (and spell) a consonant contrast in the same position that Maguindanaon and Iranun have homorganic consonant clusters, even though most Maranao do not speak Iranun or Maguindanaon, and have virtually no contact with either language. Furthermore, although the Proto-Danaw, Maguindanaon, and Iranun equivalents are clusters, the Maranao reflexes are unit phonemes, as evidenced by the lack of any gemination or splitting of the consonant between the coda of one syllable and the onset of the following syllable.

3. MARANAO PHONOLOGY AND PHONETICS. Table 3 illustrates the phoneme inventory of Maranao according to the current analysis.

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12. This is not to say that such clusters cannot simply be reduced in daughter languages. In fact, some Greater Central Philippine languages like Mongondow and other Mongondow-Gorontalo languages have simply reduced most earlier consonant clusters.

Table 1 illustrated the variation in vowels after heavy and plain consonants. The heavy consonants /p'/, /t'/, /s'/, and /k'/ obligatorily tense and raise a following vowel, but they are not the only consonants that cause vowel raising. The voiced stops—in which no heavy-light contrast exists—optionally cause raising as well, as illustrated in examples (35)–(42):

(35) *dâ* /daʔ/   > [dǝʔ] 'no; none'

(36) *bolotho* /bolot'o/   >[bu.lu.t'u] 'rainbow'

(37) *mbayadan* /mbayadan/   > [mbǝ̣.ya.dǝ̣n] 'will pay (LF)'

(38) *dowa* /dowa/   > [du.wǝ̣] 'two'

(39) *ogop* /ogop/   >[o.gup] 'help'

(40) *miyagogopâ* /miyagogopaʔ/ >[mɪ.ya.gu.gu.paʔ] 'helped each other'

(41) *da den* /da dǝn/   > [dǝ̣.dǝn] ~ [dǝ̣.dn̩] 'no more; all gone'

(42) *gagawii* /gagawiʔi/   > [gǝ̣.gǝ̣.wɪ.ʔɪ] 'day'

Two consonants, /l/ and /ʔ/, allow raising to pass through them, but never trigger raising on their own, as can be observed from the pair *khowaen* [k'u.wǝ̣.ʔǝn] 'will get (OF.FUT)' vs. *kowaa* [ko.wa.ʔa] 'get it! (OF.IMP)'. Examples (43)–(45) illustrate vowel raising passing through /ʔ/ and /l/, whether from obligatory raising by a heavy consonant /p' t' s' k'/, or from optional raising after /b d g/:

(43) *khowaen* /k'owaʔ-ǝn/   > [k'u.wǝ̣.ʔǝn] 'will get (OF.FUT)'

(44) *thagoon* /t'agoʔ-on/   > [t'ǝ̣.gu.ʔun] 'will put away (OF.FUT)'

(45) *bolotho* /bolot'o/   > [bu.lu.t'u] 'rainbow'

Semivowels also initially appear transparent to vowel raising, but this only happens in cases where [w] and [y] are predictably inserted between underlying high vowels and following low vowels,[13] as in *dowa* [du.wǝ̣] 'two', *khowaen* [k'u.wǝ̣.ʔǝn] 'will get (OF.FUT)', and *padian* [pa.di.yǝ̣n] 'market'. In cases where the semivowels are clearly phonemic, they can be observed to block vowel raising, as in the middle syllable of *mbayadan* [m.bǝ̣.ya.dǝ̣n] 'will pay (LF.FUT)' (not **[m.bǝ̣.yǝ̣.dǝ̣n]), in the final syllable

TABLE 3. THE REANALYZED MARANAO PHONEME INVENTORY

p	t	k	ʔ		i		o
p'	t'	k'				ǝ	
b	d	g				a	
m	n	ŋ					
	s						
	s'						
	l						
	r						
w	y						

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13. There do not appear to be cases in Maranao where /w/ or /y/ occur phonemically between a high vowel and a following low vowel, and Maranao themselves vary in spelling convention between the Tagalog type where predictable glides are always written, and the Malay type where predictable glides are never written.

of *pekhawan* [pə.kʼ ‸ə.wan] 'worry about' (not **[pə̱.ka̱.wə̱n]), and in the second syllable of *khawaw* [kʼ ‸ə.waw] 'thirsty' (not **[kʼ ‸ə.wə̱w]).

In none of these optional occurrences of vowel raising do Maranao hear a contrastive difference, and they continue to insist that the vowel is one of the four normal vowels, orthographically *a*, *e*, *i*, or *o*. The only place where Maranao do hear a contrastive difference is between the heavy consonants /pʼ tʼ sʼ kʼ/ vs. the light consonants /p t s k/. Non-Maranao, however, often misinterpret the allophonic vowel differences as separate phonemes.

As outlined in table 4, the consonants of Maranao can be classified into four groups according to their characteristics in relation to vowel raising: (1) those that never allow raising of the following vowel (/p t k s m n ŋ r w y/); (2) those that obligatorily cause raising of the following vowel (/pʼ tʼ sʼ kʼ/); (3) those that optionally cause raising of the following vowel (/b d g/); and (4) those that do not themselves cause vowel raising but are "transparent" in the sense that the following vowel may still be raised if the preceding syllable contains a raised vowel (/l ʔ/). Note that consonants that are "invisible" in the rightward spread of heavy syllables are similar to those that are transparent to nasal spreading in Bornean languages as described in Blust (1997a).

4. AN ALTERNATE ANALYSIS: COULD IT BE THE VOWELS? Earlier in this paper (section 2 and footnote 11), it was suggested that an alternate analysis is possible, which would still recognize 23 phonemes, by assigning the four extra contrasts to the vowels rather than to the consonants. Under this analysis, illustrated in table 5, there would be 15 consonants (the same as in the nonnativized orthography) but 8 vowels /a ɪ i o u ɨ ə ə̱/.[14] This is the only other viable analysis that would preserve the 23-phoneme contrast that is observable from minimal pairs distinguished by native speakers.

TABLE 4. FOUR CATEGORIES OF CONSONANTS ACCORDING TO EFFECT ON FOLLOWING VOWEL

		/a/	/i/	/o/	/ə/
1. non-raising	/p t k s m n ŋ r w y/	a	ɪ	o	ə
2. obligatory raising	/pʼ tʼ sʼ kʼ/	ə̱	i	u	ɨ
3. optional raising	/b d g/	a ~ ə̱	ɪ ~ i	o ~ u	ə ~ ɨ
4. transparent	/l ʔ/	a	ɪ	o	ə

TABLE 5. MARANAO PHONEMES UNDER THE REJECTED ALTERNATIVE ANALYSIS

p	t	k	ʔ		i	ɨ	u
b	d	g			ɪ	ə̱	o
m	n	ŋ				ə	
	s					a	
	l						
	r						
w	y						

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14. Note that no orthography has ever represented more than five vowels, either /a i o ə u/ as in the Dansalan College Foundation, Inc. *Maranao Dictionary* (1998) and Laubach (1937), or /a i o ə ɨ/ as in the second (1996) edition of McKaughan and Macaraya's dictionary.

This would be an attractive analysis except that it forces us to accept puzzling distributional limitations on the vowels. The full eight vowels would contrast only after four of the 15 consonants (/p t s k/). After the other 11 consonants, only four vowels would contrast, and the other four would either not occur, or would be in free variation with the first four: /i/ with /ɪ/, /u/ with /o/, /ɨ/ with /ə/, and /ə̝/ with /a/. As problematic as such distributional limitations on the vowels would be, it could certainly be argued that the earlier consonant contrast had been phonemicized into the vowel system. More problematic is the fact that the eight-vowel analysis would ignore native speaker intuitions as reflected in the nativized orthography. It might be argued that the spelling system was archaic, but this would hardly be convincing, since the nativized orthography was developed within the past 40 years by Maranao scholars from all sides of Lake Lanao, and is the most commonly used orthography today among native Maranao writers. Instead, it is primarily the distributional limitations of vowels beyond the basic four /a i o ə/, and their allophonic variation or absence after most of the consonants, that reveals the weakness of the eight-vowel analysis.

Even the allomorphic variation in the 2nd person genitive pronoun supports the four-vowel analysis, as illustrated in phrases (46)–(49):

(46) *lithâ*   *aka*
    /lit'aʔ   =Vka/
    [lɪ.tə̝.ʔa.ka] (careful pronunciation)
    [lɪ.tə̝.ʔə̝.ka] (normal pronunciation)
    OF.PAST.cook 2SG.GEN
    'You cooked it.'

(47) *amâ*   *aka*
    /amaʔ   =Vka/
    [a.ma.ʔa.ka]
    father   2SG.GEN
    'your father'

(48) *batî*   *ika*
    /batiʔ   =Vka/
    [ba.tɪ.ʔɪ.ka]
    brother.in.law 2SG.GEN
    'your brother-in-law'

(49) *babô*   *oka*
    /baboʔ   =Vka/
    [bə̝.bu.ʔo.ka] (careful pronunciation)
    [bə̝.bu.ʔu.ka] (normal pronunciation)
    aunt   2SG.GEN
    'your aunt'

After glottal stop–final forms, the 2nd person genitive pronoun takes the clitic form /Vka/, in which the V is a copy vowel of the final vowel of the preceding word. In rapid speech, *lithâ aka* is pronounced [lɪ.t'ə̝.ʔə̝.ká] (as would be expected, since the 2nd person genitive pronoun is a clitic and vowel raising passes through /ʔ/). However, in careful pronunciation, the first morpheme is [lɪ.t'əʔ], and the second [a.ká]. Furthermore, the pronoun after *lithâ* is written *aka*, not **eka*. That **aka* is not the underlying form is evident in the fact that after *batî* /batiʔ/ 'brother-in-law' and *babô* /baboʔ/ 'aunt', the pronouns are [ɪká] and

[oká], respectively, and not **[aká]. Thus, this is also evidence indicating that the phonemic vowel of the final syllable of *lithâ* /lit'aʔ/ is /a/, and not /ə̣/.

The awkward, highly unlikely proposal of having eight vowels, half of which only contrast after less than a third (four out of 15) of the language's consonants, is only avoidable by positing the contrast in the consonant system. By positing a 19-consonant, four-vowel system as illustrated in table 3 and described in section 3, we fully account not only for native intuitions and historical derivation, but also for the variation in the vowels in the modern language. All four vowels in this analysis would contrast after all 19 consonants, and it would also explain the variation after /b d g/, since the voiced stops /b d g/ involve the same type of muscular tensing to produce the voicing that was present in the first member of the Proto-Danaw homorganic clusters *bp, *dt, *ds, and *gk. As a result, they had the same affect on the following vowel, albeit not obligatorily, as there is no heavy-light contrast in the voiced consonants.

The eight-vowel analysis is therefore rejected in favor of the 19-consonant analysis. It is a possibility that, in the future, the heavy-light contrast in the consonants may be lost if the contrast becomes phonemicized into the vowel system. If that happens, we would expect the allophonic variation after the other consonants to be lost, so that the phonemic nature of all eight vowels will be transparent. Either way, the contemporary reality is that all previous analyses and representations, except for the nativized orthography, were lacking in that they recognized only 19 of Maranao's 23 phonemes.

The logic of this analysis is similar to that of Bender (1968), who proposed a simplification of the vowel system of Marshallese based on "a number of [suspicious] distributional limitations implicit in earlier phonemicizations" (1968:16), namely "severe but systematic restrictions on the occurrence of short vowels in syllables introduced and closed by consonants" (1968:19). He was thus able to reduce the 12-vowel system of Bender (1963) to a four-vowel system with twelve allophones predictable from their adjacency to a velarized, palatalized, or labialized consonant. While the details of the Maranao and Marshallese situations are different, both languages have divergent sets of surface vowels that are predictable from the qualities of adjacent consonants. One key difference is that earlier analyses of Marshallese recognized all 12 surface vowels (albeit as phonemes, not allophones), but no analysis of Maranao ever recognized the full eight phonetic vowels (the unraised [a ə ɪ o] and their respective raised allophones [ə̣ ɨ i u]).

5. MARANAO DIACHRONIC AND SYNCHRONIC PHONOLOGY REVISED. Having established the phonemic nature of the four heavy stops and their effects on the vowels, we can now offer a corrected analysis of the synchronic and diachronic phonology of Maranao. In general, where phoneme sequences are not concerned, the reflexes of all PSPH/PGCPH phonemes are straightforward, except for the seemingly unconditioned splits of PGCPH *d to PDAN *d and *r, and PGCPH *b to PDAN *b and *w, both of which are beyond the scope of this paper.[15]

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15. These two splits may also be areal features, as they appear to also be found in Sabahan languages (e.g., Sabahan Bisaya, Lotud, Tatana). They may also be the result of borrowing, as was demonstrated for Tiruray by Blust (1992).

5.1 INDIVIDUAL SEGMENTS. Major developments from Proto-Greater Central Philippines into Proto-Danaw are as follows.

PGCPH *ʔ is lost in Danao languages except word-finally and intervocalically. Maranao preserves the glottal stop intervocalically but it can be dropped in colloquial speech. In phrases, word-final glottal stops are only pronounced before a vowel-initial form, or clause-finally. In consonant clusters, the glottal stop was lost: *mama* 'man' (< *ʔamaʔama), *masem* 'sour' (< *ma-ʔalsəm), *tolan* 'bone' (< *tuʔlan), *bago* 'new' (< *baʔgu), and *paginom* 'will drink (AF)' (< *pag-ʔinum).

PGCPH *h was lost in all environments. In some forms, such as *daon* /daʔon/ 'leaf' (< *dahun), it was replaced by a glottal stop. Elsewhere, it disappeared completely: *arək* 'kiss' (< *harək), *ilaw* 'unripe' (< *hilaw), *potaw* 'iron' (< *puthaw), *mamot* 'fragrant' (< *mahamut). Many Maranao now pronounce /h/ in place of the voiceless pharyngeal fricative of Arabic (also pronounced as /h/ in colloquial Malay/Indonesian and in recent loans from Arabic in languages like English), but this consonant was traditionally pronounced as /k/ in borrowings into Maranao: e.g., *Alkamdolila* 'Thanks be to God' (Malay *Alhamdullillah*), *kalal* 'halal (any product that may be consumed according to Islam)', *karam* 'haram (any product that is forbidden in Islam)', *Akad* 'Sunday' (Malay *Ahad*), *kadî* 'title for a Muslim who has performed the *hajj* pilgrimage to Mecca' (Malay *haji*).

PGCPH *n is lost in the infix *<in> except when followed by /i/, including in compound prefixes like *miyag-* (< *minag-), *piyag-* (< *pinag-), *ming-* (< *minang-), *miyaka-* (< *minaka-).

PGCPH prepenultimate *a was neutralized to /ə/ in affixes with closed codas, including prefixes like *mag- and *maN-, which are reflected with schwa instead of *a (e.g., *meng-, peng-, pekha-, pephaka-, pephaki-*), except where they were affixed to vowel-initial forms, where the /g/ was reanalyzed as the onset of the following syllable.

Unlike many Greater Central Philippine languages, monosyllabic content morphemes are tolerated in Maranao. PGCPH forms that had sequences *-Vʔ ə- or *-Vhə- dropped the medial glottal stop or *h and then the schwa: *kan* 'eat' (< *kaʔən), *lig* 'neck' (< *liʔəg), *bok* 'hair' (< *buhək), *lô* 'teardrop' (< *luhəʔ). Other forms that had an initial *ʔə- or *ʔa- dropped the glottal stop and then *ə or *a: *leb* 'knee' (< *ʔaləb), *ped* 'other, companion' (< *ʔəpəd), *tot* 'flatulence' (< *ʔətut). In disyllabic forms that in Proto-Danaw began with a schwa followed by a homorganic cluster, the schwa is dropped, resulting in a monosyllable beginning with a heavy consonant: *khan* 'will eat (AF)' (< PDAN *əg-kan), *thak* 'drip' (< PDAN *ədtak), *thig* 'statement; what was said' (< PDAN *ədtig). Although there is no definite evidence for an underlying initial schwa in these words, some prefixed forms show variants in which the medial schwa may be epenthetic or a reflex of Proto-Danaw initial *ə: *pagethak ~ pagthak* 'dripping' or *phagethay ~ phagthay* 'taking a long time'.

As a result of the absorption of the schwa by a preceding vowel, an ablaut-like alternation has developed in modern Maranao, where a root whose first vowel is /ə/ replaces the schwa with /i/ in forms that were infixed with Object Focus <iy>: *kikheb* 'bit (OF.PST)' < *kekheb* 'bite'; *sipâ* 'chewed (OF.PST)' < *sepâ* 'chew'; *kides* 'crushed lice (OF.PST)' < *kedes* 'crush lice'. Ablaut in Maranao is reminiscent of the similar phenomenon reported in Blust (1997b) for a number of languages in northwest Borneo.

It is interesting to note that word-initial /b/, /d/, and /g/ are implosives. This is potentially significant because, if the so-called heavy consonants of Maranao turn out to be

ejectives, then Maranao will be one of the relatively few languages to have both implo-
sives and ejectives.

Table 6 outlines the regular historical sources of the Maranao phonemes.

5.2 CONSONANT CLUSTERS. Particularly relevant to the current discussion is
that Proto-Danaw (with its daughter languages) was generally intolerant of most conso-
nant clusters, a characteristic shared with Subanen languages,[16] among others. Section 2
above discussed one such solution that was employed by Proto-Danaw to avoid such
clusters, and which is one of the central issues of this paper: the assimilation of -C_1C_2-
clusters where C_1 was voiced and C_2 was voiceless (*p, *t, *s, *k) to produce homor-
ganic clusters *bp, *dt, *ds, and *gk. However, very few other consonant clusters exist in
native Maranao words.

In reduplicated monosyllables where both C_1 and C_2 had the same voicing (either both
voiced or both voiceless), or where C_1 was voiceless and C_2 was voiced, the clusters were
simply reduced, as in (50)–(55), where TAG = Tagalog and WSUB = Western Subanon:

(50) Maranao *rareb* 'chest', Maguindanaon *laleb* < PDAN *rarəb, PGCPH
      *dəbdəb (cf. TAG *dibdib*, WSUB *gigdob*)

(51) Maranao, Sabah Iranun, Maguindanaon *papak* 'wing' < PGCPH *pak-
      pak (cf. TAG *pakpak,* WSUB *gokpak*)

(52) Maranao *popok,* Sabah Iranun, Maguindanaon *pupuk* 'hit' < PGCPH
      *pukpuk (cf. TAG *pukpok*)

(53) Maranao *pipis* 'young, of fish', Maguindanaon *pipis* 'young, of an animal'
      < PGCPH *pispis (cf. WSUB *gokpis* 'baby bird', Ilonggo *pispis* 'bird')

(54) Maranao *bobok,* Maguindanaon, Sabah Iranun *bubuk* 'woodborer' <
      PGCPH *bukbuk (cf. TAG *bukbok*, WSUB *bokbuk ~ gokbuk*)

TABLE 6. HISTORICAL SOURCES OF MARANAO PHONEMES

MARANAO	PDAN	PSPH/PGCPH	MARANAO	PDAN	PSPH/PGCPH
a	*a	*a	o	*u	*u
b	*b	*b	p	*p	*p
d	*d	*d	p'	*bp	*Cp (if C = voiced)
ə	*ə	*ə (some *a†)	r	*r	*d, *l
g	*g	*g	s	*s	*s
i	*i	*i	s'	*ds	*Cs (if C = voiced)
k	*k	*k	t	*t	*t
k'	*gk	*Ck (if C = voiced)	t'	*dt	*Ct (if C = voiced)
l	*l	*l	w	*w	*w, *b
m	*m	*m	y	*y	*y
n	*n	*n	ʔ	*ʔ	*ʔ
ŋ	*ŋ	*ŋ	Ø/*ʔ	Ø/*ʔ	*h

†   Mainly the result of prepenultimate neutralization of *a.

16. Lobel and Hall (n.d.) describe the Subanen situation, where one of the languages (Southern
Subanen) developed aspirated consonants in circumstances similar to, yet different from,
those of Maranao's heavy consonants.

(55) Maranao, Sabah Iranun, Maguindanaon *bibit* 'carry, bring' < PGCPʜ *bitbit (cf. Tᴀɢ *bitbit,* WSᴜʙ *bokbit ~ okbit ~ gokbit*)

Another two examples, (56) and (57), are found only in Sabah Iranun but have reconstructible sources for Proto–Greater Central Philippines:

(56) Sabah Iranun *sesep* 'suck' < PGCPʜ *səpsəp (cf. Tᴀɢ *sipsip,* WSᴜʙ *oksop*)

(57) Sabah Iranun *bubug* 'break up, demolish' < PGCPʜ *bugbug (cf. Tᴀɢ *bugbog* 'to beat up')

In each of these eight items, the first member of the original medial cluster has been dropped. In addition, items (58)–(61) show reduction of *-dl- and *-ld-.

(58) Maranao, Maguindanaon *belay* 'tired' < PGCPʜ *bədlay

(59) Maranao, Sabah Iranun *lek* 'afraid', Maguindanaon *gilek* < PGCPʜ *haldək (via Pre–Proto-Danaw *alək)

(60) Maranao *alang* 'block, obstruct' < PGCPʜ *hadlang

(61) Maranao *torô*, Sabah Iranun *turû*, Maguindanaon *tulu* 'point' < PGCPʜ *tudluʔ ~ *tulduʔ (via Pre–Proto-Danaw *tuduʔ)

More examples of this type must be found before an in-depth analysis can be made, but this is not central to the main concern of this paper.

As illustrated in table 7, consonant clusters were avoided in part by grammaticization, as in the genitive pronouns, where half of the forms (1ꜱɢ, 2ꜱɢ, 3ꜱɢ, and 2ᴘʟ) have consonant-initial and vowel-initial allomorphs, while the 1ᴇxᴄʟ and 3ᴘʟ forms appear only in vowel-initial forms, even though cognates in most other Greater Central Philippine languages have an initial /n/.

Finally, it is also noteworthy that, in rapid speech, Maranao speakers often break up clusters across word boundaries by inserting a schwa between them, as in *lokes ta* [lo.kə.sə.ta] 'our parents'. Furthermore, consonant-final words are often followed by a nonphonemic [-əʔ] when pronounced in isolation or when utterance-final.

6. IMPACT ON THE ANALYSIS OF THE VERB PARADIGMS. The new, more complete, analysis of Maranao's synchronic and diachronic phonology is as relevant to the morphology as it is to the lexicon. Philippine languages are notorious for their complex

TABLE 7. MARANAO GENITIVE PRONOUNS

	AFTER CONSONANTS	AFTER VOWELS
1ꜱɢ	aken, ko	aken, ko
2ꜱɢ	Vka, neka, ka†	ngka
3ꜱɢ	iyan	niyan
1ᴇxᴄʟ	ami	ami
1ɪɴᴄʟ.ᴅᴜᴀʟ	ta	ta
1ɪɴᴄʟ.ᴘʟ	tano	tano
2ᴘʟ	iyo	niyo
3ᴘʟ	iran	iran

† *Ngka* follows vowel-final words; *neka* follows most consonants except glottal stop, but *ka* is heard after /r/ and /s/; after /n/, all three variants occur, as well as the dropping of the final /n/ that may also be analyzed as assimilation to the /ŋ/ of *ngka* or the /k/ of *ka.*

verb morphology, and Maranao, far from being an exception, actually has one of the most complex systems of verb morphology of any Philippine language (even without counting its morphophonemic alternations). As if that wasn't enough, Maranao's complicated historical (and synchronic) phonology makes its verb system much harder to decipher than comparable systems in most other Philippine languages. The tables of verbal paradigms presented by McKaughan (1958) and McKaughan and Macaraya (1967, 1996) are sufficient to impress upon any reader the complexity of the Maranao verb system. However, because they were working with a phonological analysis that missed four of Maranao's phonemes, it made the task of reconciling the Maranao verb system with its historical source all but impossible. Two main errors in McKaughan and Macaraya's verb analysis can be traced to the problematic phonological analysis: (1) the proposal that certain tense-aspect forms in the Maranao verb system were formed by a replacive vowel; and (2) an underestimation of the significance of historical-comparative data for understanding the synchronic patterns of Maranao verbs.

As we will demonstrate in this section, the verbal system of Maranao cannot be coherently deciphered without an accurate analysis of its phonology. The proper phonological analysis, which was made possible by access to the nativized orthography and to historical-comparative data, is the key to decoding the verb system. When correctly analyzed, the level of difficulty of the Maranao verb system is drastically reduced, as patterns begin to emerge, and we can begin to understand the motivations behind the synchronic patterns that currently exist. As a result, it also becomes possible to reconcile the system of tense-aspect marking in Maranao with the systems of the closely related Iranun and Maguindanaon, and even with other Greater Central Philippine languages.

6.1 THE "REPLACIVE" VOWEL. The first major error in McKaughan and Macaraya's analysis of the verb system is in the claim that the present and future forms of Maranao verbs were marked by replacing the first vowel of the root or prefix. The earlier edition (1967) of McKaughan and Macaraya's dictionary only represented 4 vowels and 15 consonants and, like McKaughan (1958), claimed that the present and future forms of most verbs were formed by replacing /a/ with /ə/, or—even more strangely—by inserting /ə/ before the first vowel if that vowel was /i/ or /u/. The later edition of their dictionary (1996) attempted to correct the phonological analysis by adding an extra orthographic vowel *ae* that was purported to represent the vowel [ɨ] (that in reality represents both the [ɨ] allophone of /ə/ and the [ə̯] allophone of /a/, neither of which were distinguished in their 1967 dictionary).[17] McKaughan and Macaraya (1996:7) then write of a "replacive 'ae'" (instead of the earlier replacive *e*) that marked the "present progressive" and "immediate future" verb forms.[18] These descriptions would make the reader believe that either /ɨ/-ablaut or /ə/-ablaut exists in Maranao; they don't, as can be observed in table 8.[19]

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17. Instead of correcting the shortcomings of earlier analyses, the introduction of *ae* actually introduced new errors, as McKaughan and Macaraya (1996) spell words like Maranao *bago* /bago/ as *baego*, missing the fact that there is variation in the vowels after voiced stops like /b/, resulting in variation between the unraised [ba.go] and the raised [bə̯.gu].

18. Note that McKaughan and Macaraya (1996) do not mention a "present progressive" form for the Actor Focus <om> verbs, although it clearly exists (see table 11). In fact, in most cases, there are two competing present forms, and sometimes even two competing future forms, as illustrated in table 11.

TABLE 8. ATTESTED FUTURE ACTOR FOCUS VERBS

Root	Expected AF Future from McKaughan & Macaraya (1996)	Attested AF Future
taros 'continue'	**taeros [tiros]	*tharos* /t'a.ros/ [t'ə̣.ros]
tindeg 'stand'	**taendeg [tindəg] or **taeindeg [tiindəg]	*thindeg* /t'indəg/ [t'in.dəg]
soled 'enter'	**saeled [siləd] or **saeoled [sioləd]	*zoled* /s'oləd/ [s'u.ləd]
sembay 'exchange'	**saembay [simbay]	*zembay* /s'imbay/ [s'im.bay]

What McKaughan and Macaraya interpreted as a separate *ae* vowel, or as a replacive *e* or *ae* in the verbs, is actually allophonic variation resulting from the preceding heavy consonant (see section 2). In the verbal affixes that McKaughan and Macaraya represent as containing the vowel *ae*, the consonant preceding the *ae* is heavy as a result of historical prefixation with *paG- or *əG-.[20] When prefixed to words (or even to other prefixes) beginning with *p, *t, *s, or *k, these two prefixes resulted in the sequences *-bp-, *-dt-, *-ds-, and *-gk-, exactly the clusters that later developed into Maranao's heavy consonants. The results of these affixes and affix combinations can also be observed in Maguindanaon and Iranun, which before roots with initial voiceless consonants preserve prefix allomorphs like *ed- ~ eb- ~ eg-* (< *əG-), *ped- ~ peb- ~ peg-* (< *paG-),[21] and complex affixes with homorganic clusters like *pegka-*, *egka-*, *pebpa-,* and *ebpa-*, which are cognate with Maranao affixes *pekha-*, *kha-*, *pephaka-*, and *phaka-*, respectively. Table 9 compares verb prefixes in McKaughan and Macaraya's (1996) orthography and the nativized orthography, and provides reconstructible sources for these affixes in Proto-Danaw and a language ancestral to Proto-Danaw (ambiguously Pre-PDAN, PSPH, or PGCPH).[22] Note that forms in this table that refer to consonants becoming heavy are only applicable for roots with initial /p t s k/, and in these cases, an underlying form is provided alongside the affix as written in the nativized Maranao orthography. Additional tables of Maranao's verbal affixes are presented as appendix 2, arranged by focus, mode, and tense-aspect.

Reflexes of *mag-, *pag-, and *ag- are used in most Greater Central Philippine languages to mark tense-aspect contrasts in the *<um> paradigm that appear to be innovative. This is seen in Hanunoo, Southern (Aborlan) Tagbanwa, Pala-wan, Molbog, the Subanen languages, and a number of the Manobo languages, all of which mark the present, future, and/or subjunctive with a reflex of *mag-, *pag-, or *ag-, even in the *<um> paradigm where *mag- and *pag- historically did not appear. Zorc (1974:591) pointed out morphological similarities in the Actor Focus and Object Focus paradigms in Hanunoo, Southern (Aborlan) Tagbanwa, and Pala-wan (Palawano). However, he was writing at a time when

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19. While Maranao doesn't have ablaut involving the high central vowel (allophone) [ɨ], it does, however, have ablaut involving the high front vowel /i/, as discussed in 5.1. This has no bearing on the current discussion, though, as it is completely unrelated to any vowel raising phenomenon or to the heavy-light contrast in the consonants.

20. The symbol "G" indicates that, although deriving from PGCPH *g (< PPH *R), most reflexes were not /g/, but instead either assimilated to the place of the following consonant or were dropped. As such, "G" is not a protophoneme per se, but instead a morphophoneme representing an assimilative voiced stop, similar to the symbol "N" that represents an assimilative nasal.

21. As already noted in footnote 12, word-initial and prefix-initial schwas are optional in Iranun and Maguindanaon.

22. Forms in table 9 marked with a following † are the most problematic in McKaughan and Macaraya's (1996) analysis, as they include the claim of a replacive "ae" vowel.

morphological data for Greater Central Philippine languages was still scarce, and 17 years before Blust (1991) proposed a Greater Central Philippines subgroup based on phonological and lexical innovations. Even Blust was writing without access to morphological data on most of the languages he assigned to this group, but the first author's fieldwork from 2004–2009, as well as the present reanalysis of Maranao phonology and verb morphology, validate the Greater Central Philippines hypothesis by revealing further innovations in the morphological systems of these languages, as shown in table 10 for the Object Focus of the *<um> paradigm.

TABLE 9. MARANAO VERB AFFIXES IN NATIVIZED ORTHOGRAPHY AND McKAUGHAN AND MACARAYA'S (1996) ORTHOGRAPHY

	McKaughan and Macaraya	Nativized Maranao Orthography	PDan	Pre-PDan (or PSPh/PGCPh)
AF.PRES	—	pe(C)h{V}- (/paG-/)	*paG-	*pag-
AF.FUT	**-ae-†	-h- (/C/ > heavy) (/G-/)	*əG-	*ag-
AF.ABIL.FUT	**paeka-	phaka-	*əbpaka-	*ag-paka-
AF.CAUS.FUT	**paeki-	phaki-	*əbpaki-	*ag-paki-
AF.CAUS.PRES	**pepaeki-	pephaki-	*pəbpaki-	*pag-paki-
AF.ABIL.CAUS.FUT	**mapaeki-	maphaki-	*mabpaki-	*mag-paki-
AF.DISTR.FUT	**paeN-	phaN-	*əbpaN-	*ag-paN-
OF.PRES	**pe-..-ae-..-en†	pe{C}h{V}-..-en (pe-, + /C/ > heavy) (/paG-..-ən/)	*paG-..-ən	*pag-..-ən
OF.FUT	**-ae-..-en†	{C}h{V}-..-en (/C/ > heavy) (/G-..-ən/)	*əG-..-ən	*ag-..-en
LF.PRES	**pe-..-ae-..-an†	pe{C}h{V}-..-an (pe-, + /C/ > heavy) (/paG-..-an/)	*paG-..-ən	*pag-..-an
LF.FUT	**-ae-..-an†	{C}h{V}-..-en (C > heavy) (/G-..-ən/)	*əG-..-ən	*ag-..-an
BF.PRES	**ipe-..-ae-†	ipe{C}h{V}- (ipe-, + /C/ > heavy) (/ipaG-/)	*ipaG-	*ipag-
BF.FUT	**i-..-ae-†	i{C}h{V}- (i-, + /C/ > heavy) (/iG-/)	*iG-	*ig-
OF.ABIL.PRES	**pekae-	pekha-	*pəgka-	*pagka-
OF.ABIL.FUT	**kae-	kha-	*əgka-	*agka-
LF.ABIL.PRES	**pekae-..-an	pekha-..-an	*pəgka-..-an	*pagka-..-an
LF.ABIL.FUT	**kae-..-an	kha-..-an	*əgka-..-an	*agka-..-an
OF.ABIL.CAUS.FUT	**mapaeka-	maphaka-	*mabpaka-	*mag-paka-
LF.ABIL.CAUS.PRES	**pekaepaki-..-an	pekhapaki-..-an	*pəgkapaki-..-an	*pagka-paki-..-an
LF.ABIL.CAUS.FUT	**kaepaki-..-an	khapaki-..-an	*əgkapaki-..-an	*agkapaki-..an
BF.ABIL.CAUS.FUT	**kipaeki-	kiphaki-	*kibpaki-	*kig-paki-
OF.DISTR.PRES	**pepaeN-..-en	pephaN-..-en	*pəbpaN-..-ən	*pag-paN-..-ən
OF.DISTR.FUT	**paeN-..-en	phaN-..-en	*əbpaN-..-ən	*ag-paN-..-ən
BF.DISTR.PRES	**ipepaeN-	ipephaN-	*ipəbpaN-	*ipag-paN-
BF.DISTR.FUT	**ipaeN-	iphaN-	*ibpaN-	*ig-paN-

TABLE 10. OBJECT FOCUS VERB CONJUGATIONS IN VARIOUS GREATER CENTRAL PHILIPPINE LANGUAGES

	MARANAO	PROTO-DANAW	SOUTHERN SUBANEN	HANUNOO	SOUTHERN (ABORLAN) TAGBANWA	PALA-WAN, PANIMUSAN	MOLBOG
INFINITIVE	-ən	*-ən	-ən	-un	-ən	-ən	-on
PAST	\<i(n)>	*\<in>	\<in>	\<in>	\<in>	\<in>	\<in>
PRESENT	paG-..-ən	*paG-..-ən	pəG-..-ən	pag-..-un	pag-..-ən	pag-..-ən	og-..-on
FUTURE	G-..-ən	*əG-..-ən	—	—	—	—	—
IMPERATIVE	-a	*-a	-a	-a	—	-aʔ	-aʔ

The emerging picture of the Maranao verbal system shows the following component morphemes:

(62) \<om> (< *\<um>) 'Actor Focus'
      mag- 'Actor Focus'
      -en (< *-ən) 'Object Focus'
      -an (< *-an) 'Location Focus'
      i- (< *i-) 'Beneficiary Focus; Object Focus #2'
      -a 'Object Focus subjunctive'
      -i 'Location Focus subjunctive'
      \<iy> ~ \<in> (< *\<in>) 'Past' (\<in> before /i/; \<iy> elsewhere)
      paG- (pe{C}h- ~ peg- ~ peng- ~ pag-) (< *pag-) 'present'
      G- ({C}h- ~ g- ~ ng-) (< *ag-) 'future'
      paki- 'causative'[23]
      paka- 'causative' (but also abilitative AF future *phaka-* < *ag-paka-)
      paN- 'distributive'
      maka- 'Actor Focus abilitative'
      ka- 'abilitative, etc.'
      ma- 'abilitative'
      iG- (< *i-ag-) 'future of beneficiary focus'

The abilitative forms of the beneficiary focus have an odd set of affixes, whose PGCPh sources are still unclear.[24] All other Maranao affixes, although strange in appearance synchronically, have rather clear historical sources. Previously, however, they appeared bizarre and unidentifiable, due to the erroneous phonemic analysis that concealed the origin of their component elements.

McKaughan and Macaraya's (1996) "replacive 'ae'" is problematic not only because there is no replacive vowel in Maranao, but also because it suggests that all vowels will become [ɨ] if they occur in the first syllable of present and future forms. Their earlier (1967) analysis was equally problematic, suggesting that if the first vowel of the root was /a/, then /ə/ would replace it, and if the first vowel was /i/ or /u/, then /ə/ would be inserted before it. Both of these proposals are incorrect, as can be observed from table 11, which

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23. Maranao, Iranun, and Sulawesi's Mongondow (and perhaps other Mongondow-Gorontalo languages) are the only languages I know of that use the prefixes *maki-* and *paki-* as causatives. This appears to be a semantic shift from PPH and PGCPH, since all other languages that I know of that have prefixes of the form *maki-* and *paki-* use them in a social and/or requestive meaning.
24. Tentatively, the Proto-Danaw sources of these affixes seem to be as follows: infinitive *mi-* < *ma-i-; past *mini-* < *mi- + *\<in> < earlier *ma\<in>i-, present *pekhi-* < *pəG-ka-i-, and future *khi-* < *əG-ka-i-.

illustrates the actual tense-aspect conjugations of Maranao verbs starting with all possible initial consonants.[25] Instead of a "replacive" vowel, the present and future tense-aspect forms are indicated by the shift of the initial consonant (if /p t s k/) to its heavy counterpart (/p' t' s' k'/), causing the following vowel to be raised: [a] > [ə̞], [ə] > [i̞], [ɪ] > [i], and [o]

TABLE 11. CONJUGATIONS OF MARANAO <om> VERBS

	INFINITIVE	PAST	PRESENT	FUTURE	IMPERATIVE
p	mamasa	miyamasa	pephamasa	phamasa	pamasa 'buy'
	mamola	miyamola	pephamola	phamola	pamola 'plant'
t	tomondog	tomiyondog	pethondog/ tomotondog	thondog	tondog 'follow'
	tomindeg	tominindeg	pethindeg/ tomitindeg	thindeg	tindeg 'stand'
k	koman	komiyan	pekhan	khan	kan 'eat'
	kowâ	kominowâ	pekhowâ	khowâ	kowâ 'get'
s	somendad	somindad	pezendad/ somesendad	zendad	sendad 'end'
	somilâ	sominilâ	pezilâ/somisilâ	zilâ	silâ 'explode'
b	maling	miyaling	pembaling	mbaling	baling 'return'
	megay	migay	pembegay	mbegay	begay 'give'
d	domekhâ	domikhâ	pendekhâ/ domedekhâ	ndekhâ	dekhâ 'rest'
	domidî	dominidî	pendidî/ domididî	ndidî	didî 'bubble'
g	gomanat	gomiyanat	pengganat/ gomaganat	ngganat	ganat 'leave, rise'
	gomoraok	gomiyoraok	penggoraok/ gomogoraok	nggoraok	goraok 'cry'
l	lomalakaw	lomiyalakaw	phelalakaw/ lomalalakaw	pelalakaw/ melalakaw	lalakaw 'walk'
	lomangoy	lomiyangoy	phelangoy/ lomalangoy	pelangoy/ melangoy	langoy 'swim'
r	romabak	romiyabak	pherabak/ romarabak	perabak/ merabak	rabak 'throw'
n	nomayaw	nomiyayaw	pephenayaw/ nomanayaw	phenayaw/ menayaw	nayaw 'wait'
ng	ngomenger	ngominger	ngomengenger	phengenger/ mengenger	ngenger 'snore'
	ngomisaw	ngominisaw	ngomingisaw	phengisaw/ mengisaw	ngisaw 'react badly'
a	mawâ	miyawâ	maawâ/ phagawâ	pagawâ/ magawâ	awâ 'leave'
	mayon	miyayon	maayon/ phagayon	pagayon/ magayon	awid 'bring'
i	minom	mininom	miinom/ phaginom	paginom/ maginom	inom 'drink'
	migâ	minigâ	miigâ/phagigâ	pagigâ/ magigâ	igâ 'lie down'
o	monot	miyonot	moonot/ phagonot	pagonot/ magonot	onot 'accompany'
	montod	miyontod	moontod/ phagontod	pagontod/ magontod	ontod 'sit'
e	mendâ	mindâ	meendâ	magendâ	endâ 'take off'
	medâ	midâ	meedâ	magedâ	edâ 'ride'

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25. As is common in Greater Central Philippine languages, Maranao does not appear to allow verb roots beginning with /m/ to be conjugated with <om>. Likewise, Maranao does not appear to have roots with initial /w/ or /y/ that are conjugated with <om>.

> [u]. As explained earlier, this synchronic shift is the result of what were *G-final prefixes in the protolanguage.

6.2 MORPHOPHONEMIC VARIATION AND ITS HISTORICAL SOURCES.

We now turn to the second major shortcoming in McKaughan's analysis of the verbal system, namely, the underestimation of morphophonemic variation, and its historical sources. Specifically, the situation outlined in section 6.1 applies if and only if the initial consonant of the root is /p t s k/. Elsewhere, the present and future forms are not marked in this way—neither by a heavy-light distinction, nor by some "replacive" vowel—nor could they be, as there is no heavy-light contrast in the voiced stops, semi-vowels, nasals, or /l r ʔ/. Likewise, if we look at vowel-initial forms, we see once again that the "replacive 'ae'" is nowhere to be found. In fact, the proposal of a universally applicable "replacive 'ae'" obscures one of the complex features of the Maranao verb system, one that is shared in concept if not in detail with other languages of western Mindanao, southern Palawan, and Sabah: that the form of the Actor Focus prefix depends on the initial consonant of the root. This probably was an areal development in which languages innovated a constraint against -gC- and -NC- clusters that resulted from prefixation with reflexes of *mag-/*pag- and *maN-/*paN-. This is true not only for the *mag-* verbs of Maranao (that were not mentioned as a separate category in any of McKaughan and Macaraya's verb analyses),[26] but even for the <om> verbs, which have present and future forms marked by a reflex of *pag- and/or *ag- (as do other GCPH languages such as Hanunoo, Southern Tagbanwa, Molbog, and Subanen, as illustrated in table 10). Even for Maranao verbs that follow the <om> paradigm (largely similar in meaning to their Tagalog and Waray <um> equivalents), present and future conjugations are formed with other affixes predictable by the initial segment of the root. The actual affixes used are summarized in table 12, based on the data in table 11.

TABLE 12. MARANAO ACTOR FOCUS AFFIXES BY INITIAL PHONEME OF ROOT

INITIAL PHONEME		<om> PRESENT	<om> FUTURE
VOWEL	a, i, o, ə	mVʔ- ~ phag-	pag-/mag-
VOICED STOPS	b	pem- ~ ComV-	m-
	d	pen- ~ ComV-	n-
	g	peng- ~ ComV-	ng-
VOICELESS STOPS	p, t, s, k	pe{C}h- (#C- > heavy) ~ ComV-	<h> (#C- > heavy)
LIQUIDS	l, r	phe- ~ ComV-	pe- ~ me-
NASALS	n	pephe- ~ ComV-	phe- ~ me-
	ŋ	ComV-	phe- ~ me-

26. That Maranao has an "<um> vs. mag-" contrast similar to that in Tagalog, Waray-Waray, and Old Bikol (see Lobel 2004) is demonstrated by the following:

	ayon 'agree'		inom 'drink'	
	<om> (sg.)	mag- (recip.)	<om> (normal)	mag- (of alcohol)
Infinitive	mayon	magayon	minom	maginom
Past	miyayon	miyagayon	mininom	miyaginom
Present	maayon	magaayon	miinom	magiinom
Future	magayon	phagayon	maginom	phaginom

Maranao morphophonemic rules are extremely complex, and a fuller, dedicated reanalysis of the verbal system of Maranao is currently being completed (Lobel and Riwarung n.d.). However, limiting ourselves to just the Actor Focus of the <om> paradigm for now, the rules are as follows:

(i) For the infinitive, <om> is infixed to most roots. For vowel-initial roots, this is reduced to a prefixed *m-*. For roots with an initial bilabial /b p/, the first syllable is dropped, leaving what appears to be a replacive *m-*. This latter process, called Pseudo Nasal Substitution (cf. Blust 2004), was once widespread even in Central Philippine languages like Old Tagalog, Old Bikol, Old Waray, and so on, as outlined in Lobel (2004).

(ii) The past form derives from PGCPH *<umin>. The full form <omin> is only preserved on consonant-initial roots in which the first vowel is /i/. Otherwise, the /n/ of the infix is dropped, in the same way that the /n/ of other past affixes is dropped (e.g., *miya-* < *mina-, *miyaka-* < *minaka-, *miyakapag-* < *minakapag-, *piya-* < *pina-, etc.). On vowel-initial roots, the first syllable is again dropped, leaving *miy-* as the prefix. On bilabial-initial roots, the first syllable is also dropped, leaving what appears to be a replacive *miy-*. On roots in which the initial vowel is schwa, the schwa is lost, leaving what appears to be /i/-ablaut.

(iii) The present form has two competing forms, one formed by CV- reduplication plus the <om> infix, the second formed by a reflex of PDAN *(əb)pəG-. For the first, the affix is C<om>V- for all consonant-initial roots, but for vowel-initial roots, the affix becomes *mVʔ-*, where V is a copy vowel of the first vowel of the root. In the second form, the realization of *pəG- depends on the first segment of the root: *phag-* on vowel-initial roots; *phe-* on roots with initial /n ŋ l r/; *pe*N- on roots with initial /b d g/, where N is a nasal that assimilates to the place of articulation of the following consonant (without replacing it); and *pe*{C}*h-* before a voiceless consonant /p t s k/, where the realization is *pe-* plus the shift of the first consonant of the root from /p t s k/ to a heavy /p' t' s' k'/.

(iv) The future form has one form before an initial stop or /s/, and two competing forms before /l r n ŋ/ and vowel-initial forms. Roots with initial voiceless consonants form their future with the shift of the initial consonant from /p t s k/ to a heavy /p' t' s' k'/. Roots with an initial voiced stop form their futures by prefixing the root with an assimilative (but not replacive) nasal. Vowel-initial roots can form their futures with either *mag-* or *pag-*. Forms with an initial nasal form their futures with *me-* and either *phe-* or *pe-*, and forms with initial /l/ or /r/ form their futures with either *me-* or *pe-*.

(v) In all cases, the Actor Focus imperative of <om> verbs is formed by a zero affix, as is common throughout Greater Central Philippine languages.

In conclusion, like the concept of a "replacive" vowel, the suggestion of a single method of forming the present and/or the future of Maranao verbs can also be observed to be incorrect in light of a fuller set of actual language data.

6.3 FROM *maG- TO *maN-. A look at tables 11 and 12 reveals that, when prefixed to words whose initial consonant is /b/, /d/, or /g/, the prefixes *maN-/*paN- have replaced the prefixes *maG-/*paG-. Recalling examples (50)–(61) in section 5.2., clusters of two voiced consonants in Pre–Proto-Danaw were simplified by dropping the first member of the cluster. It is reasonable to assume that the same phonological innovation would have affected the *-gC- clusters that occurred when *maG- was prefixed to a root word with initial /b/, /d/, or /g/. In this case, the resulting cluster simplification would have meant that the reflex of *mag- and *pag- would have been the same as the reflex of *ma- and *pa-. Therefore, it seems likely that the replacement of the *g-final prefixes (*mag-, *miyag-, *pag-, *piyag-) with *N-final prefixes (*maN-, *miyaN-, *paN-, *piyaN-) was motivated by the need to disambiguate the reflexes of the former from the reflexes of the *ma-, *miya-, and *pa- prefixes. As illustrated in table 13, the simplification of these clusters of voiced consonants probably included an intermediate step (Rule 1) in which the first member assimilated to the place of the second member, creating geminate consonants (note that this also happens in the Southern Subanen language, which has clear evidence of influence from Maranao and other Danao languages). However, at some point before Proto-Danaw, geminates were disallowed by Rule 2, which caused the simplification of the geminates. It is Rule 2 that would have caused the reflexes of *mag-/*pag- and *ma-/*pa- to merge for root words with an initial voiced stop. This untenable situation was fixed by Rule 3, which replaced *mag- with *maN- for roots that began with a voiced stop (note that this rule would have to occur simultaneously with Rule 2, or else it would have also applied to the *ma-* verbs). Table 13 illustrates this process with roots starting with /b/, /d/, and /g/, compared with the root *tindəg 'stand', where no geminate would have been produced.

The prefixes *me-/mi-/pe-/pi-* before root words with initial /l/, /r/, /n/, /ŋ/ are ambiguous as to whether they are reflexes of prefixes with final *G- or final *N-. The neutralization of *a to /ə/ indicates that some prefix-final consonant was present that allowed these reflexes to participate in Rule 4 (/a/ Neutralization in Closed-syllable prefix). However, there is no evidence to indicate whether this coda was a reflex of *G- or of *N- that later replaced it.

TABLE 13. REPLACEMENT OF *paG- WITH *paN- BEFORE /b d g/

RULE	*bayad 'pay'	*dəgkaʔ 'rest'	*ganat 'work'	*tindəg 'stand'
(Pre–Proto-Danaw AF present)	*pag-bayad	*pag-dəgkaʔ	*pag-ganat	*pag-tindəg
(1) Cluster Assimilation	*pab-bayad	*pad-dəgkaʔ	*pag-ganat	*pad-tindəg
(2) Geminate Simplification	*pabayad	*padəgkaʔ	*paganat	—
(3) Prefix Disambiguation	*paN-bayad	*paN-dəgkaʔ	*paN-ganat	—
(4) /a/ Neutralization in Closed-syllable Prefix[†]	*pəm-bayad	*pən-dəgkaʔ	*pəŋ-ganat	*pəd-tindəg
(Proto-Danaw AF Present)	*pəmbayad	*pəndəgkaʔ	*pəŋganat	*pədtindəg
(Maranao and Maguindanaon AF Present)	MAR, MGD *pembayad*	MAR *pendekhâ* /pəndək'aʔ/ MGD pendegka	MAR, MGD *pengganat*	MAR *pethindeg* /pet'indəg/ MGD *pedtindeg*

† Note that it is unclear at what point the *a > /ə/ shift took place in compound prefixes that contained consonant clusters, such as *pagka- and *pagpa-.

7. CONCLUSION. We have established that, despite at least four published dictionaries (McKaughan and Macaraya 1967, 1996, Dansalan College Foundation 1998, Tungol 1992) and a number of unpublished ones, several academic articles (McKaughan 1958, 1959, 1962, 1977, Ward and Forster 1967, Fleischman 1981, among others), a full Bible translation, and a reconstruction for its immediate protolanguage (Allison 1979), a crucially important feature of Maranao phonology was previously overlooked by all except the mainstream (that is, Muslim) Maranao community: the contrast between the "light" voiceless consonants /p t s k/ and their "heavy" counterparts /p' t' s' k'/ (written *ph, th, z,* and *kh* by mainstream Maranao writers). In spite of its being a unique contrast in the Philippines, numerous mainstream Maranao scholars were not only aware of this contrast, but incorporated it into a nativized orthography that was developed and used at least as early as Ansano (1974).[27] This nativized orthography was used by the three most respected figures, Shaiekh Abdul Azis Guroalim Saromantang of Tugaya, Aleem Abdulmajeed Ansano of Taraka, and Senator Ahmad Domocao "Domie" Alonto of Ramain, and is currently being used almost universally by mainstream Maranao writers, as well as in commercially available video CDs and DVDs of popular Maranao music available in Lanao del Sur.

That the Maranao language contains 23 phonemes is straightforward in light of the over 20 minimal pairs listed in section 1 and the synchronically productive alternations in the verbal affix system as outlined in section 6 (and appendix 2). The two most plausible analyses are that there are 19 consonants (/p p' b m w t t' d n s s' l r y k k' g ŋ ʔ/) and four vowels (/a i o ə/), or that there are 15 consonants (/p b m w t d n s l r y k g ŋ ʔ/) and eight vowels (/a ɨ i o u ə ə̣ ɨ/). As explained in section 4, the latter analysis is rejected because it would include severe distributional limitations on four of the eight vowels: all eight vowels would contrast before less than 30 percent of the consonants; before the other 70 percent of the consonants, only four vowels would contrast. It is also rejected because allophonic vowel raising after voiced stops and across /l/ and /ʔ/ indicates that there are only four phonemic vowels. The occurrence of the four tensed-and-raised vowels [ə̣ ɨ u i] is completely predictable from the preceding consonant and, indeed, from the Proto-Danaw reconstructions (or even from reconstructions for higher-level protolanguages, where available). Thus, an analysis with 19 consonants and four vowels is adopted. The contrast between /p t s k/ and /p' t' s' k'/ is characterized as a "heavy-light" contrast until further phonetic analysis can shed more light on the featural composition of the "heavy" consonants. These four previously overlooked consonants have a much stronger release, are aspirated in about half of the tokens, and obligatorily cause the following vowel to tense and raise.

With a 96-year history of foreign inquiry, we might wonder how the four heavy consonants were overlooked by everyone outside of the Muslim Maranao mainstream until 2009. First, it is important to realize exactly how difficult it is for a non-Maranao to hear the consonantal contrasts, and how easy it is to mistake the heavy consonants for regular consonants, at least until a native speaker repeatedly points out the contrast. In fact, even the current first author worked on Maranao for three years before being able to hear the

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27. An earlier pamphlet by Sen. Ahmad Domocao "Domie" Alonto et al. (n.d.), published in or before 1972, used a different orthography, in which the contrast was indicated by a diacritic on the four vowels *á, é, í, ó,* although later works by Alonto in 1988 and 1991 show that he, too, had adopted the "nativized" orthography with the C*h* digraphs.

contrasts, let alone make sense of them in the context of the phoneme system. Likewise, unless forms with the heavy consonants are compared with cognates in Maranao's sister languages Iranun and Maguindanaon (and other closely related GCPн languages), it is next to impossible to make sense of the phoneme system of Maranao. Unfortunately, sufficient comparative data were either nonexistent or much more difficult to access before the recent leaps in computer technology and internet-based communication over the past decade. Third, while native-produced books and audiovisual material provided the current authors with an invaluable catalyst for the current reanalysis, such materials do not seem to have been available prior to the 1970s, by which time nearly all of the previous non-Maranao who did research in the Maranao-speaking area had come and gone. Furthermore, the decidedly Islamic nature of the native-penned books—and the fact that they are almost exclusively sold in shops and stalls selling Islamic religious materials—all but ensured that they would go unnoticed by the prior non-Maranao researchers, most if not all of whom were missionaries, Bible translators, or otherwise professionally associated with Christian organizations or churches. The bottom line is that, without exception, all previous studies and dictionaries of the Maranao language will now have to be reevaluated to properly reflect the phonology and morphology of the language.

7.1 ON THE ERRORS IN PREVIOUS STUDIES OF MARANAO. A review of the previous literature on Maranao may also help shed some light on the reasons why Maranao's heavy consonants went unnoticed by the non-Maranao until 2009. In spite of the difficulty for a non-Maranao in distinguishing the heavy consonants from their nonheavy counterparts, the effect of these heavy consonants on the vowels is much clearer to the non-Maranao ear, and so it is more surprising that the vowel variation has never been mentioned in the literature on Maranao. Ten non-Maranao, besides the current first author, have published works about the Maranao language: Charles Elliott, Frank Laubach, David Hamm, Howard McKaughan, Robert McAmis, Robert Ward, Jannette Forster, Joe Allison, Eric Fleischman, and Mario "Guese" Tungol. Of those ten, not all were linguists, and not all of those who were linguists actually elicited their own Maranao data. Elliott, Laubach, McAmis, and Tungol were not linguists, and thus might not be expected to have the expertise to figure out the exceedingly difficult phonology of Maranao. Allison and Fleischman, on the other hand, were linguists, but did not do their own fieldwork on Maranao, instead relying exclusively on wordlists collected by Robert Ward in 1966; therefore, they had no choice but to accept the phonology as presented by Ward, who missed the heavy consonants (that likely occurred in few etyma on the SIL 372-item wordlist). Ward himself had some linguistics training and reportedly spent a significant amount of time living in Tugaya (the hometown of Maranao Qur'an translator Shaiekh Abdul Azis Guroalim Saromantang) and Wa-o (where the Isebanganen speech variety is classified by Fleischman 1981 as a dialect of Iranun). It is unclear how he missed the four heavy consonants, even though he went on to author a number of mostly unpublished articles (including n.d.a, n.d.b, 1965, 1968, 1971, and Ward and Forster 1967). Forster likewise had linguistics training but worked primarily on Dibabawon Manobo, and it is unclear whether she elicited Maranao data herself or simply worked off the data that Ward had elicited. Howard McKaughan, who is perhaps the best-known Western researcher to work on Maranao, is a linguist, but most of the data

for his analysis of the Maranao verb system were in the form of written texts that had been recorded by Maranao assistants in the only Latin script available at the time:[28] the Tagalog-like, Laubach-based orthography that had no means of writing the heavy consonants. Had this been any other Philippine language, written texts probably would have sufficed for a phonological analysis, and certainly for an analysis of the verb system. Unfortunately, Maranao is one of the few Philippine languages with an exceedingly difficult phoneme system that is intertwined with the verb morphology in a way that makes it impossible to properly analyze its verb system from texts unless they are written in a specialized orthography such as Maranao's nativized orthography.

Besides his 1958 verb study, McKaughan went on to compile dictionaries with Batua Macaraya in 1967 and 1996. Macaraya himself had already coauthored Maranao dictionaries (Macaraya, Bayabao, and Hamm 1952, 1956) before McKaughan began working on the language, and over a decade before the pair published their first dictionary together. Macaraya is also the only known Maranao writer who continued to use the old Laubach-based orthography, which does not recognize the "heavy" consonants, after the early 1970s, when mainstream Maranao scholars began using the nativized orthography. Not only did Macaraya never use the nativized orthography, but it is clear from his later work with McKaughan (1996) that he was unaware of both the nativized orthography, and the underlying phonological analysis that it represents. It is understandable that Macaraya's scholarship took the same path as the non-Maranaos', as opposed to that of the mainstream Muslim Maranao scholars. Macaraya is a convert to Christianity, who taught at a Christian school in Marawi and was surrounded both professionally and privately with non-Filipino Christians and with non-Muslim Filipinos. The disconnect caused by such a situation is very real, considering that a great many Maranao consider being a Muslim to be inseparable from being a Maranao. Macaraya has certainly produced an admirable quantity of material on his native language, but his lack of interaction with the mainstream (that is, Muslim) Maranao writers undeniably became the reason for his lack of knowledge of the nativized orthography and the improved phonological analysis that it suggested. Certainly, choice of religion is a universal, personal right that should never be judged or discriminated against. On a purely religious basis, Macaraya understandably had little interest in the other Maranao's publications, virtually all of which were directly or indirectly related to Islam, a religion that he no longer espoused. Linguistically, however, the Muslim Maranao writings contained a state-of-the-art advance not only in Maranao orthography, but also in the understanding of the Maranao phoneme system. Over two decades later, without having noticed this important breakthrough, McKaughan and Macaraya were still trying to correct their analysis of Maranao phonology and their orthography to represent it. McKaughan and Macaraya's (1996) introduction of a fifth vowel /i/ (represented by the digraph *ae*) created a new imbalance to their analysis: earlier nonnativized orthographies had simply failed to represent the four heavy consonants. McKaughan and Macaraya's 1996 orthography still missed those four consonants, but

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28. McKaughan (1958:vii) writes "Mr. Batua Macaraya…contributed many hours in the collection and typing of text material. Mr. Mamintal A. Tamano…gave many hours of valuable assistance during the writing of the materials. … Datu Gaguil Panggagaranao…saw to it that there were a number of young men to help in the gathering of the data."

represented as a single phoneme /ɨ/ what were in fact allophones of two separate phonemes: the [ə] allophone of /a/, and the [ɨ] allophone of /ə/. Without the insights that the nativized orthography provides, McKaughan and Macaraya also misinterpreted the optional raising of vowels after voiced stops, attributing it instead to this new *ae* vowel, even though the vowel raising is optional in this environment, and occurs with all four vowels, not just /a/ and /ə/.

   This updated 1996 McKaughan and Macaraya orthography does not appear to be used by any Maranao writers other than Macaraya. Furthermore, the earlier Laubach-based orthography (with its four vowels and 15 consonants) does not seem to have been used by Muslim Maranao writers after 1970. Nearly all Maranao teachers, scholars, and writers have nothing but disdain for the Laubach-based orthographies, some even going so far as to characterize them as the continuation of Laubach's "destruction of the Maranao language." Whether or not a majority agrees with this opinion, a simple walk down the streets of the Islamic City of Marawi and through its marketplaces proves beyond a reasonable doubt that mainstream Maranao authors are not writing in any nonnativized orthography: virtually all available books (cf. Abdul 2006; Abdullah 2001; Alonto 1991; Ansano 2001, 2004; Kandhlawi 2004; Ombaya 2008a,b, n.d.a,b; Said 1989, n.d.a,b; Saromantang 2001; among others) are written in the nativized orthography that faithfully represents the four "heavy" consonants. Undeniably, a real chasm developed between the outsiders' opinions of their orthographies, and the opinions and empirically observable writing behavior of the Muslim Maranao majority. The outsiders felt that they had given the Maranao something that only they, with their academic backgrounds, could give them; the native speakers felt otherwise, and turned out in this case to be correct.

7.2 LESSONS TO BE LEARNED. There are important lessons about language documentation to be learned here, and these lessons will be explored more fully in a separate paper (Lobel n.d.). The main lesson is probably that reliable work on a language might not be achievable if the researcher or fieldworker (1) does not elicit their own data, (2) cannot interact with the larger language community, (3) does not shop around for informants, and (4) relies too heavily on textual materials written by individuals who do not have an accurate understanding of the phonology of their language. In the case of Maranao, it turns out that the ethnolinguistic group that was least likely to be cooperative with Christian missionaries and Bible translators happened to speak what is probably the most difficult Philippine language to analyze phonologically. They also ended up being the most productive in writing their own language accurately without the help of outsiders, including linguists. Mainstream Muslim Maranao scholars had cracked the phonological code of their native language no later than 1974; ideally, it should never have taken three and a half decades before an outsider "discovered" facts about this language that were already well known in the language community. Without the input of the most knowledgeable members of the native-speaker community, the resulting work by all of the outsiders (even the first three years of work on Maranao by the current first author) ended up including erroneous analyses of the phonology and morphology. In most language communities around the world, there are probably not many literate resource people with whom linguists can dialog, but in cases like Maranao, where such individuals do exist, it is clearly a mistake to not directly

include them in our research. An examination of the first hundred years of outsiders' work on the Maranao language teaches us the valuable lesson that if we linguists exclude the most learned native speakers from our research, the resulting body of work—no matter how plentiful—might not stand the test of time.

APPENDIX 1. 165 PROTO-DANAW RECONSTRUCTIONS
WITH CLUSTERS *-bp-, *-dt-, *-ds-, *-gk-

Reconstructions are Proto-Danaw. Maguindanaon (MGD) and Sabah Iranun (SIR) forms are spelled according to the general orthography. Maranao (MAR) forms are spelled according to the nativized orthography. Reconstructions in parentheses represent Pre–Proto-Danaw reduplicated monosyllables, and are included to draw attention to some of the sources of the homorganic clusters of Proto-Danaw. Sabah Iranun forms are taken from a lexical database by Pandikar Padi, and Maguindanaon forms are taken from a lexical database by Luke Schroeder, Bruce Skoropinski, and Bruce Van Zante (see section 2).

*abpər	MGD *abpel*, SIR *abper*, MAR *apher* 'possessed'
*adtəbaʔan	MGD *adteban*, MAR *thebaan* 'riverbank'
*badsag	MGD *badsag* 'strike directly on the top or center', MAR *bazag* 'strike suddenly'
*badtiag	MGD *badtiag*, MAR *bathiag* 'not serious about one's work'
*badtik	MGD *badtik*, MAR *bathik* 'hard and sticky'
*badtiŋ	MGD *badting*, MAR *bathing* 'bell'
*bagkar	MGD *bagkal*, SIR *bagkar*, MAR *bakhar* 'meet unexpectedly or accidentally'
*b[aə]gkəs	MGD *bagkes* 'to prepare cargo or baggage', MAR *bekhes* 'to tie things'
*b[aə]gkug	MGD *bagkug*, MAR *bekhog* 'crooked; not straight'
*bagkuas	MGD *bagkuas*, MAR *bakhowas* 'to wake suddenly'
*bədtaŋ	SIR *bedtang*, MAR *bethang* 'crazy'
*bədtas	MGD *bedtas*, MAR *bethas* 'to cross a river or road'
*bədtək	MGD *bedtek*, MAR *bethek* 'the spur of a cock'
*bədtig	MGD, SIR *bedtig*, MAR *bethig* 'bump, collide'
*bədtu	MGD, SIR *bedtu*, MAR *betho* 'to say, to mention'
*bəgkəd	MGD *begked*, MAR *bekhed* 'a rope or string used to tie something'
*bəgkəs	MGD *begkes*, MAR *bekhes* 'to tie tightly; to tighten'
*bidsul	MGD, SIR *bidsul*, MAR *bizol* 'clear field by fire; field cleared by fire'
*bigkat	MGD *bigkat* 'draw or pull out', MAR *bikhat* 'lift, pull up'
*b[iə]gkug	MGD *bigkug*, MAR *bekhog* 'curved'
*budsuʔ	MGD *budsu*, SIR *budsû*, MAR *bozô* 'a species of bird'
*budsud	SIR *budsud*, MAR *bozod* 'throw'
*budtaʔ	MGD *budta*, MAR *bothâ* 'mud'
*budtul	MGD, SIR *budtul*, MAR *bothol* 'lower abdomen'
*budtuŋ	MGD *budtung*, MAR *bothong* 'only child'
*bugkag	SIR *bugkag*, MAR *bokhag* 'lie'
*bugkaraw	MGD *bugkalaw*, SIR *bugkaraw*, MAR *bokharaw* 'move suddenly, as from surprise'
*bugkut	MGD *bugkut*, MAR *bokhot* 'to draw; pull out from'
*(bu)kagkag	MGD *bukagkag*, MAR *kakhag* 'to raise one's voice to scare s.o.'
*buludtu	MGD, SIR *buludtu*, MAR *bolotho* 'rainbow'
*dabpik	MGD, SIR *dabpik*, MAR *daphik* 'diaper'
*dadsaŋ	MGD, SIR *dadsang*, MAR *dazang* 'drop suddenly'
*dadsəg	MGD, SIR *dadseg*, MAR *dazeg* 'approach'
*dadtəm	MGD *dadtem*, MAR *dathem* 'raincloud'
*dagkar	MGD *dagkal*, MAR *dakhar* 'to jab at something with a stick'

*dəbpak	MGD *debpak*, MAR *dephak* 'fall forward'
*dəbpil	MGD, SIR *debpil*, MAR *dephil* 'paste'
*dəbpuŋ	MGD *debpung*, MAR *dephong* 'blunt, of tip'
*dədsaʔ-an	MGD *dedsan*, SIR *dedsaan*, MAR *dezaan* 'seashore'
*dəgkaʔ	MGD *degka*, SIR *degkâ*, MAR *dekhâ* 'rest, stop'
*dəgkət	SIR *degket* 'paste', MAR *dekhet* 'stick together, as in the process of weaving'
*dəgkuag	SIR *degkuag*, MAR *dekhowag* 'protruding'
+diridsu (< Spanish)	MGD *dilidsu*, MAR *dirizo* 'straight, direct'
*dudsuʔ	MGD *udsu*, SIR *dudsû*, MAR *dozô* 'jump upward'
*dudsul	MGD, SIR *dudsul*, MAR *dozol* 'sty (of eye)'
*dudsuŋ	MGD, SIR *dudsung*, MAR *dozong* 'stoop; to fall suddenly face down'
*ədtak	MGD, SIR *(e)dtak*, MAR *thak* (but note affixed form *phagethak*) 'drip'
*gəbpa	MGD, SIR *gebpa*, MAR *gepha* 'fall forward'
*ibpəd	MGD, SIR *ibped*, MAR *iphed* 'consume all of'
*idsaʔ	MGD *idsa*, SIR *idsâ*, MAR *izâ* 'ask'
*idsan	MGD, SIR *idsan*, MAR *izan* 'similar to'
*idtug	MGD, SIR *idtug*, MAR *ithog* 'to throw'
*kagkag	SIr *kagkag*, MAR *kakhag* 'laugh loudly'
*kagkar	MGD *kagkal*, MAR *kakhar* 'dig'
*karəgkad	MGD *kalegkad*, MAR *karekhad* 'dandruff'
*kəgkang	MGD, SIR *kegkang*, MAR *kekhang* 'shake off small particles'
*kəgkəb (< *kəbkəb)	MGD, SIR *kegkeb*, MAR *kekheb* 'bite'
*kəgkəm (< *kəmkəm)	MGD *kegkem*, MAR *kekhem* 'fist'
*kəgkən (< *kənkən)	MGD *kegken*, MAR *kekhen* 'scoop up things that have dried in order to put in a sack'
*kəgkər (< *kərkər)	MGD *kegkel*, MAR *kekher* 'to tremble; shiver; shake'
*kigkid (< *kidkid)	MGD *kigkid*, MAR *kikhid* 'to rub'
*kigkil	SIR *kigkil*, MAR *kikhil* 'to neigh like a horse'
*kugkug (< *kugkug)	MGD *kugkug* 'to shiver, tremble', MAR *kokhog* 'to shake s.t.'
*kugkum (< *kumkum)	MGD *kugkum*, MAR *kokhom* 'to want all of something'
*kugkuŋ (< *kuŋkuŋ)	MGD, SIR *kugkung*, MAR *kokhong* 'to clean out a bottle by shaking water in it''
*kugkur (< *kurkur)	MGD *kugkul*, MAR *kokhor* 'to scrape'
*ladsuag	SIR *ladsuag*, MAR *lazowag* 'penetrate'
*ladsug	MGD *ladsug* 'flee when being chased', MAR *lazog* 'Maranao game of chase'
*lagkəs	MGD *lagkes* 'to include, enclose', MAR *lakhes* 'of bamboo flooring, the wooden foundation where it's tied'
*ləbpad	MGD *lebpad*, MAR *lephad* 'whip, flog'
*lədtaŋ	MGD *ledtang*, MAR *lethang* 'to poison fish'
*lədtu	MGD, SIR *ledtu*, MAR *letho* 'jump; stretch upwards in order to reach something; fly (of birds)'
*ləgkəb	MGD, SIR *legkeb* 'to turn upside down, capsize', MAR *lekheb* 'to topple'
*lidsəg	MGD *lidseg*, MAR *lizeg* 'to grind, mill; to run over'
*lidtuas	MGD *lidtuas*, MAR *lithowas* 'come out'
*ludsəg	MGD *ludseg*, MAR *lozeg* 'crush, crumple, trample'
*ludtiad	MGD *ludtiad*, MAR *lothiad* 'off-balance'
*lugk[əu]baŋ	MGD *lugkebang*, MAR *lokhabang* 'shell'
*ma-dsəm	MGD *dsem*, SIR *madsem*, MAR *mazem* 'sour'

*ma-dtay	MGD, SIR *madtay*, MAR *mathay* 'long time'
*m-aɡkap	MGD, SIR *magkap*, MAR *makhap* 'lightweight'
*ma-ribpəs	MGD *malibpes*, SIR *maribpes*, MAR *mariphes* 'often, frequently'
*mubpun	MGD *mubpun*, MAR *mophon* 'cocoon'
*mudsəŋ	MGD *mudseng*, MAR *mozeng* 'muzzle of an animal'
*mu[dg]idsat	MGD *mugidsat*, MAR *modizat* 'calamity'
*pabpaɡ (< *paɡpaɡ)	MGD *pabpag*, MAR *paphag* 'bang, beat'
*pəbpəɡ (< *pəɡpəɡ)	MGD *pebpeg*, MAR *pepheg* 'pack down'
*pədsa (< *pəɡsa)	MGD, SIR *pedsa*, MAR *peza* 'a boil (on the skin)'
*pədtad	MGD, SIR *pedtad*, MAR *pethad* 'sand'
*pibpil	MGD, SIR *pibpil*, MAR *piphil* 'pat; touch gently'
*piɡkət	MGD *pigket*, MAR *pikhet* 'paralyzed'
*pubpuɡ (< *puɡpuɡ)	MGD *pubpug*, MAR *pophog* 'fall down'
*pudsan	MGD, SIR *pudsan*, MAR *pozan* 'preserve something by pickling'
*p[uə]lidtak	MGD *pulidtak*, MAR *pelithak* 'make a clicking sound with the tongue in order to call someone'
*rapaɡkar	MGD *lapagkal* 'the sound of a body falling on the floor or of dragging a chair', MAR *rapakhar* 'the sounds made when rushing'
*rəbpədaʔ	SIR *rebpedâ*, MAR *rephedâ* 'sibling'
*rədsaʔ	SIR *redsâ*, MAR *rezâ* 'together, batch'
*rədsik	MGD *ledsik*, MAR *(ma)rezik* 'dirt; dirty'
+ridseki (< Arabic)	MGD *lidseki*, MAR *rizeki* 'gift from God; blessing'
*riɡkət	MGD *ligket*, MAR *rikhet* 'sticky'
*riɡkut	MGD *ligkut*, SIR *rigkut*, MAR *rikhot* 'small broken piece of a grain of rice'
*r[uə]dtun	MGD *ludtun* 'when a woman's breast is swollen with excess milk', MAR *rethon* 'when the milk in a woman's breast drips because it is time to breastfeed'
*sabpa	MGD *sabpa* 'stay in one place', MAR *sapha* 'caught on stick while floating in water'
*sabpər	MGD *sabpel*, SIR *sabper*, MAR *sapher* 'disease caused by the devil passing you by'
*sədsad (< *sadsad?)	MGD *sedsad* 'weave something', MAR *sezad* 'make bamboo fencing'
*s[aə]dsal (< *salsal)	MGD *sadsalan/sedsal*, SIR *sedsal*, MAR *sezal* 'hammer iron on an anvil'
*saɡkaw	SIR *sagkaw*, MAR *sakhaw* 'catch'
*s[aə]ɡkub	MGD *sugkub*, SIR *sagkub*, MAR *sakhob* 'cockfight'
*saliɡkat	MGD *saligkat*, MAR *salikhat* 'to catch chickens or birds'
*saludsuɡ (< *saluɡsuɡ)	MGD *saludsug*, MAR *salozog* 'sew loosely, not permanently'
*saluɡkud	MGD *salugkud*, MAR *salokhod* 'next'
*saridsi[bd]	MGD *salidsib*, MAR *sarizid* 'get wet by rain coming through a window'
*sədsəd	SIR *sedsed*, MAR *sezed* 'mat'
*sədsən	MGD, SIR *sedsen*, MAR *sezen* 'gather things together'
*səɡkad	MGD, SIR *segkad* 'supporting foundation', MAR *sekhad* 'to plant a stick into the ground to make a foundation'
*səɡkuʔ	SIR *segkû*, MAR *sekhô* 'touch'
*s[əi]ɡkəm	SIR *segkem, sigkem*, MAR *sikhem* 'grab, snatch'
*sidsiŋ (< *siŋsiŋ)	MGD, SIR *sidsing*, MAR *sizing* 'to rub or scrub'
*sidsuk	MGD *sidsuk*, MAR *sizok* 'to poke'
*siɡkul	MGD *sigkul*, MAR *sikhol* 'to touch with the elbow'
*subpun	MGD *subpun*, MAR *sophon* 'join together'

*sudsud (< *sudsud) MGD, SIR *sudsud* 'to poke; push a stick into a hole', MAR *sozod* 'bamboo toy that children make in which a stick is poked in order to make the contents come out'

*sudsul SIR *sudsul*, MAR *sozol* 'hurry'

*sugkar MGD *sugkal*, MAR *sokhar* 'a pole used to pick fruit from a tree'

*sugkip MGD, SIR *sugkip* 'to insert; to place in a narrow opening', MAR *sokhip* 'to place on a wall, with something to hold it'

*s[uə]gkuʔ MGD *sugku*, SIR *sugkû*, MAR *sekhô* 'layers separated from each other'

*tadtab (< *tabtab) MGD, SIR *tadtab*, MAR *tathab* 'graze'

*tadtad (< *tadtad) MGD, SIR *tadtad*, MAR *tathad* 'cut into pieces'

*tadtag (< *tagtag) MGD *tadtag*, MAR *tathag* 'to make the food called *tinadtag* in Maguindanaon and *tiyathag* in Maranao'

*tagidti[mŋ] MGD *tagidtim*, MAR *tagithing* 'mildew'

*t[aə]gkes MGD *tagkes*, MAR *tekhes* 'to bind together'

*tagudtub SIR *tagudtub*, MAR *tagothob* 'thud'

*tagkip MGD, SIR *tagkip*, MAR *takhip* 'to tuck something under one's belt or at one's waist (as a spear or bolo)'

*taləgkəb MGD, SIR *talegkeb* 'lie prone; upside down', MAR *talekheb* 'topple'

*taligkud MGD, SIR *taligkud*, MAR *talikhod* 'to turn one's back'

*taradtad SIR *taradtad*, MAR *tarathad* 'chop'

*tarədtəb SIR *taredteb*, MAR *taretheb* 'edge'

*tayudtu[ŋn] MGD *tayudtung*, MAR *tayothon* 'lower something from a height'

*təbpak SIR *tebpak* 'throw a spear', MAR *tephak* 'hit w/ fist overhand'

*təbpəd MGD, SIR *tebped*, MAR *tephed* 'broken'

*təbpiring SIR *tebpiring*, MAR *tephiring* 'slap'

*təbpul MGD, SIR *tebpul*, MAR *tephol* 'dull'

*tədtəb (< *təbtəb) MGD *tedteb*, MAR *tetheb* 'nibble'

*tədtər SIR *tedter*, MAR *tether* 'shake, shiver'

*təgkaw MGD, SIR *tegkaw*, MAR *tekhaw* 'steal; thief'

*təgkəs MGD *tegkes*, MAR *tekhes* 'to tie closely or tightly'

*tiagkaʔ MGD *tiagka*, MAR *tiyakhâ* 'to surprise; frighten'

*tibpes MGD *tibpes*, MAR *tiphes* 'store something, put away'

*tibpuʔ MGD *tibpu*, SIR *tibpû*, MAR *tiphô* 'jump down'

*tibpud MGD *tibpud*, MAR *tiphod* 'break the tip off of'

*tidtig (< *tigtig) MGD *tidtig* 'break into small pieces by beating', MAR *tithig* 'cut, chop'

*tidti[ŋ] (< *tiŋtiŋ) MGD *tidting*, MAR *tithing* 'part of a bladed weapon that is inserted into the handle'

*tidtu MGD, SIR *tidtu*, MAR *titho* 'true, straight'

*tigkaras SIR *tigkaras*, MAR *tikharas* 'wake up suddenly'

*tubpa MGD, SIR *tubpa*, MAR *topha* 'spit out of mouth, as food, water, or medicine'

*tubpuŋ SIR *tubpung*, MAR *tophong* 'die young'

*tudtul (< *tultul) MGD, SIR *tudtul*, MAR *tothol* 'story; tell'

*tudtun (< *tuntun) MGD, SIR *tudtun*, MAR *tothon* 'lower something'

*t[uə]gkiaŋ MGD *tugkiang*, MAR *tekhiang* 'to retort'

*ubpit MGD, SIR *ubpit*, MAR *ophit* 'cut bamboo or rattan into strips'

*udsad MGD, SIR *udsad*, MAR *ozad* 'to stumble down; slump down'

*udsak MGD, SIR *udsak*, MAR *ozak* 'to become rotten'

*udsud MGD *udsud*, MAR *ozod* 'to fall head first' (note also SIR *tariudsud* 'fall down')

*udsur	MGD *udsul*, SIR *udsur*, MAR *ozor* 'move upward or forward; increase; have an improvement in life'
*udtaŋ	MGD, SIR *udtang*, MAR *othang* 'fall'
*udtat	MGD *udtat*, MAR *othat* 'kick by pushing with foot'
*udtu	MGD, SIR *udtu*, MAR *otho* 'noon'
+wadsir (< Arabic)	MGD *wadsil*, MAR *wazir* 'judge'

APPENDIX 2. REVISED MARANAO VERBAL AFFIX PARADIGMS BY FOCUS, TENSE-ASPECT, AND MODE

In the following tables, {C} indicates the initial consonant of a root word, as opposed to a reduplicated consonant. {C}h- therefore indicates that the first consonant of the root word becomes heavy, indicated in the orthography by adding an *h* after that consonant. For the sake of simplicity, McKaughan and Macaraya's "present progressive," "immediate future," "obligatory present progressive," and "obligatory immediate future" are referred to by the current authors as "present," "future," "present subjunctive," and "future subjunctive", respectively.

ACTOR FOCUS PARADIGMS

	BASIC	ABIL.	CAUS.	ABIL. CAUS.	DISTR.	EMPH. DISTR.
Infinitive	-om-	maka-	maki-	mapaki-	maN-	mamaN-
Past	-omiy-	miyaka-	miyaki-	miyapaki-	miyaN-	miyamaN-
Present	paG-	phaka-	pephaki-	—	—	pephamaN-
Future	G-	phaka-	phaki-	maphaki-	phaN-	phamaN-
Imperative	—	—	paki-	—	—	pamaN-

BASIC PARADIGMS (INDICATIVE AND ABILITATIVE)

INDICATIVE

	AF	OF	LF	BF/OF2
Infinitive	-om-	-en	-an	i-
Past	-omiy-	-iy-	-iy-..-an	ini-
Present	paG- C<om>V-	paG-..-en CV-..-en	paG-..-an CV-..-an	ipaG- i-CV-
Future	G- (heavy)	G-..-en	G-..-an	i-G-
Imperative	—	-a	-i	-en
Present Subjunctive	—	paG-..-a	paG-..-i	—
Future Subjunctive	—	G-..-a	G-..-i	—

ABILITATIVE

	maka-	ma-	ka-..-an	mi-
Infinitive	maka-	ma-	ka-..-an	mi-
Past	miyaka-	miya-	kiya-..-an	mini-
Present	phaka- (=FUT)	pekha-	pekha-..-an	pekhi-
Future	phaka- (=PRES)	kha-	kha-..-an	khi-
Imperative	—	ka-..-a	ka-..-i	—
Present Subjunctive	—	pekha-..-a	pekha-..-i	—
Future Subjunctive	—	kha-..-a	kha-..-i	—

CAUSATIVE PARADIGMS (INDICATIVE AND ABILITATIVE)

INDICATIVE

	AF	OF	LF	BF/OF2
Infinitive	maki-	paki-..-en paka-..-en	paki-..-an paka-..-an	ipaka-
Past	miyaki-	piyaki- piyaka-	piyaki-..-an piyaka-..-an	inipaka-
Present	pephaki- pephaka-	pephaki-..-en pephaka-..-en	pephaki-..-an	ipephaka-
Future	phaki-	phaki-..-en phaka-..-en	phaki-..-an	iphaka-
Imperative / Past Negative	paki-	paki-..-a paka-..-a	paki-..-i	paka-..-en
Present Subjunctive	—	pephaki-..-a pephaka-..-a	pephaki-..-i	?
Future Subjunctive	—	phaki-..-a phaka-..-a	phaki-..-i	?

ABILITATIVE

	AF	OF	LF	BF/OF2
Infinitive	mapaki-	— mapaka-	kapaki-..-an	kipaki- kipaka-
Past	miyapaki-	— miyapaka-	kiyapaki-..-an	minipaki- minipaka-
Present	—	—	pekhapaki-..-an	—
Future	maphaki-	— maphaka-	khapaki-..-an	kiphaki- kipaka-
Imperative	—	—	kapaki-..-i	—
Present Subjunctive	—	—	pekhapaki-..-i	—
Future Subjunctive	—	—	khapaki-..-i	—

DISTRIBUTIVE PARADIGMS

	AF	OF	LF	BF/OF2
Infinitive	maN-	paN-..-en	paN-..-an	ipaN-
Past	miyaN-	piyaN-	piyaN-..-an	inipaN-
Present	—	pephaN-..-en	pephaN-..-an	ipephaN-
Future	phaN-	phaN-..-en	phaN-..-an	iphaN-
Imperative	—	paN-..-a	paN-..-i	—
Present Subjunctive	—	pephaN-..-a	pephaN-..-i	—
Future Subjunctive	—	phaN-..-a	phaN-..-i	—

EMPHATIC

	AF	OF	LF	BF/OF2
Infinitive	mamaN-	pamaN-..-en	pamaN-..-an	ipamaN-
Past	miyamaN-	piyamaN-	piyamaN-..-an	inipamaN-
Present	pephamaN-	pephamaN-..-en	pephamaN-..-an	—
Future	phamaN-	phamaN-..-en	phamaN-..-an	—
Imperative	pamaN-	pamaN-..-a	pamaN-..-i	—
Present Subjunctive	—	pephamaN-..-a	pephamaN-..-i	—
Future Subjunctive	—	phamaN-..-a	phamaN-..-i	—

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