

# Southern Subanen Aspiration

Jason William Lobel and William C. Hall

UNIVERSITY OF HAWAII‘I AT MĀNOA AND SIL INTERNATIONAL

Southern Subanen, spoken on the Philippine island of Mindanao, is the only Philippine language known to have contrastive aspiration, which is a rarity in the Austronesian family. While aspirated consonants are common in the world’s languages, Southern Subanen provides us with an uncommon glimpse at how aspirated consonants can develop. Their unique historical derivation in Southern Subanen is such that, in certain environments, aspiration marks semantic contrasts in verbal prefixes and even functions as a marker of nominalization. In this paper, we will analyze the historical sources of this aspiration and its realization in the modern language.

**1. INTRODUCTION.**<sup>1</sup> Southern Subanen is one of six languages comprising the Subanen subgroup of languages spoken on the Zamboanga Peninsula on the southern Philippine island of Mindanao. These languages share a number of peculiar prosodic features and phonotactic constraints that make them appear odd to those familiar with more commonly studied Philippine languages like Tagalog, Cebuano, or Ilokano. In addition to the subgroup-wide characteristics, Southern Subanen is noteworthy for being the only Philippine language to have developed a series of contrastive aspirated consonants, and one of only a handful of languages in the 1,200-member Austronesian family to have contrastive aspiration.<sup>2</sup>

The progression of events that culminated in the development of Southern Subanen’s aspirated consonants involved a unique series of phonological and prosodic innovations, the first several of which were shared by all of the Subanen languages and, as such, can be attributed to Proto-Subanen (cf. 2.2). The final few key innovations, however, are unique to Southern Subanen.

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2. Among this handful are some Polynesian Outlier languages whose aspirated consonants developed from earlier geminates. Some Chamic languages have also been described as having aspirated consonants, most likely under influence of Cambodian and Vietnamese that have an aspirated-unaspirated contrast, but Blust (pers. comm., October 31, 2008) points out that these “seem actually to be consonant clusters [because] it is possible in careful speech to insert a schwa between the stop and h.”

Even more remarkable are the environments in which these aspirated consonants developed:

1. morpheme-internally, as reflexes of certain earlier word-medial consonant clusters;
2. at the boundary of prefixes \*mæg- and \*pæg- and root words with initial \*p, \*t, \*s, or \*k, and within compound prefixes that include \*mæg- and \*pæg-, where aspiration marks various semantic distinctions vis-à-vis forms that do not have aspiration; and
3. at the beginning of nouns that were preceded by \*g-final case markers, where aspiration functions as a marker of part of speech vis-à-vis otherwise identical forms that begin with unaspirated consonants.

Notably, the only unifying feature in this otherwise odd combination of environments is that all three environments involved sequences of \*-kC- in Proto-Subanen, where C was a voiceless consonant /p t s k/. The outcome is the same in each case: the transformation of these clusters into aspirated consonants /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup> k<sup>h</sup>/.

This paper describes the synchronic occurrence of the aspirated consonants of Southern Subanen, and the historical source thereof.

**1.1 SUBANEN LANGUAGES.**<sup>3</sup> The Subanen languages are part of the Greater Central Philippines subgroup (Blust 1991), and may be especially closely related to the Danao and Manobo languages, forming a lower-level subgroup called Southern Philippines, as previously proposed by McFarland (1980) and Zorc (1986). The Subanen subgroup is composed of six languages: (1) Northern Subanen (Dikayunhen); (2) Eastern Subanen (Salugnen); (3) Central Subanen (Tuboy); (4) Southern Subanen; (5) Western Subanon and Western Kolibugan; and (6) Tawlet Kalibugan and Salug-Godod Subanen. The primary distinction between the Subanen/Subanon groups and the corresponding Kalibugan/Kolibugan groups is religious, not linguistic: the Subanen/Subanon were traditionally animists,<sup>4</sup> many of whom have converted to Christianity in the past century, whereas the groups calling themselves “Kolibugan” or “Kalibugan” converted to Islam in previous centuries, perhaps early in the time of the Sultanates of Maguindanao and Sulu.<sup>5</sup> Linguistically, the distinction between them is much less pronounced: Tawlet Kalibugan and Salug-Godod Subanen are close enough to be considered a single language, as are Western Kolibugan and Western Subanon. In the latter case, however, cultural and

3. The current authors use the spelling “Subanen,” which is the preferred spelling by the speakers of most Subanen speech varieties and their tribal organizations, as well as by the Philippines’ National Commission on Indigenous Peoples, and local government units in the Zamboanga and Northern Mindanao areas. The spelling “Subanun” has also been used by Christie (1909), Frake (1964), and Reid (1971). Note that Western Subanon is spelled with an “o” because its reflex of Proto-Subanen \*ə is /o/.

4. At least some Subanen groups have a traditional religion of their own, which seems at least on the surface to have borrowed some concepts from Islam and possibly Christianity, but this religion has yet to be the object of academic inquiry.

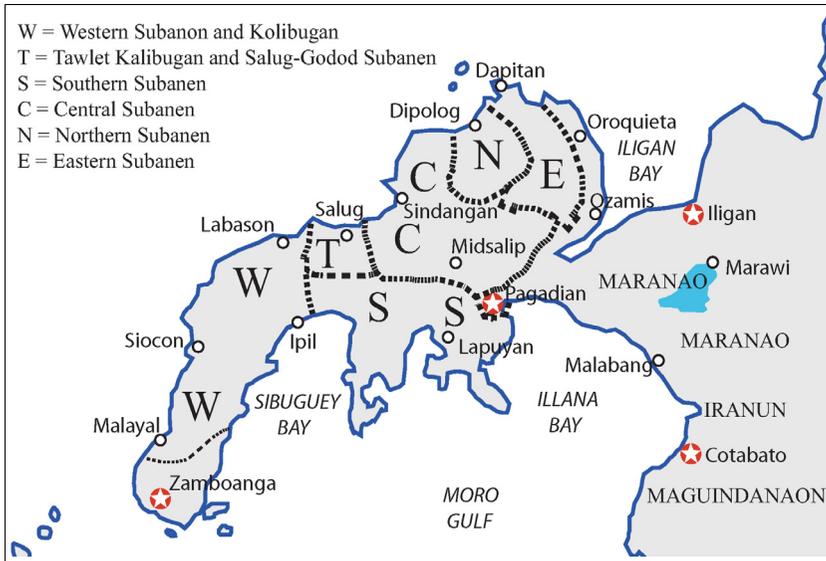
5. Non-Kolibugan usually refer to all of the Kolibugan as “Kalibugan” (not reflecting the \*a > \*ə > /o/ shift in prepenultimate syllables). However, it is only in the area around Salug town that “Kalibugan” is used as an endonym; elsewhere, “Kolibugan” is the preferred endonym. It is worth noting that the Zamboanga Peninsula is not the only part of the Sultanates’ former territory where this type of dichotomy developed. On Palawan Island, there is a similar relationship between the traditionally animist Pala-wan tribes who usually inhabit inland areas, and the primarily coastal Muslim Panimusan tribes, whose speech varieties differ only slightly from one another in spite of their religious differences and different tribal identities.

religious differences—as well as political conflicts over the past half-century—have created a situation where neither group seems to want to admit to a particularly close relationship with the other.<sup>6</sup> Map 1 (based partially on Promon et al. 1992) illustrates the approximate locations of the various members of the Subanen subgroup.

The area that is home to the Subanen languages is just one part of a larger Mindanao-North Borneo linguistic area in which a plethora of innovations has affected consonant clusters. Besides the aspirated consonants of Southern Subanen, this general area is also home to Maranao, with its typologically rare “heavy” consonants (Lobel and Riwarung 2009), and to Kelabit, with its equally rare true aspirated voiced stops (Blust 2006), in addition to a number of languages that have developed geminates and homorganic voiced-voiceless clusters (Ilianen Manobo and Western Bukidnon Manobo; Iranun and Maguindanao; Rungus; and Ida’an/Begak). To the other extreme are languages of the Mongondow-Gorontalo, Murutic, and Dusunic subgroups, most of which disallow all consonant clusters except those consisting of a nasal followed by an obstruent.

**1.2 PREVIOUS STUDIES ON SUBANEN LANGUAGES.** The Subanen languages are some of the most underrepresented Philippine languages in the linguistics literature. No dictionary or comparative study of these languages has ever been published,<sup>7</sup> and the only language for which a detailed description of phonology or morphology is available is Northern Subanen (Daguman 2004). This is the case even though linguists, Bible transla-

**MAP 1. LOCATION OF SUBANEN AND NEIGHBORING LANGUAGES**



6. This was not always the case, however. The second author can remember that, before tensions spiked between Muslim groups and the government during the dictatorship of Ferdinand Marcos, the Western Subanen and the Kolibugan had no objections to admitting their close relationship to each other.

7. The first author has completed a comparative study of the Subanen languages (Lobel 2010b) as one part of his forthcoming dissertation.

tors, and other foreigners have been present in the area since the early 1900s. The first Bible translation for a Subanen language was the Southern Subanen New Testament *Gempya Guhiten rin Ryanyu*, published in 1982, followed by Central Subanen (*Kig Begu Pasad, Ki Talu' nug Megbabaya'*, 1992) and Western Subanen (*Bogu Pasad, Talu' nog Mikpongong*, 1996). Various other types of Christian religious materials have been published in these three languages, although mostly of only limited distribution and long out of print.

Other than the aforementioned PhD. dissertation, the only other linguistics literature<sup>8</sup> on the Subanen languages consists of some short articles on Central Subanen (Brichoux 1970a, 1970b, 1977a, 1977b, and Brichoux and Hale 1977), Western Subanen (Hall 1969, 1973–74), and Northern Subanen (Daguman 1996, 2001); a monograph on Western Subanen sociolinguistics (Hall 1987); two wordlists in Reid (1971) collected by Brichoux and Hall; and a brief mention in Blust (1991) as follows: “There is a set of two or three closely related languages (Subanun, with at least two rather divergent dialects, Kalibugan) spoken in the Zamboanga Peninsula of western Mindanao. A general recognition of the close relationship of Subanun to the Manobo and Danaw languages has been noted in the previous sections. Published material on Subanun is fairly limited” (1991:84). Blust’s summary of Subanen languages, while nearly 20 years old, is still relevant today in that it speaks volumes about the striking lack of published information and source materials on the Subanen languages.

**1.3 SOUTHERN SUBANEN ASPIRATION.** As mentioned above, the most noteworthy feature of Southern Subanen is the presence of aspirated consonants /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup> k<sup>h</sup>/ that reflect Proto-Subanen clusters \*kp, \*kt, \*ks, and \*gk (via \*kk), respectively.

Although never reported in the linguistics literature, the existence of these aspirated consonants in Southern Subanen is well known to other Subanen groups, to other neighboring Philippine groups, and to the few foreigners familiar with the languages of the area. It is also clear that the Bible translators who worked in the area decades ago were aware of the aspirated consonants, evident in the orthography that was used in their Southern Subanen New Testament translation (1982): unaspirated /p/, /t/, and /s/, are spelled *p*, *t*, and *s*, respectively, while aspirated /p<sup>h</sup>/, /t<sup>h</sup>/, and /s<sup>h</sup>/ are spelled *ph*, *th*, and *sh*, respectively.<sup>9</sup> Unfortunately, no articles or monographs were ever written about the language, and as a result the aspirated consonants went unreported in the linguistics literature. Likewise, without any comparative studies of the Subanen languages, the historical source of the aspirated consonants remained unanalyzed until the present.

Interestingly enough, the Subanen have their own explanation for the aspiration in Southern Subanen, claiming that it is the result of the influence of the aspirated mispronunciations of the Subanen language by the American missionaries and Bible translators who were present in the area (often referred to locally as “Little America”) since the 1920s. This

8. In addition to dedicated linguistics works, two ethnographic studies on the Subanen have also been published (Christie 1909, Finley and Churchill 1913), each of which includes a short annotated word list.

9. /k/ and /k<sup>h</sup>/ were both spelled *k* in the Southern Subanen New Testament orthography, as they are in complementary distribution in the native vocabulary (despite not being allophones of the same phoneme and not having the same historical source). Nowadays, Southern Subanen speakers generally spell the aspirated /k<sup>h</sup>/ as *kh* and the unaspirated /k/ as *k*, so this distinction is recognized in the orthography of this paper.

explanation, however entertaining, fails to stand up to scientific scrutiny, since it is contradicted both by the synchronic facts of the two languages and by the historical linguistic evidence. First, aspirated [p<sup>h</sup> t<sup>h</sup> k<sup>h</sup>] in English are predictable by position in a word (or phrase), while the occurrence of /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup> k<sup>h</sup>/ in Southern Subanen cannot be predicted except with historical evidence. Second, aspirated consonants in English do not contrast with unaspirated counterparts, while at least three of four aspirated consonants (/p<sup>h</sup> t<sup>h</sup> s<sup>h</sup>/) in Southern Subanen do contrast with unaspirated counterparts (/p t s/).<sup>10</sup> As a matter of fact, Southern Subanen shares the aspirated-unaspirated contrast not with English but with languages like Cambodian, Thai, Korean, and many of the languages of India. Therefore, the development of aspiration in Southern Subanen cannot be attributed to the influence of English and, in fact, it likely far predates the arrival of English speakers in the Zamboanga area. It is only by analyzing Southern Subanen in the context of other Subanen languages (and other Greater Central Philippine languages in general) that we can provide a more accurate account of the historical development of its aspirated consonants, as we will explore in the following sections.

**2. NOTES ON SOUTHERN SUBANEN PHONOLOGY.** This section will present an overview of some relevant aspects of the synchronic and diachronic phonology of Southern Subanen, in order to provide some background about how and why the aspirated consonants developed.

**2.1 INDIVIDUAL SEGMENTS.** Southern Subanen's phoneme inventory consists of twenty consonants and six vowels, as illustrated in table 1. This unusually large number of phonemes for a Greater Central Philippine language is the result of the addition of four aspirated consonants, /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup> k<sup>h</sup>/, deriving from earlier consonant clusters \*kp, \*kt, \*ks, and \*gk, respectively; and two new vowels, /o/ and /e/, deriving from earlier vowel sequences \*au and \*ai, respectively.

With the exception of the four aspirated consonants, the consonant inventory of Southern Subanen is largely similar to that of other Greater Central Philippine languages. A few comments are warranted, however. First, the Southern Subanen consonants /k ? h/ are limited in distribution. PGCPH \*k became Southern Subanen /h/ in syllable onsets (whether word-initial, intervocalic, or postconsonantal). Therefore, PGCPH \*k is only

**TABLE 1. THE PHONEMES OF SOUTHERN SUBANEN**

| CONSONANTS     |                |                |   | VOWELS |   |   |
|----------------|----------------|----------------|---|--------|---|---|
| p              | t              | (k)            | ? | i      | ə | u |
| p <sup>h</sup> | t <sup>h</sup> | k <sup>h</sup> |   | e      |   | o |
| b              | d              | g              |   |        | a |   |
|                | s              |                | h |        |   |   |
|                | s <sup>h</sup> |                |   |        |   |   |
| m              | n              | ŋ              |   |        |   |   |
|                | l              |                |   |        |   |   |
|                | r              |                |   |        |   |   |
| w              | y              |                |   |        |   |   |

10. As will be explained in 2.1, /k<sup>h</sup>/ does not contrast with /k/ because singleton \*k became /h/ in exactly the same positions where /k<sup>h</sup>/ can occur.

reflected as /k/ in word-final position, and as the first member of a cluster in which the second member was a voiced consonant (/b l m n w/): *gutek* ‘brain’ (< PGCPH \*ʔutek), *gekbruk* ‘woodborer’ (< PGCPH \*bukbuk).<sup>11</sup> However, as examples (1)–(6) illustrate, /k<sup>h</sup>/ is the reflex of the PSUB cluster \*g-k that occurred when a \*k-initial PSUB root was prefixed with a \*g-final prefix, or preceded by a \*g-final case marker.<sup>12</sup>

- (1) pekhan /pək<sup>h</sup>an/ ‘eat (AF.PRS)’ < PSUB \*pəg-kaan; but pehan /pəhan/ ‘feed (OF.CAUS.IMP)’ < \*PSUB \*pak-kaan
- (2) khini /k<sup>h</sup>ini/ ‘is here’ < PSUB \*əg-kini;<sup>13</sup> but hini ‘this’ < PSUB \*kini
- (3) khin /k<sup>h</sup>in/ ‘is there (near listener)’ < PSUB \*əg-ki(y)ən; but hin ‘that (near listener)’ < PSUB \*ki(y)ən
- (4) khiyâ /k<sup>h</sup>iyâʔ/ ‘is there (far from both)’ < PSUB \*əg-kiyaʔ; but hiyâ ‘that (far from both)’ < PSUB \*kiyaʔ
- (5) khitû /k<sup>h</sup>itûʔ/ ‘is there (far from both)’ < PSUB \*əg-kituʔ; but hitû ‘that (far from both)’ < PSUB \*kituʔ
- (6) khemet /k<sup>h</sup>əmət/ ‘hand’ < PSUB \*əg=kəmət

Proto-Subanen did not have a phoneme \*h, as PGCPH \*h had been lost in all environments. Therefore, the consonant /h/ only occurs in native Southern Subanen lexicon as the reflex of Proto-Subanen \*k in syllable onsets (whether word-initial, intervocalic, or postconsonantal), and is in complementary distribution with /k/. Likewise, since PSUB \*k is only reflected as /k/ in syllable codas, while /k<sup>h</sup>/ only occurs in syllable onsets (being the reflex of the consonant cluster \*-gk- that could only occur between two vowels in PSUB), /k/ and /k<sup>h</sup>/ do not contrast in Southern Subanen. This is one key difference between the relationship of /k<sup>h</sup>/ to /k/ compared to the other aspirated-unaspirated pairs. Additionally, Southern Subanen /k/ does not contrast with /h/ in native words, since they are both reflexes of earlier \*k, but native speakers now make a distinction between /k/ and /h/, and spell them with two different letters (*k* and *h*, respectively). It is likely that recent borrowings from Cebuano, Tagalog, and English have reinforced the phonemic nature of /k/ and /h/ in all positions over the past century. Furthermore, while the Southern Subanen speakers who worked on the native-speaker Bible translation half a century ago

11. /k/ has not been found to occur before the consonants /g r ŋ y/.

12. A form preceded by \* is a reconstruction, a form preceded by a + is a borrowing, and a form preceded by \*\* is ungrammatical. Orthographic conventions in the Southern Subanen language include: é = /e/ in the Southern Subanen orthography (while *e* represents /ə/). A diacritic ^ over a final vowel indicates a final glottal stop, otherwise not represented in the orthography. Grammatical abbreviations used in this paper (other than those that follow the Leipzig Glossing Rules) include ABIL, abilitative; AF, Actor Focus; LF, Location Focus; NONPST, nonpast; OF, Object Focus. Protolanguage abbreviations are PGCPH, Proto-Greater Central Philippines; PSPH, Proto-Southern Philippines; PSUB, Proto-Subanen; PDAN, Proto-Danao; SSUB, Southern Subanen. Language abbreviations in tables are CSUB, ESUB, and NSUB, Central, Eastern, and Northern Subanen, respectively; WSUB, Western Subanon; and KOL, Kolibugan.

13. Besides the internal evidence that there was a reflex of the PGCPH \*ag- prefix as the source of these Southern Subanen present-locational deictics, the closely related Southern Philippine language Maranao also bears witness to the presence of this prefix on its present-locational forms, even though the bases differ: *zisii* /s<sup>h</sup>isiʔi/ ‘is here’ (< PDAN \*əd-si-siʔi < Pre-PDAN \*aG-si-siʔi), *zisan* /s<sup>h</sup>isan/ ‘is there (near listener)’ (< PDAN \*əd-si-san < Pre-PDAN \*aG-si-san), *ndoroo/ndodon* ‘is there (far from both)’ (< PDAN \*ən-du-duʔu(n), < Pre-PDAN \*aG-du-duʔu(n)), all reflecting \*ag-CV- + base (but note irregular *zisan* instead of expected \*\*zasan).

did not make an orthographic distinction between [k] and [k<sup>h</sup>], the speakers interviewed—in some cases, sons and daughters of the Bible translators—virtually all now prefer to write [k] as *k* and [k<sup>h</sup>] as *kh*.

The loss of \**h* in Proto-Subanen and the subsequent shift of PSUB \**k* > SSUB /*h*/ appear to have taken place within the past 500 years or so, evidenced by the fact that even borrowings from Malay (and Arabic loans via Malay) have been affected by these two shifts;<sup>14</sup> for example, *uhum* /uhum/ ‘to judge’ (< +*hukum*), *gmisihin* /gmisihin/ ‘poor’ (< +*miskin*), *gmahasud* /gmahasud/ ‘purpose’ (< +*maksud*), *gari* /gari/ ‘king’ (< +*hadi?* ‘king’ < Malay +*haji?* ‘title for a Muslim man who has made the *Haji* pilgrimage’).<sup>15</sup>

PGCPH \**ʔ* was regularly lost in Proto-Subanen in all but word-final positions: *begu* /bəgu/ ‘new’ (< PGCPH \**baʔgu*), *gembegat* /gəmbəgat/ ‘heavy’ (< PGCPH \**bəgʔat*), *gmetud* /gmətud/ ‘true’ (< PGCPH \**ma-tuʔud*), *gmelat* /gməlat/ ‘bad’ (< PGCPH \**ma-raʔət*), but *sugû* /sugu/ ‘command (v.)’ (< PGCPH \**suguʔ*) and *gbatâ* /gbata/ ‘child’ (< PGCPH \**bataʔ*). Word-final glottal stops are retained even when the root word is suffixed, as in *talû* /talu/ ‘say’ > *teluen* /təluʔən/ ‘say (OF)’. Note that the loss of initial PGCPH \**ʔ* and \**h* paved the way for the final \**g* of the Proto-Subanen case markers (cf. tables 6 and 7) to be reanalyzed as the first consonant of the affected nouns, as with *gulu* /gulu/ ‘head’ (< PRE-PSUB \**əg=ʔulu* < PGCPH \**ʔulu*), *gulipen* /gulipən/ ‘slave’ (< PRE-PSUB \**əg=ʔuripən* < PGCPH \**ʔuripən*), *gikam* /gikam/ ‘mat’ (< PRE-PSUB \**əg=hikam* < PGCPH \**hikam*), and *guhûm* /guhûm/ ‘a judge’ (< PRE-PSUB \**əg=hukum* < Malay +*hukum* < Arabic). This is a characteristic of all Subanen languages, and was only possible because Proto-Subanen also treated case markers as closely-bound proclitics, effectively making them part of the following root word, uncommon behavior in Philippine languages.

The loss of intervocalic glottal stop caused adjacent vowels to coalesce. Identical vowels simply merged, as in *ditas* /ditas/ ‘over, above’ < PGCPH \**dī=taʔas*, or *gmetud* /gmətud/ ‘true’ < PGCPH \**ma-tuʔud*. If the second vowel was a schwa, that vowel assimilated to the previous vowel in Proto-Subanen, and then the resulting PSUB long vowel shortened in Southern Subanen: SSUB *han* /han/ ‘eat’ < PSUB \**kaan* < PGCPH \**kaʔən*, SSUB *gbitun* /gbitun/ ‘star’ < PSUB \**bituun* < PGCPH \**bituʔən*. Resulting sequences of \*-ai- or \*-au- monophthongized as /e/ or /o/, respectively: SSUB *dlén* /dlən/ ‘different’ (< PGCPH \**laʔin*), SSUB *long* /loŋ/ ‘say’ (< PGCPH \**laʔuŋ*), SSUB *menog* /mənog/ ‘descend’ (< PGCPH \**ma-naʔug*), SSUB *pén-*

14. It is being assumed here that Arabic loans would have been borrowed by Southern Subanen subsequent to the large-scale introduction of Islam into the Philippines in the fourteenth and fifteenth centuries, and likely in the sixteenth through eighteenth centuries at the height of power of the Islamic sultanates that were established on the eastern coast of Illana Bay (see map 1) and in the Sulu Archipelago.

15. This last word is likely the product of a single instance of borrowing from a Greater Central Philippine language in which the Malay word (from Arabic) *haji* (with final glottal stop in Brunei Malay) ‘title for a Muslim man who has made the *Haji* pilgrimage’ underwent a semantic shift to mean ‘king’, as this is the meaning found in Tagalog, Bikol, Cebuano, Southern Subanen, and a number of other Greater Central Philippine languages. The form of the original borrowing of this word was likely +*hadi?* and not +*haji?*, and may have originated from the Pre-Iranun-speaking Sultanate of Maguindanao, since the Maranao and Iranun form of the Islamic title is /*kadi?*/, \**h* from early Malay borrowings having subsequently shifted to /*k*/ in modern Maranao and Iranun.

*ghud* /pɛɲhud/ ‘cause to sit’ (< PGCPH \*pa-ʔingkuð). The loss of \*k and \*h have the same effect on the vowels: SSUB *pogas* /pogas/ ‘cause to wash’ (< PGCPH \*pa-hugas), SSUB *gmesét* /gməsət/ ‘sick’ (< PGCPH \*ma-sakit).<sup>16</sup>

Except postconsonantly and word-finally, PSUB \*d became SSUB /r/, as in *rengɛg* /rɛɲɛg/ ‘hear’ (< PGCPH \*dɛɲɛg), *ruwa* /ruwa/ ‘two’ (< PGCPH \*du(h)a), and *gari* /gari/ ‘king’ (< earlier +hadi? < Malay +haji?). Synchronically, word-final /d/ becomes /r/ when suffixed or when followed by a vowel-initial clitic pronoun; for example, *inghud* /iɲhud/ ‘sit’ > *ginghuran* /giɲhuran/ ‘chair’ (< PSUB \*ɛg=iɲkuð-an), *seled* /sələd/ ‘enter’ > *seler* ‘a [sə.lə.r=a] ‘Enter!’ (< PSUB \*sələd=a). Pronouns, demonstratives, and case markers that begin with /d/ also have /r/-initial allomorphs, such as *din* ~ *rín* ‘3SG.GEN’, *dan* ~ *ran* ‘3PL.GEN’, *dyanan* ~ *ryanan* ‘1SG.OBL’, *di* ~ *ri* ‘oblique case marker’, *dini* ~ *rini* ‘here’, *ditû* ~ *ritû* ‘there’.<sup>17</sup>

In prefixes, intervocalic /n/ was dropped, resulting in forms such as *mig-* ‘AF.PST’ < \*m<in>ɛg-, *pig-* ‘OF.PST’ < \*p<in>ɛg-, and *mih-* ‘AF.PST.ABIL’ < \*m<in>aka-. When \*<in> ‘past infix’ was affixed to a root word whose first vowel was a schwa, what developed was a system of ablaut, similar to that described by Blust (1997) for some languages in Borneo: *begay* /bɛgaj/ ‘give’ > *bigay* /bigaj/ ‘gave (OF.PST, < PRE-SSUB \*b<i>ɛgaj)’, *lebeng* /ləbɛɲ/ ‘bury’ > *libeng* /libɛɲ/ ‘buried (OF.PST, < PRE-SSUB \*l<i>ɛɲ)’, *seled* /sələd/ ‘enter’ > *sumeled* /sumələd/ ‘enter (AF.NONPST, < PRE-SSUB \*s<um>ələd), but *sumiled* /sumiləd/ ‘entered (AF.PST, < PRE-SSUB \*s<umi>ələd’.<sup>18</sup>

Finally, the aspirated consonants /p<sup>h</sup> t<sup>h</sup> k<sup>h</sup>/ only occur in word-initial and intervocalic positions. This is because they are the reflexes of Proto-Subanen consonant clusters, and clusters could only occur between two vowels in the protolanguage, although if the first vowel was an initial \*ə (or \*a, under certain circumstances), it was dropped, and the result in the modern language is a word-initial aspirated consonant.

**2.2 RESTRICTIONS ON CONSONANT CLUSTERS.** Proto-Subanen had major phonotactic constraints that set the stage for the chain of events that would culminate in the development of the aspirated consonants of Southern Subanen. A much more limited set of consonant clusters were allowed in Proto-Subanen than is generally found in Greater Central Philippine languages: about two dozen in Proto-Subanen and its daughter languages, compared to over a hundred in languages like Tagalog, Hanunoo, and Southern Tagbanwa. In fact, the Subanen languages (and Proto-Subanen itself) are some of the most intolerant Philippine languages in regards to consonant clusters, second

16. While Southern Subanen lost vowel length, cognates in Central Subanen preserve the contrastive vowel length that resulted from the two adjacent vowels; for example, *aan* /aan/ ‘eat’, *diin* /diin/ ‘there (near listener)’, *gebii* /gəbii/ ‘night’, *liig* /liig/ ‘neck’, *melaat* /məlaat/ ‘bad’, *bituun* /bituun/ ‘star’, *ditaas* /ditaas/ ‘over, above’. Likewise, Central Subanen preserves the /ai/ and /au/ sequences that have monophthongized in Southern Subanen: *lain* /lain/ ‘different’, *naug* /naug/ ‘descend’, *laung* /laun/ ‘speak, say’, *sait* /sait/ ‘sickness’.

17. As with /k/ and /h/, borrowing from Cebuano, Tagalog, and English over the past century has probably reinforced the phonemic nature of /d/ and /r/.

18. Note that ablaut has developed even further in Central Subanen, which has three-way vowel contrasts in roots whose first vowel is /ə/: for example, *geted* /gətəd/ ‘chase’ > *guutəd* /guutəd/ ‘chase (AF.INF)’, *giitəd* /giitəd/ ‘chase (OF.PST)’, *gumitəd* /gumitəd/ ‘chase (AF.PST)’, *geteren* /gətərən/ ‘chase (OF.INF)’. Note also that while some of the Central Subanen forms have long vowels, vowel length was lost in Southern Subanen (cf. footnote 16).

only to northern Sulawesi's Mongondow-Gorontalo languages (which allow no more than six or seven consonant clusters, all consisting of a nasal followed by an obstruent), and the Danao languages (Maranao, Iranun and Maguindanaon), located to the immediate east of the Subanen languages (see map 1). In Proto-Subanen, given a cluster  $-C_1C_2-$ , any given  $C_2$  could only be preceded by three consonants: a homorganic nasal, or a voiced or voiceless velar (the exceptions are the consonants /l/, /w/, or /y/, each of which can be preceded by four to six possible consonants).

The following six rules can be posited to derive Proto-Subanen forms from Proto-Greater Central Philippines:

Rule (1) Velarization:  $C_1 > [+velar, +stop] / \_ C_2$  (if  $C_1$  was a stop or fricative)

Rule (2) Assimilative Devoicing:  $g > [-voice] / \_ [-voice, -velar]$

Rule (3) Morpheme-Internal \*-kk- reduction:  $*-kk- > *k$  morpheme-internally<sup>19</sup>

Rule (4) L-nasalization:  $l > nasal / \_ C$

Rule (5) Nasal Assimilation:  $nasal > [\alpha \text{ place}] / \_ C^{20}$

Rule (6) a. Penult Vowel Neutralization:  $a > \emptyset / \_ CC^{21}$

b. Reduplicated Monosyllable Penult Vowel Neutralization:  $V > \emptyset / \_ CC$

Rules (7) and (8) took place late in the Proto-Subanen stage.

Rule (7) Word-initial Consonant Replacement:  $\#C > g^{22}$

Rule (8) Word-initial  $*k > \emptyset^{23}$

Rule (7) applied only to reduplicated monosyllables. It may have followed a wave model of spreading, as it is applied unevenly in the daughter languages, and applies least often in Western Kolibugan and Eastern Subanen. It seems to have applied more regularly in Southern Subanen, but there are still occasional exceptions, such as *bembul* 'feather' (< PGCPH *\*bulbul*) instead of expected *\*\*gəmbul*. In at least some Subanen languages, this rule may have applied to nouns more often than to verbs, but this needs further study.

Rule (8) also applied late in the Proto-Subanen stage, deleting initial  $*k$  in reduplicated monosyllables and many other forms, but did not apply in Western Subanon or Western Kolibugan.

19. Cf. PSUB *\*(k)əkəp* 'hug' < PGCPH *\*kəkəkəp*, PSUB *\*(k)ukut* 'scratch, scrape' < PGCPH *\*kut-kut*, PSUB *\*(k)ukud* 'grate' < PGCPH *\*kudkud*.

20. Cf. PSUB *\*təndu?* 'point, teach' < PGCPH *\*tuldu?*, PSUB *\*-əndək* 'fear, afraid' < PGCPH *\*haldək*, PSUB *\*bəmbul* 'body hair' < PGCPH *\*bulbul*.

21. Rule (6a) affected  $*a$  in closed penults, all prepenult syllables, and all prefixes, except the Actor Focus abilitative *maha-* and its past counterpart, *miha-*; for example, *maharengeg* 'can hear', *miharengeg* 'could hear'. It is unclear why these two particular prefixes did not participate in this rule. Rule (6b) only applied to reduplicated monosyllables

22. Cf. PSUB *\*(g,d)əgdəb* 'chest' < PGCPH *\*dəbdəb*, PSUB *\*(g,p)əkəkəkək* 'wing' < PGCPH *\*pak-pak*, PSUB *\*gəkəkək* 'woodborer' < PGCPH *\*bukbuk*.

23. Cf. PSUB *\*(g,k)ayu* 'wood' < PGCPH *\*kayu*, PSUB *\*(g,k)utu* 'lice' < PGCPH *\*kutu*, PSUB *\*(g,k)ilat* 'lightning' < PGCPH *\*kilat*.

After the breakup of Proto-Subanen, six additional innovations took place in Southern Subanen, indicated by rules nine to fourteen:

Rule (9) Assimilative Alveolarization: [+velar] > d / \_ [+alveolar]

Rule (10) Labial Implosion: \*gb > \*ɓ

Rule (11) Gemination: in clusters of same-voice stops or fricatives, the first member fully assimilated to the second member, yielding geminate consonants.

Rule (12) Geminate Aspiration: \*CC > /C<sup>h</sup>/ if C is [-voice]

Rule (13) \*k Aspiration: \*k > /h/ in syllable onsets

Rule (14) a. Long Vowel Reduction: \*V<sub>1</sub>V<sub>1</sub> > /V/

b. Diphthong Reduction: \*au > /o/, \*ai > /e/

The derivations of nine words from Proto-Greater Central Philippines into Southern Subanen are illustrated in table 2.<sup>24</sup> The final four columns in table 2 illustrate forms that developed aspirated consonants in Southern Subanen, from root words of different shapes: *githēb* 'end', whose aspirated consonant is the reflex of what historically was a

**TABLE 2. PHONOTACTIC RULES AFFECTING CONSONANT CLUSTERS IN VARIOUS STAGES OF THE SUBANEN LANGUAGES**

| RULE                        | *kəkəkəp<br>'hug' | *ludlud<br>'hide' | *bulbul<br>'feather' | *bukbuk<br>'wood-<br>borer' | *dəbdəb<br>'chest' | *təbtəb<br>'end'      | *səpsəp<br>'suck' | *pag-kaan<br>'eat (PRS)' | *baktin<br>'piglet'   |
|-----------------------------|-------------------|-------------------|----------------------|-----------------------------|--------------------|-----------------------|-------------------|--------------------------|-----------------------|
| <b>PRE-PROTO-SUBANEN</b>    |                   |                   |                      |                             |                    |                       |                   |                          |                       |
| (1)                         | kəkəkəp           | luglud            | —                    | —                           | dəgdəb             | təgtəb                | səksəp            | —                        | —                     |
| (2)                         | —                 | —                 | —                    | —                           | —                  | təktəb                | —                 | pak-kaan                 | —                     |
| (3)                         | kəkəkəp           | —                 | —                    | —                           | —                  | —                     | —                 | —                        | —                     |
| (4)                         | —                 | —                 | bunbul               | —                           | —                  | —                     | —                 | —                        | —                     |
| (5)                         | —                 | —                 | bumbul               | —                           | —                  | —                     | —                 | —                        | —                     |
| (6)                         | —                 | ləglud            | bəmbul               | bəkbuk                      | —                  | —                     | —                 | pək-kaan                 | bəktin                |
| <b>PROTO-SUBANEN</b>        |                   |                   |                      |                             |                    |                       |                   |                          |                       |
| (7)                         | —                 | gəglud            | —                    | gəkbuk                      | gəgdəb             | gəktəb                | gəksəp            | —                        | —                     |
| (8)                         | əkəkəp            | —                 | —                    | —                           | —                  | —                     | —                 | —                        | —                     |
| <b>PRE-SOUTHERN SUBANEN</b> |                   |                   |                      |                             |                    |                       |                   |                          |                       |
| (9)                         | —                 | gədlud            | —                    | —                           | gəddəb             | —                     | —                 | —                        | —                     |
| (10)                        | —                 | —                 | —                    | —                           | —                  | —                     | —                 | —                        | —                     |
| (11)                        | —                 | —                 | —                    | —                           | —                  | gəttəb                | gəssəp            | —                        | bəttin                |
| (12)                        | —                 | —                 | —                    | —                           | —                  | gəthəb                | gəshəp            | pək <sup>h</sup> aan     | bəth <sup>h</sup> in  |
| (13)                        | əhəkəp            | —                 | —                    | —                           | —                  | —                     | —                 | —                        | —                     |
| (14)                        | —                 | —                 | —                    | —                           | —                  | —                     | —                 | pək <sup>h</sup> an      | —                     |
| <b>SOUTHERN SUBANEN</b>     |                   |                   |                      |                             |                    |                       |                   |                          |                       |
| modern reflex               | /əhəkəp/          | /gədlud/          | /bəmbul/             | /gəkbuk/                    | /gəddəb/           | /git <sup>h</sup> əb/ | /gəshəp/          | /pək <sup>h</sup> an/    | /bət <sup>h</sup> in/ |

24. The numbered rules in table 2 are: (1) Velarization; (2) Assimilative Devoicing; (3) Morpheme-Internal\*-kk- reduction; (4) L-nasalization; (5) Nasal Assimilation; (6) Penult Vowel Neutralization; (7) Word-initial Consonant Replacement; (8) Word-initial \*k > Ø; (9) Assimilative Alveolarization; (10) Labial Implosive; (11) Gemination; (12) Geminate Aspiration; (13) \*k > /h/; (14) Vowel Reduction.

voiced-voiceless cluster in PGCPH \*təbtəb; *geshep* /gəs<sup>h</sup>əp/ ‘suck’, whose aspirated consonant is the reflex of what historically was a cluster of voiceless consonants in PGCPH \*səpsəp; *bethin* /bət<sup>h</sup>in/ ‘piglet’, whose medial \*-kt- cluster was inherited from PGCPH \*baktin; and *pekhan* /pək<sup>h</sup>an/ ‘eat (AF.PRS)’ < PSUB \*pəg-kaan, in which the aspirated consonant developed from the boundary of a prefix and a root word.

**2.3 ASPIRATED CONSONANTS.** In spite of the odd combination of linguistic environments in which it is found, the source of aspiration in Southern Subanen actually turns out to be quite straightforward. Every occurrence of /p<sup>h</sup>/, /t<sup>h</sup>/, /k<sup>h</sup>/, or /s<sup>h</sup>/ can ultimately be traced to a Proto-Subanen cluster of \*kp, \*kt, \*gk (via \*kk), or \*ks, which evolved into geminates in Pre-Southern Subanen.

The most straightforward series of hypothetical events leading to the emergence of Southern Subanen’s aspirated consonants is that geminates \*gg and \*kk already existed early in Pre-Southern Subanen; and then in all of Proto-Subanen’s other same-voice stop-stop or stop-fricative clusters (\*gd, \*kp, \*kt, \*ks), the first member of the cluster fully assimilated to the second member, yielding geminates \*dd, \*pp, \*tt, and \*ss, respectively. The exception is \*gb, possibly because it had already become an implosive /b/, as it is in modern Southern Subanen. Subsequently, the voiceless geminates became aspirated consonants /p<sup>h</sup>/, /t<sup>h</sup>/, /s<sup>h</sup>/, and /k<sup>h</sup>/, respectively. Note that around the same time as the shift from geminate to aspirated consonant, singleton \*k became /h/, so these two shifts may have been interrelated.

Such a series of innovations is hardly unprecedented. Geminate consonants are known to have developed into postaspirated consonants, as in some Polynesian Outliers (Blust, pers. comm., October 31, 2008), and increased stop closure has also been shown to be involved in the development of postaspiration in languages like Andalusian Spanish (Parrell 2009, Torreira 2007). Full assimilation of one member of a cluster to the other member to yield a geminate consonant is also quite common, and has happened in a number of Greater Central Philippine languages (for example, certain Dabawenyo/Mansakan, Manobo, and Palawan languages, to name a few).

While the progression of events is not very complicated, something should be said from a Philippine perspective about geminates becoming aspirated consonants. No other known Philippine language has innovated aspiration from geminates (found in Tausug, various Sama-Bajaw languages, various Dabawenyo/Mansakan languages, and Rinconada Bikol, as well as many northern Philippine languages), from \*-kC- clusters (widespread in Philippine languages), or even from \*-Ch- clusters (found in Tagalog, Cebuano, Ilonggo, and standard Waray-Waray, among others). In fact, at least one Philippine language has done the opposite of developing aspirated consonants: Tagalog, in borrowing Sanskrit words that had aspirated consonants, split the aspirated consonant into -Ch- clusters, in which C is in the coda of the first syllable and /h/ is the onset of the following syllable.<sup>25</sup> Evidence for this includes Tagalog *mukhâ* ‘face’ and *dukhâ* ‘poor’, the Sanskrit sources of which were apparently /mu.k<sup>h</sup>a/ and /du.k<sup>h</sup>a/, but the Tagalog forms of which are [muk.háʔ] and [duk.háʔ]. Since Tagalog did not have aspirated consonants, it reanalyzed the aspirated consonant /k<sup>h</sup>/ as a cluster of /k/ + /h/, and split that cluster between syllables.

**2.4 AN ALTERNATE EVOLUTION?** The series of events outlined in section 2.3 appears to be the simplest and most straightforward. An alternate series of events may also be proposed, however, in which the \*k of the Proto-Subanen clusters \*kp, \*kt, and \*ks shifted to Pre-Southern Subanen \*h (as \*k did in syllable onsets). Subsequently, the Pre-Southern Subanen clusters \*hp, \*ht, and \*hs shifted to /p<sup>h</sup>/, /t<sup>h</sup>/, and /s<sup>h</sup>/, similar to the shift from preaspiration to postaspiration as documented by Parrell (2009) for West Andalusian Spanish. This scenario is initially attractive, because it ties the \*k > /h/ shift in onsets to the \*k-to-aspiration shift in clusters. However, there are two problems with this scenario: first, the \*k-to-/h/ shift did not otherwise occur in syllable codas in Southern Subanen (note clusters of \*-kb-, \*-kn-, and \*-kl- did not become \*\*hb, \*\*hn, and \*\*hl), nor did \*k > /h/ word-finally. Second, this scenario would require a completely separate series of events to be proposed for the shift of \*-gk- (across morpheme boundaries) to /k<sup>h</sup>/, as there is no proposed \*g > /h/ shift. Therefore, \*gk would still have to pass through a period when it became a geminate \*kk, which later would become Southern Subanen /k<sup>h</sup>/. The scenario outlined in 2.3 is likewise preferable because it accounts for the development of voiced geminates with the same rule that accounts for the voiceless geminates, and provides a single series of events accounting for the development of aspiration from voiceless geminates.

**2.5 ASPIRATED CONSONANTS IN ROOT WORDS.** Minimal and near-minimal pairs such as (7)–(26) demonstrate the contrast between the aspirated consonants and their unaspirated counterparts.

- |         |           |                                     |                                   |
|---------|-----------|-------------------------------------|-----------------------------------|
| (7) a.  | bethî     | /bət <sup>h</sup> i/                | ‘bend and break with fingers’     |
|         | b. betî   | /bəti/                              | ‘popped rice’                     |
| (8) a.  | gethus    | /gət <sup>h</sup> us/               | ‘have difficulty breathing’       |
|         | b. getus  | /gətus/                             | ‘for thread to snap’              |
| (9) a.  | githing   | /git <sup>h</sup> iŋ/               | ‘sound of iron ringing’           |
|         | b. giting | /gitiŋ/                             | ‘gills’                           |
| (10) a. | lethas    | /lət <sup>h</sup> as/               | ‘unravel’                         |
|         | b. dletas | /dlətas/                            | ‘hike’                            |
| (11) a. | lethî     | /lət <sup>h</sup> iʔ/               | ‘broken twig or branch’           |
|         | b. dletî  | /dlətiʔ/                            | ‘lightning’                       |
| (12) a. | phethan   | /p <sup>h</sup> ət <sup>h</sup> an/ | ‘sugarcane tips that are planted’ |
|         | b. petan  | /pətan/                             | ‘cast a fishing net into river’   |
| (13) a. | pithik    | /pit <sup>h</sup> ik/               | ‘let go of, as an arrow’          |
|         | b. pitik  | /pitik/                             | ‘flick’                           |

25. These forms were probably borrowed via Malay, so it is possible that the reanalysis of aspirated consonants into \*-C.h- clusters was an innovation not in Tagalog, but in Old Brunei Malay or whatever Old Malay dialect Tagalog borrowed them from. However, there is no surviving evidence for this, as every known modern Malay dialect has lost earlier \*h, and /h/ therefore only exists in Malay as the reflex of earlier \*q or in loans from English and Arabic. Furthermore, no known Malay dialect retains aspirated consonants in Sanskrit loans (or from any other source). Therefore, if these forms already had -Ch- clusters when Tagalog borrowed them, then Tagalog has remained more conservative in this regard than the languages from which it once borrowed.

- |         |          |                                     |                                   |                                       |
|---------|----------|-------------------------------------|-----------------------------------|---------------------------------------|
| (14) a. | thehû    | /t <sup>h</sup> əhuʔ/               | ‘snap beetle’                     |                                       |
|         | b.       | tehû                                | /təhuʔ/                           | ‘nod the head’                        |
| (15) a. | thethû   | /t <sup>h</sup> ət <sup>h</sup> uʔ/ | ‘spit out betel nut’              |                                       |
|         | b.       | mitethû                             | /mitət <sup>h</sup> uʔ/           | ‘break s.t. off at its base’          |
| (16) a. | gephis   | /gəp <sup>h</sup> is/               | ‘baby bird, chick’                |                                       |
|         | b.       | gepis                               | /gəpis/                           | ‘empty rice husks’                    |
| (17) a. | lephang  | /ləp <sup>h</sup> ɑŋ/               | ‘broad and flat’                  |                                       |
|         | b.       | lepang (lipang)                     | /ləpaŋ/                           | ‘steam meat’                          |
| (18) a. | lephî    | /ləp <sup>h</sup> iʔ/               | ‘flat and long’                   |                                       |
|         | b.       | lepî                                | /ləpiʔ/                           | ‘fold, as clothes’                    |
| (19) a. | gelephut | /gələp <sup>h</sup> ut/             | ‘sound of vehicle backfiring’     |                                       |
|         | b.       | leput                               | /ləput/                           | ‘hemorrhoids’                         |
| (20) a. | tiphes   | /tip <sup>h</sup> əs/               | ‘finish, esp. eating and talking’ |                                       |
|         | b.       | tipes                               | /tipəs/                           | ‘extract the sweet part of sugarcane’ |
| (21) a. | gbishû   | /gbis <sup>h</sup> uʔ/              | ‘say too much’                    |                                       |
|         | b.       | gbisû                               | /gbisuʔ/                          | ‘ghost’                               |
| (22) a. | deshel   | /dəs <sup>h</sup> əl/               | ‘push hard’                       |                                       |
|         | b.       | desel                               | /dəsəl/                           | ‘push (less hard than deshel)’        |
| (23) a. | dlesheb  | /dləs <sup>h</sup> əb/              | ‘bed sore’                        |                                       |
|         | b.       | leseb                               | /ləsəb/                           | ‘stage prior to developing bed sores’ |
| (24) a. | lushik   | /lus <sup>h</sup> ik/               | ‘eat as a group, as vultures’     |                                       |
|         | b.       | lusik                               | /lusik/                           | ‘eat as a group, as chickens’         |
| (25) a. | meshem   | /məš <sup>h</sup> əm/               | ‘very sour’                       |                                       |
|         | b.       | mesem                               | /məsəm/                           | ‘sour’                                |
| (26) a. | peshâ    | /pəs <sup>h</sup> aʔ/               | ‘boil (n.); infection’            |                                       |
|         | b.       | pesâ                                | /pəsaʔ/                           | ‘crush something’                     |

At least some of the above forms have clearly reconstructible sources, such as (26a) *peshâ* /pəs<sup>h</sup>aʔ/ ‘boil (n.)’ < PGCPH \*pəgsaʔ vs. (26b) *pesâ* /pəsaʔ/ ‘crush something’ < PGCPH \*pəsaʔ.

The next two sections will deal with the development of aspirated consonants from clusters resulting from prefixation (section 3) and from proclitic case markers (section 4).

**3. ASPIRATION IN PREFIXES.** Just as certain sequences of Proto-Subanen consonants developed into aspirated consonants in root words in Southern Subanen, the same thing happened to consonant sequences that occurred in forms prefixed with reflexes of Proto-Greater Central Philippines \*mag- and \*pag-. Proto-Subanen \*mæg- and \*pæg- had allomorphs according to the initial segment of the root to which they were prefixed, as illustrated in table 3 for Southern Subanen.

Not only is aspiration an integral part of the affixation of roots with initial /p t s/ when prefixed with a reflex of Proto-Subanen \*mæg- or \*pæg-, but it is also the only contrasting

feature distinguishing these verbs from other nearly identical verbs prefixed with reflexes of \**mə-* and \**pə-*. There are a plethora of minimal pairs demonstrating this, of which items (27)–(30) are only a few examples.

- (27) a. methalû /mət<sup>h</sup>aluʔ/ ‘say (AF)’ (< PSUB \**məg-taruʔ*)  
 b. metalû /mətaluʔ/ ‘is able to say (OF.ABIL)’ (< PSUB \**mə-taruʔ*)
- (28) a. mithalû /mit<sup>h</sup>aluʔ/ ‘said (AF.PST)’ (< PSUB \**mig-taruʔ*)  
 b. mitalû /mitaluʔ/ ‘was able to say (OF.ABIL.PST)’ (< PSUB \**mi-taruʔ*)
- (29) a. mesesak /məsəsak/ ‘one who repeatedly asks’ (< PSUB \**mə-sə-sak*)  
 b. meshesak /məs<sup>h</sup>əsak/ ‘keep on asking’ (< PSUB \**məg-sa-sak*)  
 c. miseshak /misəs<sup>h</sup>ak/ ‘fell and landed with a loud noise’ (< PSUB \**mi-səksak*)
- (30) a. mesaluy /məsaluy/ ‘buyable’ (OF.ABIL) (< PSUB \**mə-saluy*)  
 b. meshaluy /məs<sup>h</sup>aluy/ ‘sell’ (AF.INF) (< PSUB \**məg-saluy*)  
 c. misaluy /misaluy/ ‘was able to be bought’ (OF.ABIL.PST) (< PSUB \**mi-saluy*)  
 d. mishaluy /mis<sup>h</sup>aluy/ ‘sold’ (AF.PST) (< PSUB \**mig-saluy*)  
 e. mihasaluy /mihasaluy/ ‘was able to buy’ (AF.ABIL.PST) (< PSUB \**mika-saluy*)  
 f. mihashaluy /mihəs<sup>h</sup>aluy/ ‘was able to sell’ (AF.ABIL.PST) (< PSUB \**mikag-saluy*)

The same shift also took place in complex affixes that resulted in Proto-Subanen clusters of \**-kp-* or \**-ks-*, like PSUB \**məkpə-* ‘AF.CAUS’ (< PGCPH \**mag-pa-*) and PSUB \**məksi-* ‘AF.PL’ (< PGCPH \**mag-si-*), as is evident in their Southern Subanen reflexes,

**TABLE 3. SUMMARY OF ALLOMORPHS OF PROTO-SUBANEN \**məg* IN SOUTHERN SUBANEN**

| AF * <i>məg-</i>    | AF * <i>mig-</i>    | non-AF * <i>pəg-</i> | non-AF * <i>pig-</i> | when followed by roots with an initial:     |
|---------------------|---------------------|----------------------|----------------------|---|
| mədlə- <sup>†</sup> | midlə- <sup>†</sup> | pədlə- <sup>†</sup>  | pidlə- <sup>†</sup>  | velar or glottal consonant (/ h g ŋ /)      |
| mə{C} <sup>h-</sup> | mi{C} <sup>h-</sup> | pə{C} <sup>h-</sup>  | pi{C} <sup>h-</sup>  | non-velar voiceless consonant (/ p t s k /) |
| məd- <sup>†</sup>   | mid- <sup>†</sup>   | pəd- <sup>†</sup>    | pid- <sup>†</sup>    | /l/ or /d/                                  |
| mə-                 | mi-                 | —                    | —                    | /m/ <sup>‡</sup>                            |
| məg-                | mig-                | pəg-                 | pig-                 | other consonant (/ b n w /) or vowel        |

<sup>†</sup> Note that these prefixes have /g/ instead of /d/ in all Subanen languages except Southern Subanen and some dialects of Northern Subanen

<sup>‡</sup> Verb roots beginning with /m/ are exceedingly rare in Philippine languages, likely to avoid confusion with inflected verbs beginning with prefixes like \**mag-*, \**mang-*, \**maN-*, \**maka-*, \**maki-*, \**mu-*, \**mi-*, \**ma-*, and \**m-*. The only Southern Subanen verb root beginning with /m/ is *mata* ‘wake up’, the inflected form of which is *məmata*, in which the *mə-* can be shown to derive from \**mag-* both because this form takes \**mag-* in virtually every other known GCPH language, and because there is no other prefix that would produce such a form (for example, if the prefix were \**maN-*, the expected surface form would be \*\**mangmata*, not *məmata*).

*mephe-* /məp<sup>h</sup>ə/ and *meshi-* /məʃ<sup>h</sup>i/, respectively. The stages of their development are illustrated in table 4.

The actor focus plural prefix *meshi-* includes the aspirated consonant /s<sup>h</sup>/, as illustrated in (31) and (32):

- (31) a. meladdang ‘lie down (SG.)’ (<PSUB \*mə-lagdaŋ)  
 b. meshiladdang ‘lie down (PL.)’ (<PSUB \*məg-si-lagdaŋ)  
 (32) a. mebaluy ‘become (SG.)’ (<PSUB \*mə-baluy)  
 b. meshibaluy ‘become (PL.)’ (<PSUB \*məg-si-baluy)

Furthermore, aspiration is the only feature distinguishing the AF.CAUS prefix *mephe-* /məp<sup>h</sup>ə/ (<PGCPH \*mag-pa-) from the prefix *mepe-* /məpə/ ‘OF.ABIL.CAUS’ (<PGCPH \*ma-pa-), as can be seen in example (33):

- (33) a. mepehan ‘feed (OF.ABIL.CAUS)’ (<PSUB \*mə-pə-kan)  
 b. mephehan ‘feed (AF.CAUS)’ (<PSUB \*məg-pə-kan)

The four-way contrast in (34) further underscores the important role aspiration plays in verb prefixes:

- (34) a. mepesaluy ‘cause to buy (OF.CAUS)’ (<PSUB \*mə-pə-saluy)  
 b. mepeshaluy ‘cause to sell (OF.CAUS)’ (<PSUB \*mə-pəg-saluy)  
 c. mephesaluy ‘cause to buy (AF.CAUS)’ (<PSUB \*məg-pə-saluy)  
 d. mepheshaluy ‘cause to sell (AF.CAUS)’ (<PSUB \*məg-pəg-saluy)

**4. ASPIRATION IN CASE MARKERS.** The innovation of aspiration also took place in consonant sequences resulting from root words with initial \*p, \*t, \*k, and \*s when preceded by case markers. Like nearly all Philippine languages, Subanen languages have case markers that introduce noun phrases (except pronouns, which are inherently marked for case), and mark—among other things—the role each NP plays in relationship to the verb and to each other. Unlike most Philippine languages, the PSUB case markers were treated as proclitics that were as tightly bound to the following NP head as a prefix would be, until eventually, the final \*g of the case marker came to be treated like part of the following root.<sup>26</sup> These case markers are illustrated in table 5, and their reconstructible Proto-Subanen sources are illustrated in table 6.

**TABLE 4. THE DERIVATION OF SOME SOUTHERN SUBANEN PREFIXES**

| STAGE    | RULE                      | *mag- + Initial *p/*t/*s                               | *magpa-              | *magsi-              |
|----------|---------------------------|--|----------------------|----------------------|
| PGCPH    |                           | *mag-(p,t,s)..   | *magpa-              | *magsi-              |
| Pre-PSUB | 2) Assimilative Devoicing | *mæk-(p,t,s)..   | *mækpa-              | *mæksi-              |
| Pre-SSUB | 11) Gemination            | *mə(pp,tt,ss)..  | *məppa-              | *məssi-              |
|          | 12) Geminate Aspiration   | *mə(p <sup>h</sup> ,t <sup>h</sup> ,s <sup>h</sup> ).. | *məp <sup>h</sup> ə- | *məʃ <sup>h</sup> i- |
| SSUB     |                           | meph.., meth.., mesh..                                 | mephe-               | meshi-               |

26. Referring to Central Subanen, Brichoux (1977a:157) explains that “there is a tendency noted to write substantive phrases as one word, e.g., ‘*sugbalayu*’ (“my house”), which would be equivalent to writing Pilipino *ang bahay ko* as \*\**angbahayko* ‘my house’.” This is a significant observation supporting the analysis of the Subanen case markers as strongly proclitic, since native speakers of languages outside of the Subanen subgroup have never been observed to write the case marker and following noun as a single word.

As we have discussed, Proto-Subanen (and all of its daughter languages) had strict phonotactic constraints on sequences of consonants (cf. 2.3.). Since the Proto-Subanen case markers behaved as proclitics, their final consonant \*g assimilated to the initial consonant of the following noun phrase head, creating the allomorphs illustrated in table 7. The Pre-Southern Subanen reflexes of these case markers, and their environmentally-conditioned allomorphs, are illustrated in table 8.

Of particular interest here is the final \*k of the forms preceding voiceless consonants. In these cases, the resulting \*kC clusters at the boundary of the case marker and root word developed into a geminate that later yielded an aspirated consonant, just as happened with prefixes and with morpheme-internal clusters. The result is that when the noun phrase head begins with /p t s/, the noun phrases now appear to be marked overtly by a case marker like

**TABLE 5. PARTIAL LIST OF SUBANEN CASE MARKERS  
(UNDERLYING FORMS)**

|     | WSUB/KOL | SSUB       | CSUB          | NSUB    | ESUB        |
|-----|----------|------------|---------------|---------|-------------|
| NOM | og       | sug, ig, g | sug, kig, ig  | sug     | əg, sug, ig |
| GEN | nog      | nug        | nug, nig, nəg | nug     | nəg         |
| OBL | sog      | di, tu(g)  | tug, dig, səg | dig, tu | səg         |

**TABLE 6. PROTO-SUBANEN CASE MARKERS**

|                  | NOMINATIVE         | GENITIVE               | OBLIQUE              |
|------------------|--------------------|------------------------|----------------------|
| NONPERSONAL (SG) | *əg<br>*sug<br>*ig | *nəg<br>*nug<br>(*nig) | *səg, *di(g), *tu(g) |
| PERSONAL (SG)    | *si                | *ni                    | *OBL + -ni           |

**TABLE 7. ALLOMORPHS OF SOME PROTO-SUBANEN CASE MARKERS**

| NOM | GEN  | OBL  | when followed by roots with an initial:<br>velar nasal (/ŋ/) and optionally before /m n/<br>voiceless consonants (/p t s k/)<br>other consonants (/b d g l m n w/) or vowel |
|-----|------|------|---|
| *əŋ | *nəŋ | *səŋ |   |
| *ək | *nək | *sək |   |
| *əg | *nəg | *səg |   |

**TABLE 8. ALLOMORPHS OF PRE-SOUTHERN SUBANEN CASE MARKERS**

|               | PSUB       | SSUB       |                   |                   |   |
|---------------|------------|------------|-------------------|-------------------|---|
|               |            | Before /ŋ/ | Before /l/ or /d/ | Before [-voice]   | Before other [+voice]<br>(incl. vowels) |
| NOMINATIVE    | *sug       | *suŋ       | *sud <sup>†</sup> | *suC <sup>‡</sup> | *sug                                    |
|               | *ig        | *iŋ        | *id               | *iC               | *ig                                     |
|               | *əg        | *ŋ         | *d                | *C                | *g                                      |
| GENITIVE      | *nug       | *nuŋ       | *nud              | *nuC              | *nug                                    |
| OBLIQUE       | *dig       | *diŋ       | *did              | *diC              | *dig                                    |
|               | *tug       | *tuŋ       | *tud              | *tuC              | *tug                                    |
| PERSONAL (SG) | *si        | *si        | *si               | *si               | *si                                     |
|               | *ni        | *ni        | *ni               | *ni               | *ni                                     |
|               | *OBL + *ni | *OBL + *ni | *OBL + *ni        | *OBL + *ni        | *OBL + *ni                              |
|               |            |            |                   |                   |   |

† Resulting in a geminate /d/.

‡ C assimilating to the place and manner of articulation of the initial consonant of the following noun.

*su*, *i*, *di*, *nu*, or *tu*, but the initial consonant of the noun base changes from /p t s/ to /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup>/, respectively. Likewise, if the Proto-Subanen form had an initial \*k-, then the Southern Subanen noun will have an initial /k<sup>h</sup>/. Notably, the presence of an aspirated consonant is the only Southern Subanen realization of the Proto-Subanen case marker \*əg when preceding a noun with an initial unvoiced consonant, since the \*ə is lost in the same way that any PGCPH/PSUB prepenultimate word-initial schwa is lost. This is illustrated in examples (35)–(38), where the (a) forms are nouns forming minimal pairs with the (b) forms that are verbs.

- (35) a. sheled‘interior (n.)’ < PSUB \*əg=sələd  
 b. Seler’a! [sə.lə.ra]‘Enter! (v.)’ < PSUB \*sələd=a
- (36) a. phanaw‘walk (n.)’ < PSUB \*əg=panaw  
 b. Panaw’a! [pa.na.wa]‘Walk! (v.)’ < PSUB \*panaw=a
- (37) a. shembag‘answer (n.)’ < PSUB \*əg=səmbag  
 b. Sembag’a! [səm.ba.ga]‘Answer! (v.)’ < PSUB \*səmbag=a
- (38) a. thintuluan‘student’ < PSUB \*əg=tintulu?-an  
 b. tintuluan (v.)‘teach (LF.NONPST)’ < PSUB \*tintulu?-an

Table 9 illustrates the allomorphs of the case markers on nouns with various initial consonants.

**5. CONCLUSION.** This paper has described the series of events in Southern Subanen that led to the development of aspirated consonants /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup> k<sup>h</sup>/. The historical derivation of these aspirated consonants is quite straightforward, so much so that the fact that they resulted in aspirated consonants seems quite natural and intuitive. It is therefore all the more interesting that Southern Subanen is the only Philippine language to have devel-

**TABLE 9. DERIVATION OF SEQUENCES OF CASE MARKERS AND NOUNS FROM PRE-PROTO-SUBANEN TO SOUTHERN SUBANEN**

| RULE                          | *sug=batà<br>‘child’    | *sug=mata<br>‘eye’     | *sug=langit<br>‘heaven’ | *sug=tubig<br>‘water’    |
|-------------------------------|-------------------------|------------------------|-------------------------|--------------------------|
| <b>PRE-PROTO-SUBANEN</b>      |                         |                        |                         |                          |
| 2) Assimilative Devoicing     | —                       | —                      | —                       | *suk=tubig               |
| <b>PRE-SOUTHERN SUBANEN</b>   |                         |                        |                         |                          |
| 7) Assimilative Dentalization | —                       | —                      | *sud=langit             | —                        |
| 11) Gemination                | —                       | —                      | —                       | *sut=tubig               |
| 12) Geminate Aspiration       | —                       | —                      | —                       | *su=t <sup>h</sup> tubig |
| <b>SOUTHERN SUBANEN</b>       |                         |                        |                         |                          |
| modern reflex                 | su gbatà                | su gmata               | su dlangit              | su thubig                |
| RULE                          | *sug=pintù<br>‘door’    | *sug=sugù<br>‘order’   | *sug=kəmət<br>‘hand’    | *sug=ulu<br>‘head’       |
| <b>PRE-PROTO-SUBANEN</b>      |                         |                        |                         |                          |
| 2) Assimilative Devoicing     | *suk=pintù              | *suk=sugù              | *suk=kəmət              | —                        |
| <b>PRE-SOUTHERN SUBANEN</b>   |                         |                        |                         |                          |
| 7) Assimilative Dentalization | —                       | —                      | —                       | —                        |
| 11) Gemination                | *sup=pintù              | *sus=sugù              | *suk=kəmət              | —                        |
| 12) Geminate Aspiration       | *su=p <sup>h</sup> intu | *su=s <sup>h</sup> ugù | *su=k <sup>h</sup> əmət | —                        |
| <b>SOUTHERN SUBANEN</b>       |                         |                        |                         |                          |
| modern reflex                 | su phintù               | su shugù               | su khemet               | su gulu                  |

oped a set of aspirated consonants,<sup>27</sup> even though the sequences from which they developed (/kC/ clusters and geminates, or possibly /hC/ and /Ch/ clusters) are found in a variety of other Philippine languages.

Even more striking than their historical derivation is the combination of linguistic environments in which these aspirated consonants developed: not only from word-medial consonant clusters, but also between prefixes and roots, within some complex prefixes, and between case markers and roots. The end result of this is that in some environments, aspiration is the only contrasting feature distinguishing a noun from a verb derived from the same root word, or an Actor Focus verb from an Object Focus abilitative verb. The only unifying factor between these environments is that in Proto-Greater Central Philippines, these combinations resulted in sequences of \*-C<sub>1</sub>C<sub>2</sub>- (where C<sub>1</sub> was a stop or fricative and C<sub>2</sub> was a voiceless consonant), which developed into Proto-Subanen \*-kC-, which then geminated and finally evolved into aspirated consonants in Southern Subanen.

The phonemic nature of these aspirated consonants is supported by at least four synchronic facts:

1. Minimal pairs such as the twenty given in 2.4 demonstrate the contrast between root words with aspirated and unaspirated consonants.
2. Although the functional load of aspiration in root words is relatively low, its role in morphology is more prominent, and can often be the only distinguishing feature between various types of verbs (see section 3).
3. Although the historical derivation of the aspirated consonants is clear, speakers do not seem to be aware of it. For example, speakers do not appear to be able to consciously segment the aspiration at the beginning of nouns/NPs as a form of the case marker, or the aspiration on the initial consonant of root words prefixed with \*mæg-/ \*mig-/ \*pæg-/ \*pig- (see section 3) as part of the prefix.
4. Unlike the so-called aspirated consonants of some languages, the aspirated consonants of Southern Subanen cannot be split up into sequences of -C.h-, nor can they be broken up by a schwa or other vowel. Furthermore, the digraphs *ph*, *th*, *sh*, and *kh* are not segmented by speakers as /p/ + /h/, /t/ + /h/, /s/ + /h/, or /k/ + /h/, but instead always represent the aspirated /p<sup>h</sup> t<sup>h</sup> s<sup>h</sup> k<sup>h</sup>/.

The analysis of the historical development of aspiration in Southern Subanen is significant because it sheds light on one way in which clusters of phonemes can metamorphose into new phonemes. In the case of Southern Subanen, consonant sequences commonplace in Greater Central Philippine languages developed into aspirated consonants, after a unique series of phonological innovations and assimilatory shifts, in reaction to phonotactic constraints on consonant clusters. Yet while unique in the Philippines in terms of specifics, Southern Subanen is only one of the many languages in an area including western and southern Mindanao and northern and western Borneo in which noteworthy innovations affected consonant clusters, a list that includes (1) the shift towards prevelarized same-voice clusters in Proto-Subanen; (2) the development of homorganic voiced-voiceless clusters in Proto-Danao (and, presumably through contact, in Western Bukidnon Manobo and Ilianen Manobo); (3) the development in Maranao of

27. It is possible that the “heavy” consonants of Maranao (cf. Lobel and Riwarung 2009), which trigger the raising and tensing of the following vowel, may also be describable as aspirated consonants (cf. Lobel 2010a), but phonetic analysis of these consonants has yet to be completed.

“heavy” voiceless consonants that trigger the tensing and raising of the following vowel (Lobel and Riwarung 2009); (4) the development of voiced aspirated consonants in Kelabit (Blust 2006), as well as various shifts in Ida’an and other languages in northern Borneo (Blust 2010, and other works cited therein).<sup>28</sup> This area is striking for its concentration of languages that, although not forming an immediate subgroup, share the tendency to innovate bizarre reflexes of consonant clusters, something that suggests that contact was a major factor in their development. This becomes less surprising when we consider that this particular area was the site of a trading port at least as early as AD 1000 (Scott 1984, Hontiveros 2000) with ties to China, Borneo, Malaka, and other parts of mainland southeast Asia. Trade in this area surely increased dramatically with the fourteenth-century rise of Islamic sultanates in Brunei, Sulu, and the Cotabato area of Mindanao, by which time the network included Maluku and northern Sulawesi. The continued analysis and comparison of languages in this area may complement the study of history and allow us to further unravel the prehistoric network of contact that their speakers once had with one another.

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28. Key differences in the historical developments indicate that each language developed independently of the other, although this is beyond the scope of the current paper.

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