The Reconstruction and Status of Austronesian Glottal Stop - Chimera or Chameleon

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ABSTRACT

More than fifteen years have lapsed since I began drafting a still un-finished monograph on the Austronesian Laryngeals.[1] ZORC 1982 presented a summary of its main points, but due to limitations of space and time, much went unsaid. As a result, the principles and data sets underlying my hypothesis were not sufficiently clear and thus only poorly understood. I would like to take this opportunity to review the evidence for the synchronic and diachronic appearance of PAN *ʔ by highlighting the original research of DYEN (1953) and commenting on the more recent work of ADELAAR (1985), WOLFF (1988), and BLUST (1980, 1983/84, 1986, 1988, 1989, and in progress). I propose that, while we must be chary of the appearance of a final glottal stop (since it can mark phonotactic closure in some languages[2] and loan status in others), PAN *ʔ can be reconstructed when the appearance of a Central Philippine glottal stop is cognate with material not otherwise indicating a PAN, PMP, PHN *q or PML *k. Additionally it was a phoneme that had a special function as a grammatical marker and was thus preserved (or reanalyzed) in a number of daughter languages.

1 DYEN (1953) AND THE CENTRAL PHILIPPINE EVIDENCE

Due to the abbreviated nature of that paper, my treatment of DYEN (1953) was perforce cursory. I am therefore pleased to have this opportunity to dedicate a more extended treatment to DYEN, who so carefully isolated all the regular and irregular correspondence sets pertaining to the appearance of glottal stop in the central Philippines, Indonesia/Malaysia, and Tongan, and of [h] in Indonesian and Malaysian languages.

The occurrence of a final glottal stop in Tagalog (and other central Philippine languages) as opposed to a final zero in Malay and Javanese was troubling (§97). Conversely, there were glottal discrepancies in Malay and Javanese cognates, most with glottal stop in the Tagalic languages (§108). DYEN assigned all of these to reconstructions with a final vowel (i.e., zero). After a discussion of intrusive glottal stop (-ʔ-) (§78-93) and -n- (§94) before suffixation, the forty etyma in §97 were attributed to analogical wrong division, and the six in §108 to an unexplained secondary origin. It can be demonstrated that these final glottals are attributable to three factors: loan marking (1.1), grammatical marking (1.2), or retention of PAN or lower-order *ʔ (1.3).

1.1 Central Philippine Loan Marking

As Dyen observed (§98-101), several loan words have a final glottal "which cannot be attributed to the phonetics of the lending language," and which he felt strengthened the hypothesis that some Tagalog (and other central and even southern Philippine) words acquired a final -ʔ analogically. The provenance of these loans was Indic, Malay, and Spanish, although as Wolff (1976) demonstrated, all Indic words were via Malay. Furthermore, the input of Malay was far more pervasive than Dyen would then have been prepared to accept.[3] What is important is that not all such loans are so marked, i.e., there are dozens of Malay and hundreds of vowel-final Spanish borrowings that do not acquire a final glottal.[4] Furthermore, each language has accommodated loans in its own way, so that the following lists (drawn from Dyen (1953), Wolff (1976) or my own research) illustrate a case of pepper potting:

Spanish

001a   Tag *bangkóʔ*, Akl, *Bik bángkoʔ*, Ceb *bángkuʔ*, WBM, Tbl *bangkuʔ* 'bench' < Sp *banco* [Contrast: 001b Tag, *Bik bángko*, Akl *bángkoh*, Ceb *bángku* 'bank' < Sp *banco*]

002   Tag *bandíláʔ*, WBM *bendilaʔ*, (Akl, *Bik bandéra*, Ceb *bandíra*) 'flag, banner' < Sp *bandera* (Lar§101)

003   Tbl *basuʔ*, (Tag *báso*, Akl *básoh*, Ceb, *Han básu*, WBM *basu*) '(drinking) glass' < Sp *vaso*

004   Tag, *Bik batyáʔ*, Akl, Ceb, *Hil batíyaʔ*, S-L *bátyaʔ* 'wooden basin ~ wash-tub' < Mex-Sp *batea*

005   Tag, Akl, Bik, Ceb *bintánaʔ* 'window' < Sp *ventana* (Lar§101)

006   Tag *gansáʔ*, Ceb *gángsaʔ*, (Akl *gánsa*, Bik *gansó*) 'goose' < Sp *ganso, -a* (Lar§101)

007   Tag *kampánaʔ*, (Akl, Bik, Ceb, Han *kampána*) '(church) bell' < Sp *campana*

008   Tag, Akl, Ceb *kandíláʔ*, (Bik *kandíla*) 'candle' < Sp *candela*

009   Tag, Akl *kastíláʔ*, Bik *kastílyaʔ*, Ceb *katsíláʔ*, Mar *kasiláʔ* 'Spaniard, Spanish' < Sp *castilla* 'Castile' (Lar§101)

010   Tag *kusínaʔ*, (Akl *kusínah*, Bik *kosína*, Ceb *kusína*) 'kitchen' < Sp *cocina*

011   Tag, Han, Hil, Kpm, Sbl *maníʔ*, Cas *manéʔ*, Abr, Klg, Msk *maniʔ*, (Bik, Ceb *maní*, Akl *maníh*) 'peanut' < Mex-Sp *maní* 'peanut'

012   Tag, Akl, Ceb *mantíkaʔ*, (Bik *mantéka*) 'butter, lard, shortening' < Sp *manteca* (Lar§101)

013 Tag *páre?*, Akl, Ceb *pári?*, Bik *pádi?*, (Han *pádi*) 'priest' < Sp *padre* 'father' (Lar§101)

014 Tag *pitáka?*, (Akl, Ceb *pitáka*) 'pouch, purse, bag' < Sp *petaca* 'cigar ~ cigarette case, tobacco pouch' (MBT:365 relates Ceb to Skt *piTaka* 'basket, box, bag' but there are no Mal or Jav cognates, so the Sp provenance is more likely)

015 <Akl *tokáyo?*, (Tag, Bik *tokáyo*, Ceb *tukáyu*) 'namesake' < Sp *tocayo*

MALAY[5]

016 Tag *banú?* 'low-lying country' (clearly a loan marked by *e > a) < PIN **bena?* 'lowland' > Iban *bena?*, Mal *bena* 'tidal bore,' Jav *bena* 'overflowed' (Lar§97, VL3:27, not in ADELAAR, NOTHOFER, nor MBT)

017 Tag *dáya?* 'cunning', Akl, Bik, Ceb, Han *dáya?* 'cheat' < PIN **dáya[Ø]* 'trick, deceit' > Iban *daya* (Lar§97, VL3:37, MBT:357, not in ADELAAR nor NOTHOFER)

018 Tag *gúsi?* < PIN? **guci* 'glazed vase ~ water vessel' > Iban, Mal *guci* (Lar§97, VL3:56, MBT:364, not in ADELAAR nor NOTHOFER)

019 Tag, Akl, Ceb, Hil *hári?*, Bik, S-L *hádi?*, WBM *hadi?*, Ilk, Bon *ádi* < PWI **hádi[Ø]* 'king; kingdom' > OJav *haji*, Hov *andri/ana* 'ruler' (Lar§114, VL3:60, MBT:360,fn9, not in ADELAAR nor NOTHOFER)

020 Tag, Han *kawáli?* < PIN? **kuali[Ø]* 'cooking pot, frypan', Mal *kuali*, Jav *kuwali*, Iban *kali* (Lar§97, MBT:364, PML:61 **kuali*, not in VL3 nor NOTHOFER)

021 Tag *kulambó?*, Han *kulambú?*, Tir *kulambu* < PML **kulambu[Ø]* 'mosquito net, bed curtain' [Iban NC] (Lar§97, VL3:83, MBT:365, PML:60, not in NOTHOFER)

022 Tag *lumbá*, Ceb, Hil *lúmba?* < PWI **lumba?* 'race, competition' > Iban *lumba?* ~ *rumba?* (Lar§97, VL3:98, PML:102 **lumbá?*, MBT:365, not in NOTHOFER)

023 Tag *pasó?* < PIN **pasu[Ø]* 'earthenware vessel' > Iban, Mal *pasu* (Lar§97, VL3:115, MBT:364, not in ADELAAR nor NOTHOFER)

024 Tag, Bik *pintó?* 'door', Han *píntu?* 'answer to a riddle' < PIN **pintu[Ø]* > Mal, Iban *pintu* (Lar§114, VL3:119, MBT:364, not in ADELAAR nor NOTHOFER)

025 Tag *sulígi?* < PIN **suligi?* 'bamboo spear' > Iban *seligi* (Lar§97, PAA #114, VL3:157, MBT:363, PMJ:71 **suligi?*, not in ADELAAR)

026 Tag *tandá?* 'seal, stamp', Akl *tánda?* 'remember', Bik *tandá?*, Ceb, Hil, S-L *tánda?*, Tir *tanda?*, Han *tandá?* 'sign, mark' < PWI **tanda[Ø]* 'sign, mark, token; seal, stamp' > Iban *tanda* (Lar§97, VL3:126, MBT:361, PML:87 **tanda*, PMJ:156 **tanDa?*)

027   Tag *tungkó?* < PWI **tungku?* 'trivet ~ tripod' > Iban *tungku?*, Jav,
       Mal *tungku* 'hearthstones' (Lar§97, PML:57 **tungku?*, VL3:141f,
       MBT:364, not in NOTHOFER)[6]

SANSKRIT OR OTHER INDIC INFLUENCE

028a   Tag *astá?* 'characteristic action; posture' < Mal ~ Jav *asta* 'have,
       hold, do (honorific)' < Skt *hasta-* 'hand; holding in hand'
       (MBT:353+359) [Contrast: 028b Tag *astá, hastá* 'measurement
       from elbow to fingertips' < Mal *(h)asta* 'cubit' < Skt *hasta-* 'hand,
       measure (the length of the forearm)' (GONDA 1973:123,157,
       MBT:352,361)

029   Tag, Akl, Ceb, Hil, Kpm *balíta?*, Bik, S-L *baríta?*, (Han *baríta*)
       'news', Tsg *mag-baita?* 'tell' < Mal *berita* < Skt *vRtta* 'event'
       (GONDA 1973:22,100,142, PAA#31, MBT:366)

030   Tag, Bik, Kpm *banggá?* 'attack; collision', Akl, Ceb, Hil, S-L, Mar
       bángga? 'collision', WBM *bangga?* 'compete' < Skt *bhanga*
       'breaking, overthrow' (GONDA 1973:117, PAA#13, MBT:364)

031   Tag *dukhá?* 'poor, indigent' cf: Mal *duka* 'grief', OJav *duHkha*
       'sorrow' < Skt *duhkha-* 'unfortunate' (Lar§99, MBT:357, GONDA
       1973:114,202)

032   Tag *kúta?*, Ntg, WBM *kuta?* 'fort', (Han *kúta* 'cement work') <
       Mal *kota* < Skt *koTa-* 'fortress' (Lar§99, VL3:85, MBT:364,
       GONDA 1973:91,99)

033   Tag, Ceb, Hil *lagári?*, Akl *eagári?*, Bik, S-L *lagádi?*, Han *ragári* <
       Mal *gergaji* < Skt *krakaca* 'saw' [cf: Iban *ger(eg)aji]* (Lar§97,
       GONDA 1973:93,110, MBT:364, not in VL3)

034   Tag *mukhá?* 'face', Ibg *muká?* 'forehead' cf: Mal *muka* < Skt
       mukha- (Lar§99, GONDA 1973:117, MBT:fn11)

035   Tag *mutyá?*, Ceb *mutiyá?*, WBM *muntiya?*, (Btk *mutiya* 'amulet')
       < Mal *mutia* < Skt *mutya* 'pearl', *mutyaha:ra-* (GONDA 1973:493,
       MBT:363)

1.2 WESTERN AUSTRONESIAN GRAMMATICAL MARKING

BLUST (1979) established Proto Western Malayo-Polynesian vocative
marking as involving accent shift or a final glottal stop (his **-q*)[7] as part of
a series of two other final consonants *(-ng, -y)*. This is apparent in reflexes
of the following kin terms:

036   PHF *amǎ? 'father' [address] > Bik, Sbl amǎ?, Han, Cas áma?,
      WBM ama? (address), Msk, Mong ama?, Sub gama?, Saaroa
      ama?a (reference), Puy ama? (address) [Iban NC] (Lar§78,82,
      86,97, Voc:223f, not in ADELAAR nor NOTHOFER)

037   PHN? *bapa? 'father' > Ilk bápa 'parent, uncle, aunt', Bot bapa?,
      Rej bapo?, Mkb bapa(?), Mal bapa(k) 'father', Iban bapa?
      'father-in-law', (apay 'father') (PML:84 *(b)apa(?), VL3:24,
      Voc:225, not in NOTHOFER)

038   PHF *ina? 'mother' [address] > Tir ina? 'aunt', Msk, Sasak, Uma
      ina? 'mother', Rukai-Budai ináa [Iban NC] (PML:140 *inaØ,
      Voc:220,223; PMJ:98 *?iña? 'foster-mother, nurse')

039   PAN *k-aka? 'elder sibling' > Tag, Bik, Sbl kaká?, Iban aka?, Mkb
      kako, kaka?, Mal kakak, Pai, Amis kaka? (Lar§108, VL3:72,
      PML:82 *kaka?, Ferrell 1969:181, Voc:226f, BLUST 1994:50f, not
      in NOTHOFER)

040   PAN *mama? 'father' [children's vocative form] > Tag máma? 'sir',
      Hil máma? 'old man', Mal mama?, NgD mama 'maternal uncle',
      Motu mama (address), Amis mama(?) [Iban NC] (Lar§108,
      PML:84 *mama(?), Voc:218ff, not in NOTHOFER)

041   PAN *(u-)Saji[?]⁸ 'younger sibling' > Rom, Odg háli, Han ári?,
      Tadyawan tay/ali/an, Bon, Png agí, Iban, Lmp, Mad adi?, Mal
      adik, Rukai ?agi?, Sedeq suai, Thao SaSuwa:di? (VL3:12,
      PML:141 *adi?, Voc:231, BLUST 1994:51f; not in NOTHOFER)

Also see: PAN *aki? 'grandfather' #070 and PHN *níni? [address to
older female kin] #079 below.

    In a postscript to my 3ICAL paper, I mentioned that "some of these
[laryngeal discrepancies] may be resolved on the basis of grammatical
derivations" (ZORC 1982:133). I called attention to the following:

042   PAN *batú[ØH]⁹ 'stone' > Akl batúh 'stone', batuh-ún 'throw
      stones at', but ka-ba-bátw-an 'rocky area', Iban, Mal batu, Tkd
      batuh (PML:70,158 *batuØ, PMJ:128 *Batu?, VL3:24,
      TSUCHIDA, 1976:134)

043   PAN *kúCu[ØH] 'head louse' > Akl kútuh 'louse', kutuh-un 'full of
      lice', but hingútw-i 'delouse', Ceb kútu, Iban, Mal kutu, Tkd kutuh
      (PML:71,77 *kutuØ, PMJ:118 *kutu?, VL3:84, TSUCHIDA 1976:134)

It is not uncommon for noun-verb pairs to show laryngeal final (as well
as accent) discrepancies, particularly Iban -Ø vs -? and central Philippine
-Ø vs -h. These prompted ADELAAR to reconstruct an ambiguous *-(?) or
unambigous *-? in the following three etymologies:

044   PAN *ásu[Ø] 'dog' > Iban asuʔ 'dog', but ng-asu 'hunt' (PML:158, 234 *asuʔ, VL3:17, not in NOTHOFER)

045   PAN *DuSá[Ø] 'two' > Iban dua 'two', but be-duaʔ 'share, divide' and se-duay 'you two' (PML:136,161 *dua(ʔ), PMJ:148 *Duaʔ, VL3:44, TSUCHIDA 1976:153)

046   PAN *súsu[Ø] 'breast' > Akl súsu 'breast', pa-susw-a 'breastfeed', Iban tusu 'breast', but tusuʔ 'suck', TB, Mal susu (PML:84 *susu(ʔ), VL3:158, TSUCHIDA 1976:129, not in NOTHOFER)

A few of these laryngeal-final forms probably arose to preserve the character of consecutive vowels, i.e., to separate the final vowel of the root from suffixes like *-an, *-i, or *-en. The first (Iban asuʔ) is problematic in that the noun (presumably the root form) has the glottal, but once the analogy for differentiating noun-verb pairs was in place (as in 045 and 046, where the roots do end in zero), it could have been applied in reverse.

Some scholars may consider the following two etymologies related. Although I am not particularly drawn to such a conclusion, the second could be considered a verbal counterpart of the pronoun (with both accent shift and glottal marking):

047   PAN *akú[Ø] 'I' > Bik, Hil, Tag akó, Akl, Ceb akú, Chm gwahu, TB ahu, Iban, Mal aku (Lar§133 *aku(h), PML:85 *akuØ, VL3:13f)

048   PHN *ákuʔ 'confess, own up to, admit, acknowledge' > Tag ákoʔ 'guarantee', Akl, Bik, Han ákuʔ 'admit, own up to', Iban, Lmp akuʔ 'treat as', Mal aku-an 'acknowledgement', OJav ang-aku 'recognize, acknowledge' (PML:74,82 *akuʔ, PMJ:178 *ʔakuʔ)

My conclusion is that, as such evidence continues to mount across genetic boundaries, doublets should be reconstructed. Because these reflect remnants of grammatical marking, they represent morphophonemic reconstructions with the characteristics of sporadic (or irregular) sound change, i.e., not *q > [ʔ], but *ʔ > [ʔ]. The above examples attest to the appearance of a genuine laryngeal articulation in the grammar of the proto-language.

1.3 RETENTION OF PAN, PMP, PHN OR LOWER ORDER GLOTTAL STOP

Moreover, several of DYEN's reconstructions, based on the data he presented as well as additional material from Iban and other languages that has since come to light, suggest that a final glottal stop is justified at the lexical level as well. The following etymologies are presented alphabetically within groups representing the highest order proto

language to which each can be assigned. While some of the latter (PHN) may well be questioned, the initial ones (especially 49-54) represent some of the best evidence for the reconstruction of this final laryngeal.

049 PAN *támaʔ 'enter; hit the mark' > Tag támaʔ 'hit mark', Iban tamaʔ, OJav tama, Mlg tamy, Erai, Tetung tama 'enter', Amis tamaʔ 'meat gotten in a hunt' (Lar§97, AE3#347n, VL3:130, ADELAAR 1985:74, not in NOTHOFER)[10]

050 PHF *kêNaʔ 'hit (mark ~ target)' > Iban kenaʔ, Mal kena, Kan sumá-kena, Tsou meʔho, eha 'hit mark' (Lar§97, VL3:78, PML:88 *kenaʔ, TSUCHIDA 1976:140, not in NOTHOFER)[11]

051 PMP *bukáʔ 'open-up, uncover' > Akl, Hil bukáʔ, bukʔ-un, Tsg, Mong bukaʔ, Kal buka-, Sbl bukáʔ 'open', Mar bokaʔ 'untie', Han bukʔ-án 'mid chest', Iban, Lmp bukaʔ, Mal buka(k) (Lar§108, PML:83f *bukaʔ, PMJ:193 *Bukkaʔ)

052 PMP *dátuʔ 'chief, ruler' > Bik, Ceb, Hil, S-L dátuʔ 'chief', Tir datuʔ 'Moslem nobleman; male leader among superhuman beings', Iban datuʔ (Lar§108, PML:82 *datuʔ, PMJ:148 *Datuʔ, VL3:39, MBT:360)[12]

053 PMP *mudaʔ 'young, inexperienced' > Iban mudaʔ 'unripe', Mal muda, NgD muda 'young' (Lar§114, PML:82 *mudáʔ, VL3:159 sub *uda, not in NOTHOFER)[13]

054 PMP *pákuʔ 'nail, stake' > (Tag, Bik pákoʔ),[14] Iban pakuʔ, Mal, Jav paku, Fiji i/vako (Lar§87,90,97, PML:82 *pakuʔ, VL3:112, MBT:364, not in NOTHOFER)

055 PMP?, PHN *pukiʔ 'vagina, vulva' > Ceb púkiʔ, Hil, Odg, Rom pukíʔ, Tbl kiʔ, Samal pukeʔ, (Tag, Bik púki 'vagina', Han pukí 'buttocks'[15]), Iban pukiʔ (Lar§97, VL3:121, PML:82 *pukiʔ, PMJ:119 *pukiʔ)

056 PMP *sudu[ʔ] 'spoon, ladle' > Ilk sódo, Iban suduʔ, Jav suru, Mal sudu 'spoon (usually made of a coconut shell)' vs sodok 'shovel; scoop' (Lar§97, AE4#574, MBT:364, PMJ:150 *suDuʔ; not in ADELAAR)[16]

057 PHN *nangkaʔ 'jackfruit tree' > Bik nangkáʔ, Ceb nángkaʔ, TB nakka, Iban nangkaʔ (Lar§97, PML:82 *nangkaʔ, PMJ:96 *nangkaʔ, VL3:107, MBT:fn10)[17]

058 PHN *sípaʔ 'kick' > Tag, Akl, Bik, Ceb, Hil sípaʔ, Abr, Btk, Klg, Mar, Msk, Ntg, Sub, WBM sipaʔ, Bilaan(Kor) sifoʔ, Tbl s<m>ifaʔ 'kick', Iban sipaʔ-2 'totter, walk with uncertain steps' [There is evidence for a separate (doublet) PWI *sípak 'kick' > Iban sipak, ñipak, Mlg tsipaka] (Lar§108, VL3:154, MBT:365,[18] not in ADELAAR nor NOTHOFER).

059 PHN?, PMJ, PML *surambi? 'eaves, verandah' > Tag, Ceb sulámbi?, Bik, S-L surámbi?, Iban serambi? 'shed at the back of the house', TB, Mkb surambi 'front verandah' (Lar§97, PML:60, VL3:157, PMJ:72, MBT:364f)[19]

060 PHN *tábu? 'bail - scoop water' > Tag tábo?, Akl, Bik, S-L, Kpm tábu?, Msk tabu?, Ilk tábo, Jav tawu [Iban NC] (Lar§97, VL3:125, not in ADELAAR, NOTHOFER, nor MBT)

061 PHN? *timba[?] 'bucket' > Tag, Bik timbá?, Ceb, Hil, S-L tímba?, Iban, Sundanese timba? (Lar§97, VL3:136, PMJ:136 *timBa?, MBT:365, not in ADELAAR)[20]

062 PHN? *utu[?] 'dumb (mute - foolish), inept' > Tag utú-utó? 'simpleton, fool', Akl óto?-?óto? 'play for a fool, take advantage of', TB oto, Mal m-utu 'dumb, mute', Jav utu 'novice' [Iban NC] (Lar§97, VL3:163, not in ADELAAR, NOTHOFER, nor MBT)

Two etymologies presented by DYEN probably have to do with the reconstruction of the other laryngeal, PHN *-h, which has fallen together with the reflexes of *-? in the Indonesian and Malay evidence (to be discussed in section 2 below):

063 PMP *ba+bá[h] 'bear, carry on one's back' > Akl abáh, ábh-un, Ceb bábah-, babáh-, bála, bálh-un, S-L babá 'carry', PML:127 *ba(?), PMJ:124f *Bawa? (Lar§108, VL3:18; ADELAAR 1985:127 suggests that this is essentially a monosyllabic root; a hypothesis which is reinforced by the Akl [a-báh] and Ceb [b<al>ah] evidence)

064a PHN? *kurapu[h] 'slime, seaweed' > Tag kulapó 'film on liquid', Bik kulápu 'sea-slime', S-L kulápu 'seaweed', Kpm kulapú 'mold', Iban kerapu? 'grass found on marshy land' (Lar§97,[21] VL3:83) [Although the cognate sets are presented together by DEMPWOLFF and DYEN, this etymon differs from: 064b PMP *ku[rR]apu[q] 'perch - other fish sp.' > (Tag kulapó, Mong kurapu, Itb kurapu), Ilk kurapó, Mal kerapoh, (Jav kerapu), Sam (?)ulapo, Tonga kulapoo (Lar§97, VL3:83, PA1#48), not in NOTHOFER, ADELAAR, nor MBT]

2 ADELAAR (1985) AND THE IBAN EVIDENCE

ADELAAR (1985:73-77 and footnotes 26-27) took up an insightful critique of my study, looking in great detail at and beyond the etymologies in ZORC (1982). His study has been exceptionally valuable in my reevaluation of the Iban evidence. Firstly, my enthusiasm over the

appearance of a final glottal stop has been tempered, so I now consider such far from conclusive. For any PAN reconstruction, Iban provides *witness evidence* (even if it may present criterion evidence at the PHN level, see ZORC 1994). Secondly, as ADELAAR's statistics bear out, Iban fares far better in the reconstruction of *-ʔ than it does *-h (from PAN *-S or *-H). An explanation for this was hinted at (in ZORC 1982:121), but will be developed in more detail in 2.3 below. Thirdly, I would cease to cite Iban evidence where a final diphthong [-y] or nasal [-n, -ng] appears to have replaced a laryngeal, since as ADELAAR points out "there is no way of telling whether earlier (undiphthongized) forms of these lexemes had -ʔ or not" (1982:75). It is, however, worth noting in this regard that these could have developed analogically from vocative marking (with -ʔ, -y or -ng discussed in 1.2 above) to a broader range of lexemes.

2.1 IBAN -ʔ IS NOT A LOAN MARKER

ADELAAR (1985:76) states that "loanwords as a rule do not end with -ʔ." He lists only four such loans, to which a fifth may be added. This is clearly not like the central and southern Philippine situation discussed in 1.1 above.

065   Iban *cabiʔ* < Skt *chavya* 'chilli pepper,' *Capsicum annuum* > Ind, Jav *cabé*, Mal *cabai* (WILKINSON 1959:173, not in GONDA)

066   Iban *cukaʔ* < Prakrit *cukka* 'sorrel,' Skt *cukra-* 'vinegar, sorrel' > Tag *súkaʔ*, Mal *cuka*, Jav *cokà* (GONDA 1973:113,132, VL3:88, MBT:363)

067   Iban *kepalaʔ* 'chief, principal' < Skt *kapa:la-* 'skull' > Mal *kepala* (GONDA 1973:91)

068   Iban *kijuʔ* 'cheese' < Portuguese (Cf: Tag, Akl *késo* < Sp *queso*)

069   Iban *kayuʔ* 'rolls (of cloth), bars (of soap)' < Chinese? (Cf: Tag *káyo* 'textile, cloth, fabric', Bik *káyo* 'Chinese white blanket', Hil *káyo* 'Chinese white cloth', Jav *kayoh* 'piece of material'; Lar§113 *kayuq*, VL3:72, not in ADELAAR)

2.2 FINAL IBAN GLOTTAL < PAN, PMP, PHN *-ʔ

The appearance of a final glottal stop in Iban is significant only in contrast with a final zero. If it were secondary, then we would expect it to be a filler or phonotactic phenomenon. However, Iban zero does correspond with vowel-final forms reconstructed for PAN or lower order proto

languages (see Iban *aku* 'I' < PAN **akú[Ø]* (#047), Iban *batu* 'stone' < PAN **batú[Ø]* (#042), Iban *kutu* 'louse' < PAN **kuCu[Ø]* (#043) above, as well as Iban *apa* 'what?' < PML:50, PMP **apa[Ø]*, Iban *beli* 'buy' < PAN **belí[Ø]*, Iban *kami* < PAN **kamí[Ø]*, Iban *laki* 'husband' < PHN **láki[Ø]* 'man, male, husband', Iban *mata* 'eye' < PAN **maCá[Ø]*, and dozens of similar reconstructions in ADELAAR's index (1985:258-262)). Thus, in the following citations, a final glottal stop in Iban appears to be etymologically justified.

070   PAN **aki[ʔ]* 'grandfather' > Iban *akiʔ*, Mal aki 'grandfather', Jav *aki-2* 'old man', Tsou *akiʔi* 'grandfather' (PML:140 **akiʔ*, PAA#4, Voc:227f)

071   PMP **qaRúhuʔ* 'pine tree', *Casuarina equisetifolia* > Tag *agúhoʔ*, Akl, Ceb *agúhuʔ*, (Bik *agúho*, Han), Ilk *agúʔu*, Ilk *aroʔó*, Iban *ruʔ*, Mal *(ha)ru, eru* (PML:82 **eruʔ*, VL3:13, PA1#5)

072   PHF **b<al>angaʔ* 'earthenware jar' > (Tag, Kpm *balangáʔ* = Mal), Iban *belangaʔ*, Mal *belanga*, TB, NgD *balanga*, Pai *valanga*, Siraya *vangara* 'mortar' (PML:63,82 **bAlangaʔ*, VL3:23, Lar§104, MBT:364)

073   PHN **endaʔ* 'no, not' > Sin *ndaʔ* (past), Binukid, K-C, Tir *endaʔ*, Iban *endaʔ*, Jkt *ndáʔ* (PML:83f **dáʔ*; cf: Mal *ti/dak*, Mkb *in/dáʔ*, BjrH *ka/da*)

074   PHF **qílaʔ* 'see; keep eye on' > Akl *ílaʔ* 'like', Tag *ka-iláʔ* 'keep unknown', Kankanay *ila* 'see', Iban *ilaʔ* 'watch, keep an eye on', Saisiyat *myaʔilaʔ* 'like, be fond of' (PML:82 **hilaʔ*)

075a   PMP **i-náʔ* 'that (distant)' > Akl, Hil *ináʔ*, Cas *iná*, Iban *ñaʔ* (ADELAAR 1985:161 data, AE2#108)

075b   PHN **náʔ* 'that ~ there yonder' > Akl *ra-náʔ* 'there', Ceb *ka-náʔ* 'that', Iban *ñaʔ*, Mal *di-sa-na* (PML:148f,161 **(a)na(ʔ)*)

076   PAN? **isi[ʔ]* 'meat, flesh; contents' > Kal, NgD *isi* 'flesh', Iban *isiʔ*, TB, Jav, Mal, Mkb *isi*, Puy *isi* (PML:82 **isiʔ*, ACDi163, VL3:70, Lar§97)

077   PHF **lamaʔ* 'old, former' > Iban *lamaʔ* 'old, former, ancient', Mal *lama* 'length (of time)', Atayal *lamaʔ* 'do first ~ before' < (PML:101 **lamaʔ*, AE2#173)

078   PHF **Nasiʔ* 'rice' > Kpm *násiʔ*, Iban *asiʔ*, Mal, Mkb *nasi*, Mad *nasiʔ* 'cooked rice', Pazeh *muLasiʔ* 'paddy plant' (PML:82,89 **nasiʔ*)

079   PHN **níniʔ* [address to older female kin] > Tag *néneʔ* (< Mal), Akl *níniʔ* [address to older girl], Iban *iniʔ* 'grandmother; grand-aunt' [term of address for older women], Jkt *niniʔ*, Mkb *ñiñiek*, *ninieʔ* 'grandmother' (PML:74,88 **niniʔ*, VL3:108)

*ti+ku? 'bend, curve') and synchronic doublets from Maranao (*boka* 'breakfast', *boka?* 'untie') and Hiligaynon (*bukáh, buká?* 'open').

I concluded: "To the extent that this kind of genetic comparison is valid and reliable, some roots need to be reconstructed with a series of laryngeals (i.e., as doublets). Zorc's problem is, of course, exacerbated by the lack of test evidence when criterion or witness evidence alone is available in the establishment of disjunctive roots like *piq* vs. *pi?* vs. *pih* vs. *piØ*" (1990:186).

4.1 DOUBLETS INDICATIVE OF ZORC'S PROBLEM

Moving away from the quagmire of monosyllabic roots but not from Zorc's problem, there are some etyma where the final consonant cannot be ineluctably established, so doublets, disjuncts, or alternative means of marking such ambiguity between a glottal and other phoneme(s) have to be reconstructed:

115 PHF *buCá[H?Ø]* 'blind' > Bik, Ceb *búta-* *[*Ø]*, Mam *buta?*, Tbl *buto?* *[*?]*, Msk *bûta*, WBM *buta* *[*Øh]*, Iban *butá?* *[*?h]*, TB, Mal *buta* *[*Ø?h]*, Pai *ma-vutsa* 'having bad eyesight' *[*H?Ø]* (VL3:36, PMJ:130 *Butá?*, PML:82 *butá?*)

116 PHF *Dáya[Ø?H]* 'inland, upriver' > Iban *daya?* *[*?h]* 'Dayak; up-country', Mal *barat-daya* *[*Ø?h]* 'southwest', Kan *m-a-a-cála* 'blow upwards ~ towards mountain-side', Pai *zaya* 'upland, upriver' *[*H?Ø]*, Tkd *daDá?* *[Ø?]* 'above, up' (PML:134f *dayá?*, VL3:42, TSUCHIDA 1976:240)

117 PHN? *lagi[h?]* 'again, more, still; later on' > Tag *lagi?* *[*?]* 'always', Akl *eagih* 'right away', Ceb *lagih-* 'surely' *[*h]*, Iban *lagi?* *[*?h]* 'later on', Mal *lagi* *[*Ø?h]* 'again; still more' (PML:57 *lagi?*, PAA#233)[31]

118 PHF *pakú[?HØ]* 'edible fern sp., *Athyrium esculentum*' > Bik *paku* *[*Øh]*, Ceb *pakúh-* *[*h]*, Tir *fagew* *[*Ø]*, Tbl *hokú?* *[*?]*, Iban *paku?* *[*?h]*, Mal, Mkb *paku* *[*Ø?h]*, Amis *pahko* (M) [H] (VL3:112, PML:82 *pakú?*, TSUCHIDA pc)

119a PMP *lawá?* 'spider' > Iban *empe/lawá?*, Mal *lawa-2* vs 119b PMP *lawaq* > Kal *lawak*, Mkb *lawah;* Tag *(an)lalawá?*, Akl *eáwá?*, Bik, Ceb *láwá?*, Fiji *lawa-2* (PML:69 *lawá?*, VL3:93, Lar§104)

120a PML *bali?* 'reverse; go back' > Mal, Jkt *kem/bali*, Mkb *kum-bali* 'back' [adv], (Iban *bali?* 'change, vary' pos < *baliw*) (PML:83f, 73) vs 120b PMP *balík* 'return' > Tag, Akl *balik* 'turn around',

080 PMP *palu? 'hit (with stick)' > Bik, Hil pálo?, Ceb, S-L palú?,
Iban palu?, Mal, Mkb palu (PML:82 *palu?, PMJ:101f *palu?,
Lar§97, PA1#87, VL3:113)

081 PHN *te+ku? 'bend, curve'> Mar teko? 'bend, curve', Iban teku?
'bend into hook' (PML:83 *teku?, PAA#123, AE4#647)

082 PHN *ti+ku? 'bend, curve' > Akl tikú? 'crooked', Mar tiko? 'bend,
curve', Kankanay tikó 'curved, bent', Iban tiku? 'bend' (PML:83
*tiku?, PAA#131)

083 PHN *zeRa? 'warned by experience' > Tag dalá? 'scared off', Akl
ma-dla? 'learned one's lesson', Iban jera? (PML:82 *jera?, PAA#442)

See also the citations above: PHN *áku? (048), PHN? *bapa? (037),
PMP *buká? (051), PMP *dátu? (052), PAN *k-aka? (039), PHF *kêNa?
(050), PMP *muda? (053), PHN *nangka? (057), PMP *páku? (054),
PMP? *puki? (055), PAN *(u-)Saji[?] (041), PAN *táma? (049).

Altogether, these twenty-six etyma present some of the best evidence
from Iban for the reconstruction of a PAN, PMP or PHN final glottal
stop. There is little serious counterevidence.

There is only one cognate where Iban fails to reflect *-?:

084a PHN *ada? or PHN 084b *wada? 'there are; that (is); none' > Hil
(may) ára? 'there is', WBM he-?aza? 'yonder' Mal ada 'exist',
(Iban naday 'none'); Tag walá?, Akl (u)wá? 'there is none', Akl
waeá? 'disappear, run out of', Ilk wadá 'be there, have'
(PML:84,227 *ada(?), ACDw2a)

There are, of course, instances where Iban has an unexplained glottal
from an original diphthong, such as:

085 Iban bari? 'musty' < PML:227 *bari? < PHN *baRiw 'tainted,
rotten, spoiled' (PMJ:86 *BaR₂iw, VL3:19)

086 Iban beri? 's.th. given' < PML:85,227 *beri? < PAN *beRey 'give'
(PMJ:126 *BeR₂R₂ey, VL3:26, Lar§110)

087 Iban p-andi? 'bathe' < PML:86,227 *mandi? < PWI *anduy (VL3:12)

I do not feel that these obfuscate any higher level reconstructions since
they are limited to the Malayic subgroup. Furthermore, the appearance of
such a phonological innovation attests to the existence of a glottal stop in
the phonetics of a proto language ancestral to Iban.

One form that I reconstructed (ZORC 1982:127,113) should
probably be withdrawn since the Iban glottal is itself an unexplained
reflex of final *-k (ADELAAR 1985:81) and the item is surely one of trade:

088 PML *badik 'knife, dagger' > Mal, BjrH badik, Mkb, Swy badie?;
(Iban badi?, Ceb barí?, Msk, Mar badi?, Ngadha badi)
(PML:74,81 *badik, PA3#76)

Following upon additional information and data in ADELAAR, I would
also disassociate one Iban form from a cognate set I had reconstructed:

089 PMP *bíRa? 'discharge; semen' > Akl bigá?-un 'sexual excitement',
Ceb bíga? 'great sexual desire', Tsg, Mar bíga? 'semen', PPN *pia-2
'discharge; sap' (PAA#58, PA1#107; Iban bira? 'evacuate bowels'
< PML:58f,74 *ba/hira?[22] 'defecate')

There are several forms in ADELAAR where the reconstruction of glottal
stop would be ambiguous at a level higher than PML, since there is no
external supporting data to determine if final *-h was involved (see 2.3
below). Some of these are:

090a PIN *bantu? 'help; support' > (Iban antu?), Mal, Mkb, Jkt bantu,
Jav mantu (PML:86 *bantu?, VL3:24); contrast 090b PWI
*b<in>antu[Ø] 'son-in-law' > Mkb binantu, minantu, Iban, Mal
menantu (PML:91, VL3:30, neither in NOTHOFER) which may
reflect a grammatical doublet (see #042-046 above)[23]

091 PIN *kiba? 'left, leftwards' > Iban kiba?, Mal kiwa 'left-handed',
Jav kiwO 'left' (PML:154,235 *kiba?, Lar§97, VL3:81 sub *kiwa;
not in NOTHOFER)[24]

092 PIN? *tabi? 'excuse me, by your leave' > (Tag pasintabi?, Akl, Ceb
tábi?), Kel, Iban tabi?, Mal tabék, Jkt, Jav tabé (PML:83f *tabi?,
PAA#88, MBT:353,360, not in NOTHOFER)[25]

093 PML *tadi? 'just now, previously' > Iban tadi?, Jkt tadé, Mal,
Mkb tadi (PML:87)

094 PMP *tangga[?h] 'ladder; step' > Iban tangga?, TB, Mal, NgD
tangga, Mkb tanggo, Jkt tanggé 'ladder', Fiji tangga 'be placed on
s.th. else' (PML:87 *tangga?, VL3:126)

Also see PIN *bena? (016), PWI *lumba? (022), PIN *suligi? (025) and
PWI *tungku? (027) above.

Lastly, there is one form where, if cognate, an Iban glottal is un-
explained:

095 PMP *kutana[Ø] 'ask' > Akl kutána, pang/utan?-un,[26] PSS
*kutana; Iban taña?, Mal taña, Mkb taño (PML:90 *tañá?,
AE2#163, MILLS 1975:742)

2.3 FINAL IBAN -h < PAN *-S, *-H, PMP, PHN *-h

ADELAAR (1985:73-77) correctly points out the problematic nature of these Iban reflexes. Based upon his review of my reconstructions as amended, there is a cline such that PAN *-S > Iban zero more often than having a glottal reflex (in six instances out of nine=33% retained). However, PAN *-H > Iban -ʔ (in eleven out of seventeen=65% retained), whereas PMP *-h > Iban -ʔ (in thirteen out of fourteen=93% retained). It is not appropriate to propose that Iban (or any other Western Austronesian) evidence directly pertains to PAN *S, the reconstruction of which depends solely on the appearance of a sibilant reflex in a Formosan language. However, the greater percentage of loss of final *S in Iban and PML reinforces a point I originally made, namely that "by PMP times the sibilant reflexes of *S were completely lost outside of Formosa. The sound had shifted to PMP *h, and was subsequently lost in Oceanic, and was on the way to being lost among Ml/In languages. ...PAN *S was beginning to shift from a sibilant to a laryngeal early in PAN history, and this shift was preserved in certain basic vocabulary ..." (ZORC 1982:121).

This runs counter to one of BLUST's proposed innovations marking "a Formosan : Malayo-Polynesian dichotomy. ... *S evidently weaken to [h] in final position in all Malayo-Polynesian languages, subsequently disappearing in final position in all languages except Itbayaten (geographically one of the two closest Malayo-Polynesian languages to Taiwan)" (BLUST 1990a:147). Final *-S > *-h was indeed preserved, more so in Proto-Bisayan (ZORC 1977:206) and less so in Proto-Malay (ADELAAR 1985:228f), due to a drift from PAN *S > *H > *Ø. Certain factors such as grammatical or vocative marking facilitated its retention on some morphemes, and once glottal stop merged with *h in pre-PML, it insured that those morphemes that had retained *-h would survive with a glottal reflex.

Since the reconstruction of *h is beyond the scope of this paper, I have appended the etyma relevant to the discussion above in Tables 1-3.

3 JOHN U. WOLFF

WOLFF (1988 and since) excludes any laryngeal from his revised PAN system. Since he has not dealt with them with such thoroughness he has accorded PAN *c, *z, etc. (1982) or *d, *r (1974), I can only assume that his article on Malay loanwords in Tagalog (1976) represents a kind of manifesto that final glottal stop is virtually and exclusively a loan marker, and his reconstruction of PAN *CeRáb 'belch' "reflect[s] contamination from words having similar meanings" (WOLFF 1991:540, especially

footnote 18). Therefore, if one cannot establish PAN *q, the appearance of any glottal stop in the Philippines would be considered secondary.[27]

3.1 INTERVOCALIC GLOTTAL STOP OR VOWEL SPLITTING?

In my original paper (1982:128f), I presented twenty-two reconstructions with an intervocalic glottal stop, ranging from PAN through PSP. In each case, the evidence of test or criterion languages (Pai, Mal, Tbl, Ntg, Palauan, etc.) precluded the reconstruction of *q. There is no need to repeat all the data here, although it would be helpful to illustrate what sequences were covered:

*a?a (PHF *Ca?as 'high/long', PHF *dá?aN 'old thing')
*a?e (PAN *ká?en 'eat', PHF *pa?en 'bait', PPH *tá?eb 'high tide')
*a?i (PHN *Dá?ing 'jerk meat-fish', PHN *la?in 'different', PHN
    *pa?is 'roast in leaves')
*a?u (PPH *ba?ug 'rotten', PPH *bijá?u 'winnowing basket', PPH
    *há?un 'remove from fire', PHN *haru?án 'mudfish', PHN
    *la?un 'long, slow')
*e?e (PHF *He?e 'yes')
*e?u (PHF *tine?un 'weave')
*i?e (PHN *pi?et 'narrow, crowded', PHF *Ri?ek 'thresh', PSP *ti?él
    'leg bone')
*i?i (PHN *be(n)ti?is 'calf of leg', PAN *Rabí?iH 'night')
*u?e (PHN *lú?ek 'bay')
*u?u (PHN *ku?úl 'snail')

What I neglected to illustrate was that a glottal stop was not a feature of vowel splitting in Central and Southern Philippine languages, since a zero can also be reconstructed in intervocalic position (see ZORC 1977:206-208). As can be seen from the following reconstructions, dissimilar clusters such as [a?e] and [awe] < *aØu, or [i?a] and [iya] < *iØa do occur.

096   PAN *ká?en 'eat' > Tag ká?in, Akl, Ceb, Han, Hil, S-L ká?un, Abr, Btk ka?en, WBM ka?an, Tbl ken, Kal pa/ngan, Mal ma/kan, Fiji kan/a, kan/i, Tkd m/a?un, Amis k<em>a?en (VL3:71, Lar§57, TSUCHIDA 1976:174,182)

097   PAN *laHúd 'seaward' > GCP *lawéd 'open sea' > Akl eawúd, Bik, Ceb, Han lawúd 'open sea', WBM lawed 'in the middle of a vast area'

098   PHN *li?ád 'stretch oneself' > Tag li?ad, liyád 'bent backward

with stomach protruding', Akl *li?ád* 'bend backwards', Ceb *li?ád* 'erect in body with breasts out', Iban *nge-liat* 'stretch oneself' (PAA#252)

099   PMP **li[Ø]ang* 'cave, opening, hole' > Tag *liyáng, li?ang*[28] 'small cave', Mar *liang* 'cave', TB, Mal *liang* 'orifice', Jav *lèng* 'small opening', Mota *lia* 'hollow in or under a rock; cave, den' (PMJ:182, PA2#41, VL3:96)

100   PHN **beti?es* 'lower leg, calf, shin' > Akl *bati?is*, Ceb, S-L *biti?ís*, Mong *bosi?ot*, Ntg *bisit*, Iban, Mal *betis* (PML:151 **betis*, VL3:28, Lar§57, PMJ:193 **Bettis, *Bentis*)

101   PCP **di[Ø]et* 'small, little' > Tag *ma-li?ít* 'small', Hil *dyut-ay* 'small (amount)', Ceb *diyút* 'small (in size)'

3.2 GLOTTAL CLUSTERS

Although DEMPWOLFF later rejected his originally proposed clusters with **R* (PAN **beRngi* 'night', PMP **beRsay* 'paddle') sufficient evidence substantiates those reconstructions. It should not therefore be a breach of canonical form that an **R?* cluster occurs in the following:

102   PMP **beR?at* 'heavy' > Akl, Ceb, Hil *búg?at*, Kal *lebat*, Tbl *belat*, TB *borat*, Mal *berat*, OJav *bwat, wrat*, NgD *behat*, Tonga *mafa/mafa*; note Tag *bigát*, WBM *beGat*)

Besides the above, I originally put forward eight additional clusters (1982:130 -- PMP **bu?ni* 'ringworm', PMP **ka?+wit* 'hook', PHF **si?bu* 'urine', PHF **ti?Naw* 'clear water', PHN **ha?ney* 'weave, set up warp', PHN **sab?a* 'plantain banana', PHN **bu?yung* 'pot-bellied', PHN **tu?mid* 'heel'). Admittedly, these would require a revision of our view of PAN word structure. While some might reject this proposal out of hand, the appearance of such clusters in the Philippines is a synchronic and diachronic fact (none of those I propose could be established as involving schwa syncope or PAN, PMP **q*).

Determining the original order of a glottal cluster can be problematic. Bisayan dialects have metathesized all clusters to [C?] whereas Bikol to [?C] (ZORC 1977:242). WBM generally show loss of such clusters.[29] Only Tag and Iriga Bikol appear to indicate the original position of the glottal stop, but in most Tag dialects it is by the placement of accent, i.e., **CV?CV(C)* > Tag CV:CV(C) vs. **CVC?V(C)* > Tag CVCV'(C).

Further to those eight etyma treated in my paper, there are:

103 PHF *CeRʔab 'belch, burp' > Tag tigáb 'gasp', Akl t<al>ig̓ʔab,
Han mag-tíg̓ʔab, Ceb túg̓ʔab, Jav atob, Kan c<um>a-ciráve 'belch'
(Tsuchida 1976:219, Wolff 1991:540)

104 PHN *lingʔet 'sweat, perspiration' > Abr, Btk liʔnget, Tbl inget, Ilk
lingʔét, Kyp liʔnget, Mlg dínitra (AE1#283)

105 PHN *qa-Rimʔaw 'beast of prey (appearing out of nowhere)' >
Ceb gímʔaw 'emerge, show oneself', WBM gímʔew 'of a
supernatural, to appear in a frightening manner', TB arimo
'leopard', Mal, BjrH harimaw 'tiger' (VL3:60, Lar§119, PML:63
*hArimaw)[30]

106 PHN *Raʔ+bun 'cover with earth' > Kankanay gabʔún 'fill up
(with earth, etc.)', Ifugaw labún 'act of burying a (newborn) child
which cannot be put in a death chair', Mal rabun 'pile branches
and leaves on a muddy spot to allow people to cross it dry-shod'
(AE4#503)

107 PMP *sulʔut 'dress' > Bik suʔlót, Png solót 'wear, put on', Mar solot
'dress, put on pants ~ shirt', POC *sulu 'sarong, put on sarong'
(PAA#87)

108 PHF *Suy(e)ʔab 'yawn' > Akl, Ceb, Hil húyʔab, WBM heyʔam,
Kpm úyab, Tbl tel-uyab, Lauje oyab, Atayal(Sq) m-suyap
(AE3#334, ACDS65)

109 PHF *taʔpiL 'patch, mend' > Bik taʔpil, Amis tapid, Kan sia-
tapiniʔ (Dyen-Tsuchida ms)

110 PPH *tamʔis 'sweet' > Tag tamís, Akl, Ceb támʔis, Iriga tamʔis,
Abr, Btk taʔmis, Ilk samʔít, Png samít

3.3 Final Glottal

Numerous forms were presented above exemplifying this cognate set
(036-041, 048-062). Evidence for others (PHF *keDiʔ 'small', PAN
*kitaʔ 'see', PHF *sáraʔ 'filter; sift(er)', PAN *seduʔ 'hiccough', PHF
*tedáʔ 'leftover food') appeared in my paper (1982:127f). While not all
of them are above suspicion of being undetected loans or mavericks (e.g.,
056-062), many should stand as items of basic vocabulary for which no
other final segment would be appropriate. Especially when the recon-
struction of *q is counter-indicated, the reconstruction of *ʔ would
appear to be justified. In the following reconstruction, Saaroa should
have *ngusuʔu to justify the *q proposed by either Tsuchida or Wolff:

111 PAN *ngúsuʔ 'mouth, snout' > Odg ngúsuʔ 'jaw', Bik ngúsuʔ, Yami
ngusuʔ, Fiji ngusu, Saaroa ngusuu 'mouth', Saa ngudru 'lip'

Since only a long final vowel is indicated in the sources, it would appear that the relevant Saaroa reflexes are *q > ?, but *? > zero.

3.4 GLOTTAL STOP IN CONTRAST WITH *q

Because the reconstruction of glottal stop hinges upon data that might otherwise yield PAN *q, it is relevant to cite here some forms that contain both reconstructed phonemes:

112 PMP *qaRa? 'fig tree, *Ficus* sp.' > Mong *aga* [tree of no particular use], Iban *ara?* 'parasite fig', Bal *aha* 'fig', Ngadha *ara* 'fig/banyan', Sika *?ara* 'fig tree' (AE3#16)

113 PMP *qawa?* 'fish sp., pos: milkfish, *Chanos chanos*' > Ceb *áwa?* *Elops hawaiensis*, Ilk *áwa* 'marine fish with thick, elongated body and numerous spines', Tonga *?ava* [fish], Chm *agwa*, Haw *awa* *Chanos chanos* (AE1#27)

114 PPH *qa?jung* 'nose' > Bot *a?rung*, Kpm *árung*, Ilk *agóng* 'nose', Kal *kadung* 'pointed nose'

4   ROBERT BLUST

BLUST (1988:31-33,47) has raised and discussed what he terms "Zorc's Problem" which involves "contradictions with laryngeals... and the disagreements noted are symbolized as *-(q)." In brief, based on correspondence sets found, one must often set up an entire series of doublets such as *ku[Ø], *ku?, *kuh, *kuq 'bend'. While this is not a particularly satisfactory state of affairs, one must take the evidence as it stands. BLUST is apparently not bothered by other series of doublets, such as *Tak, *Tek, *Tik, *Tuk (describing a series of sounds); *ngaC, *ngeC, *ngiC (degrees of anger); *pag 'strike, beat' vs *pak 'slap, clap', *pik 'pat, light slap', *puk 'clap;' or even *kung, *gung 'deep resounding sound' vs *Rung 'roar, rumble.' His hesitation may understandably be based on the hypothetical nature of *? and *h (since all the other doublet phonemes are well established).

I addressed this to some degree in ZORC 1990:185f where I offered two kinds of evidence: diachronic support for *kuH (PAN *si+kuH 'elbow', PMP *bu+kúh 'joint, node', PHN *le+kúh 'lie down on all fours, like an animal') vs. *ku? (PMP *le+ku? 'folding part of the body', PHN

*ti+ku? 'bend, curve') and synchronic doublets from Maranao (*boka* 'breakfast', *boka?* 'untie') and Hiligaynon (*bukáh, buká?* 'open').

I concluded: "To the extent that this kind of genetic comparison is valid and reliable, some roots need to be reconstructed with a series of laryngeals (i.e., as doublets). Zorc's problem is, of course, exacerbated by the lack of test evidence when criterion or witness evidence alone is available in the establishment of disjunctive roots like *piq* vs. *pi?* vs. *pih* vs. *piØ* " (1990:186).

4.1 DOUBLETS INDICATIVE OF ZORC'S PROBLEM

Moving away from the quagmire of monosyllabic roots but not from Zorc's problem, there are some etyma where the final consonant cannot be ineluctably established, so doublets, disjuncts, or alternative means of marking such ambiguity between a glottal and other phoneme(s) have to be reconstructed:

115 PHF *buCá[H?Ø]* 'blind' > Bik, Ceb *búta-* [*Ø], Mam *buta?*, Tbl *buto?* [*?], Msk *bûta*, WBM *buta* [*Øh], Iban *butá?* [*?h], TB, Mal *buta* [*Ø?h], Pai *ma-vutsa* 'having bad eyesight' [*H?Ø] (VL3:36, PMJ:130 *Butá?*, PML:82 *butá?*)

116 PHF *Dáya[Ø?H]* 'inland, upriver' > Iban *daya?* [*?h] 'Dayak; up-country', Mal *barat-daya* [*Ø?h] 'southwest', Kan *m-a-a-cála* 'blow upwards ~ towards mountain-side', Pai *zaya* 'upland, upriver' [*H?Ø], Tkd *daDá?* [Ø?] 'above, up' (PML:134f *dayá?*, VL3:42, TSUCHIDA 1976:240)

117 PHN? *lagi[h?]* 'again, more, still; later on' > Tag *lagi?* [*?] 'always', Akl *eagih* 'right away', Ceb *lagih-* 'surely' [*h], Iban *lagi?* [*?h] 'later on', Mal *lagi* [*Ø?h] 'again; still more' (PML:57 *lagi?*, PAA#233)[31]

118 PHF *pakú[?HØ]* 'edible fern sp., *Athyrium esculentum*' > Bik *paku* [*Øh], Ceb *pakúh-* [*h], Tir *fagew* [*Ø], Tbl *hokú?* [*?], Iban *paku?* [*?h], Mal, Mkb *paku* [*Ø?h], Amis *pahko* (M) [H] (VL3:112, PML:82 *pakú?*, TSUCHIDA pc)

119a PMP *lawa?* 'spider' > Iban *empe/lawá?*, Mal *lawa-2* vs 119b PMP *lawaq* > Kal *lawak*, Mkb *lawah;* Tag *(an)lalawá?*, Akl *eáwá?*, Bik, Ceb *láwá?*, Fiji *lawa-2* (PML:69 *lawá?*, VL3:93, Lar§104)

120a PML *bali?* 'reverse; go back' > Mal, Jkt *kem/bali*, Mkb *kum-bali* 'back' [adv], (Iban *bali?* 'change, vary' pos < *baliw) (PML:83f, 73) vs 120b PMP *balík* 'return' > Tag, Akl *balik* 'turn around',

BjrH, Mal *balik* 'reverse, reciprocate', Mkb *balieʔ* (VL3:22, PMJ:128 *Balik)

121   PMP *tapak*, PML *tapa[kʔ]* 'sole, palm' > Akl *tapak* 'footprint, step; step on', Iban *tapaʔ*, Mal *tapak*, Mal, Jkt *t<el>apak*, Mkb *tapaʔ* (VL3:131, PML:83f)

4.2 REVIEW OF BLUST'S RECONSTRUCTIONS

With regard to the reconstruction of a glottal stop, I fully agree with the following forms in BLUST's four etymological addendae published between 1980 and 1989 in *Oceanic Linguistics*:

PHN *daRayaʔ* 'teem, swarm' (AE1#95) add: Akl *dagáyaʔ* 'many, multitudinous, plenty'

PHN? *DeRuʔ* 'sound of swishing water' (AE1#116) -- if Ceb and Mal are genuinely cognate

PHF *gusiʔ* 'gums' (AE4#224)

PHN *iliʔ* 'flow' (AE1#168)

PMP *kasambiʔ* 'tree sp.,' *Schleichera trijuga* (AE3#132, AE4#259)

PHN *ki+kuʔ* 'crooked, winding' (AE4#290)

PAN *lamaʔ* 'old, former' (AE2#173) [see #077 above]

PMP *le+kuʔ* 'bend, fold; folding part of the body' (AE1#268)

PHN *le+kú[ʔh]* 'curl up on the ground (of an animal)' (AE1#269) add Akl *eukúh*

PHN *pangkaʔ* 'strike against' (AE1#331) [Contrast: Iban *pangkaʔ* and Malay *pangkah* < *pangkaq]

PMP *qaRaʔ* 'fig tree,' *Ficus* sp.' (AE3#16) [see #112 above]

PMP *qawaʔ* 'milkfish, *Chanos chanos*' (AE1#27) [see #113 above]

PHN *sulaʔ* 'play games' (AE4#582)

PHF *Suy(e)ʔab* 'yawn' (AE3#334, ACDS65) [see #108 above]

PHF *tedáʔ* 'leftovers; remainder' (AE3#359, ZORC 1982:128)

PHN *tinggaʔ* 'ear pendant' (AE1#417)

PMP *tuiʔ* 'tree sp.,' *Dolichandrone spathacea* (AE3#398)

PHF *zuluʔ* 'do earlier ~ in advance' (AE3#443)

However, there are instances where I feel that BLUST may have misinterpreted the cognate sets I established. The various correspondences for *ʔ, *h, *q (etc.) are outlined in Table 4. Although the reconstruction of *h is beyond the scope of this paper, I would like to reiterate that if, in a given cognate set, Iban has a final glottal < *h ~ *ʔ and, say, Tag, Ceb, Mar or WBM have a final zero < *h ~ *Ø, then the reconstruction should be with

PHN *-h. He has gotten this correspondence set right in his recon-struction of PHN *asih 'pretend' (AE1#19) due to the morphophonemic evidence of Ceb ʔasi-ʔasih-un 'presume to do' and several other etymolo-gies, but his note to PHN *bidáʔ (1989:129) indicates some misunder-standing.

I am suggesting alternate interpretations of several of his recon-structions that involve a glottal stop. The etymologies presented below are my revisions based, for the most part, on the data he presents.

PHN? *anuʔus 'smoke; charred' (AE2#13)

PMP *banáʔaR 'radiance, as of rising sun' (AE1#37)

PAN *bangʔeR 'stench, rotten smell' (AE2#36)

PMP *bangʔes 'unpleasant smell' (AE2#37) Cf: Akl banʔus 'rot, get spoiled' and GCP *panʔes 'acrid stench'

PHN *baRáʔ 'improper behavior' (AE1#44) -- while an attractive comparison, Ceb bagáʔ ug náwung literally means 'thick of face' < PMP *baRéq 'swell up'; then Iban baráʔ is then ambiguous alongside Subanon baga

PHN? *bataʔ 'young (of vegetation)' (AE4#71)

PHN *bayúʔung 'bag of plaited palm leaves' (AE3#38)

PAN *beCu[Ø?] 'callus, blister' (AE2#44) cf: Akl butú, binutwan 'blistered' [Ø], Iban betúʔ 'a burn' [ʔ] suggesting grammatical doubleting

PHN *bidah 'strike against' (AE4#84) -- a classic case where Iban glottal is contrasted with what appears to be zero in Philippine languages, but Akl is biráh and Ceb is biráh-

PHN? *buli[ʔ] 'anus,buttocks' (AE4#105, but see MBT:359)

PHN *bu(n)tuh 'bloated' (AE1#85), not *bu(n)tuʔ, based on Ceb butuh-

PHN *Diʔ+pit, with a doublet *Dim+pit 'join, fasten together' (AE1#118)

PHN *dúduʔ 'breast' (AE1#108, AE4#154)

PHN? *galugaʔ 'plant sp., Bixa orellana' (AE1#130) -- quite possibly a loan in WBM (and uncited Mar) marked with glottal closure

PHN *gamáʔ 'catch fish ~ shrimp with the hands' (AE3#105) -- is this a legitimate case of doubleting with *gamak or a widespread loan?

PHN *ha(n)+díʔ 'no, not' (AE2#401, ACDh010)

PHN *hen+díʔ 'no, not (future)' (AE2#401, ACDh058)

PMP *i-náʔ 'that, there' (AE2#108) [see #075ab above]

PHN *k<al>aʔ+wit 'hook' (AE2#120) based on PHN *kaʔ+wit

PMP *kaʔ+nga(h) 'fissured, slightly cracked' (AE1#188)

PMP *ka[ʔ]ung 'reverberate, of a sound' (AE1#197)

PHN *-kâwáʔ 'spider' (AE2#134) add: Mandaya tambanu-kawáʔ, Soc boling-kawáʔ, Kly kakkawwáʔ

PMP *ke+mi[qʔ] 'urinate' (AE4#268) -- possibly another illustration of Zorc's problem, but probably one of few instances where Iban glottal should probably be viewed with suspicion

PHN *kuRiʔet 'creak, squeak' (AE1#241)

PMP *láʔ+bak 'wide open' (AE1#247)

PMP *langgaØ 'heat (food) up' (AE4#319) based on the evidence presented; Ceb lágaʔ = láʔgaʔ < PSP *laqgaq (Tag lágaʔ, Akl láʔgaʔ, Kal lakgak)

PHF *Langsiʔ 'odor, stench (of fish ~ blood)' (AE4#328, Dyen-TSUCHIDA ms) Bik langsíʔ, Ilk langsí, Mer ma-lany, Sak ma-langy, Puy langsi (of burnt rice); the provenance of Ceb langsi is not clear, but Ceb langsa is cited as the more common form.

PHN *lawah 'drop by, pay a visit' (AE4#333) Tbl lawa (is mis-cited as lawaʔ)

PHN *leʔ+guk 'gulp, swallow' (AE4#360)

PMP *le(ng)+kaʔ 'open (up)' (AE4#342) is illustrative of Zorc's problem, since the evidence here suggests glottal stop, whereas the doublet PMP *le+kaq (AE4#343) stands on the evidence presented there.

PMP *lepuʔ [fish with poisonous dorsal spines] (AE2#194) Iban is le-lepuʔ; Malay counterindicates any *-q

PHN *lingʔet 'sweat, perspiration' (AE1#283) [see #104 above]

PHN *luquk 'bay' (AE2#219) is correct based on Bjr luhuk; but BjrH luuk, Ceb, Han lúʔuk, Tag loʔók, Ilk lúʔek, Mong lúʔok, Kal leek,32 Mal telluk, Jav lok suggest a doublet *lúʔek (PML:80 *luØ(ue)k)

PHF *lúʔúm 'ripe' (AE3#207) add: Ilk na-lúʔúm, Manabo na-Lʔom, Ifugaw lúʔúm; loss of glottal yielded a monosyllable in Paiwan and Malay

PHN *luyah 'weak, worn-out, second-hand' (AE4#394), based on Iban luyáʔ 'faded, secondhand, shop-soiled', Akl ma-eúyah 'weak, feeble'

PMP *(ka-)nuʔus 'squid, cuttlefish' (AE3#127b)

PHN? *nguy+ʔa 'vex, torment' (AE2#255) if comparison of Ilk ngoyʔa 'agony, death struggle' and Jav nguya(-nguya) 'vex, nag, tease, pester' is valid

PHN *paliʔ 'wound' (AE1#333) Add: Agutaynon paliʔ 'scar'

PMP *pa+ngah ~ pa+ngaq 'forked, pronged' (AE2#263) add: Akl pangáh 'hook for getting fruits'

PHN *pueʔ 'lord, master' (AE2#294) if allied to vocative ending

PMP *puʔ+puʔ 'pick, pluck (fruit)' (AE2#298)

PMP *qa(m)pah 'empty husk (of rice, etc.)' (AE2#17)

PHF *qauʔ 'yes' (AE2#27) add: Akl awʔ 'oh yes!' (discovery)

PHN *Raʔ+bun 'cover with earth' [see #106 above]

PHF *Riʔék 'thresh grain' (AE3#272)

PMP *Risi[ʔ] 'tear, split, cut' (AE2#334)

PHN *sabaʔang 'shrub, Cordyline sp. (AE2#337)

PMP *sasah ~ *sasaʔ 'cut or collect palm leaves for roofing'
     (AE1#393)

PAN *sê(n)d2úʔ 'hiccough' (AE3#292, ZORC 1982:128) add: Akl
     sidʔuʔ, Tbl senduʔ, SNEDDON PMn *seduʔ

PHN *segah 'rattan sp.' (AE2#358) -- lack of glottal in Btk seká
     (which is itself problematic) suggests a final *-h

PHN *siʔat 'split ~ slice off' (AE2#386)

PHN *siʔud 'fish net ~ trap' (AE3#310)

PHF *Saduʔ 'many, much, plenty' (AE2#402; PA3#245, ACDdraft)

PPH *tabʔang 'tasteless, lacking salt' (AE4#629)

PHN *táʔeb 'high tide' (AE3#339) add Kal, Ntg teeb

PMP *támaʔ 'appropriate, suitable; fit together' (AE3#347)

PMP *te+kuʔ 'bend, curve; hook' (AE4#647) [see #081 above]

PHN *tuʔaw 'bird sp. and its cry' (AE3#409)

PMP *tudaʔ 'throw (as stone)' (AE3#394) based on Tbl tudáʔ

PHN? *ugáliʔ 'custom, tradition' (AE3#420, ACDu27) -- could this
     be a Sanskrit loan or a maverick?

5 CONCLUSION

The Austronesian glottal stop is not a chimera[33] because five pieces of
evidence strengthen the hypothesis that it was a real and single (i.e.,
unsubscripted) PAN phoneme.

Firstly, as BLUST has observed: "In a number of widely separated
Austronesian languages, the reflex of a Proto-Austronesian or Proto-
Malayo-Polynesian final vowel is followed by a fully predictable glottal
stop. Languages that show such a presumably secondary segment include
Atayal, Sediq and many of the 'Paiwanic' languages of Taiwan, Ivatan and
Kalamian Tagbanwa in the Philippines, and Sundanese in west Java."
(1990b:242) Such phonotactic evidence suggests that a [ʔ] was phoneti-
cally available in the inventory of the languages in question, i.e., that it
did not develop ex-nihilo. No matter how widespread this phenomenon
may turn out to be, we should not project these glottal closures into our
reconstruction of PAN or lower-order proto-languages, since ample

evidence exists supporting true vowel-final forms (i.e., with nul or zero).

Secondly, grammatical evidence is mounting that a glottal stop was one feature of separating vowel-initial suffixes from vowel-final stems, e.g., *pa-susu/ʔ/-an 'breastfeed,' leading to the distinction of noun-verb pairs by this feature (as in some Iban doublets illustrated above). Furthermore, it was one means of vocative marking which had enough pressure for its retention that it was re-analyzed in Malay with final [-k] and hence preserved as a true glottal articulation on some kin terms (e.g., *adik*). This being the case, at least *some* unexplained doublets where Malay has a final [-k] and Central and Southern Philippine languages a final [-ʔ] (e.g., *sipaʔ* 'kick' or *bukaʔ* 'open') could then be explained as having arisen analogically in Malay as opposed to concluding that all such instances represent prima facie cases of borrowing in the Philippines.

Thirdly, even if Iban can only be considered a witness language, it fares exceptionally well in reflecting final *ʔ as opposed to *[Ø] in both basic and non-basic vocabulary. Instances where Iban shows a shift from PAN *S or *H > PMP *h > [Ø] instead of expected [ʔ] illustrate a widespread drift and do not obscure the reconstruction of PAN *ʔ (with which the remnants of those former reflexes merged). In fact, if Iban has a final zero and Central Philippine languages have a glottal, this strongly supports WOLFF's claim (1976) that they are indeed Malay loanwords in the Philippines.

Fourthly, the cognation of a Central Philippine [ʔ] as a reflex of PAN *q in all positions (including clusters) cannot be questioned. So the appearance of a glottal on forms where the reconstrucion of *q cannot be justified requires explanation. While analogy and borrowing (loan-marking) may account for some final occurrences, they simply will not explain all such cases, especially when also found in consonant clusters and intervocalic position.

Finally, the reconstruction of *ʔ may be like a chameleon insofar as it changes its association from subgroup to subgroup, e.g., with *q in Central Philippine languages, with *-k in Malay, or with zero in Formosa. However, procedures and correspondence sets for its reconstruction in all but initial position[34] have been established so that it can and should be considered part of the PAN phonemic inventory.

6 ABBREVIATIONS

Abr	Aborlan Tagbanwa
ACD	BLUST (in progress)
AE1	BLUST (1980)
AE2	BLUST (1983/84)
AE3	BLUST (1986)
AE4	BLUST (1989)
Akl	Aklanon
Bik	Bikol
BjrH	Banjar Malay (Hulu dialect)
Bon	Bontok
Bot	Botolan Sambal
Btk	Batak (of Palawan)
Bun	Bunun
Cas	Casiguran Dumagat
Ceb	Cebuano
Chm	Chamorro
Dbw	Dibabawon (Manobo)
GCP	BLUST (1991)
Han	Hanunoo
Hil	Hiligaynon
Ibg	Ibanag
Ilk	Ilokano
Ind	Indonesian
Jav	Javanese
Jkt	Jakarta Malay
Kal	Kalamian
Kan	Kanakanabu
K-C	Kalamansig-Cotabato Manobo
Klg	Kalagan
Kpm	Kapampangan
Lar	DYEN 1953
Lmp	Lampung
Mad	Madurese
Mal	Malay
Mar	Maranao
MBT	WOLFF (1976)
Mer	Merina Malagasy
Mex	Mexican (Spanish)
Mkb	Minangkabau
Mlg	Malagasy
Mong	Mongondow
Msk	Mansaka

NC	No known cognate
NgD	Ngaju Dayak
Ntg	Northern (Kalamian) Tagbanwa
Odg	Odionganon (Bisayan)
OJav	old Javanese
PA1	BLUST (1972)
PAA	BLUST (1970)
Pai	Paiwan
PAN	Proto Austronesian
pc	personal communication
PCP	Proto Central Philippine
PHF	Proto Hesperonesian and Formosan
PHN	Proto Western-Austronesian
PIN	Proto Indonesian
PMJ	Proto Malayo-Javanic (NOTHOFER 1975)
PML	Proto Malay (ADELAAR 1985)
PMP	Proto Malayo-Polynesian
Png	Pangasinan
POC	Proto-Oceanic
PPN	Proto-Polynesian
Puy	Puyuma
PWI	Proto West Indonesian
Rej	Rejang
Rom	Romblomanon
Sak	Sakalava Malagasy
Sbl	Sambal
Sin	Sindangan Subanon
Skt	Sanskrit (cf: GONDA 1973)
S-L	Samar-Leyte (Waray)
Sp	Spanish
Sub	Subanon
Swy	Seraway (Middle-Malay)
Tag	Tagalog
TB	Toba Batak
Tbl	Tboli (Tagabili)
Tir	Tiruray
Tkd	Takituduh Bunun
Tsg	Tausug
VL3	DEMPWOLFF (1938)
Voc	BLUST (1979)
WBM	Western Bukidnon Manobo

FOOTNOTES

1 This was begun well before my computer days, and completion was perforce arrested upon our move from Australia to the US in 1986. I began scanning it some months ago in the hopes of finally completing it. Meanwhile, Bernd Nothofer's kind invitation to honor Prof. Dyen prompted me to present revised information pertaining to the reconstruction of PAN, PMP, PHN *? since it bears on the current work of BLUST.

2 In Kuyonon all contentives end in a final glottal stop [*matá?* 'eye', *taó?* 'person'], whereas functors do not [*akó* 'I', *dagí* 'this', *dató* 'that', *pirá* 'how much?']. This appears to be the case for Sundanese as reported in NOTHOFER 1975:8, which led to the reconstruction of PMJ *-?, even where PAN or lower order proto-languages probably had zero, e.g., PMJ:95 *mata?* 'eye' < PAN *maCá[Ø]*, PMJ:179 *malu?* > PML:101 *malu[Ø]* 'shy, ashamed'.

3 In §100 he listed Tag *dalamhátí?* 'sadness' < Mal *dalam hati* 'in the heart' and Tag *tanghálí?* 'noon' < Mal *tengah hari* 'midday' as "almost certainly Malay loan words." WOLFF (1976) isolated 353 such instances.

4 Besides the examples which DYEN gave and my contrastive citations (001a+b, 028a+b), one only need consult studies like WOLFF (1976) for Malay or MUÑIZ and MOLINA (1972) for Spanish.

5 I have included Iban evidence here since it is a witness for establishing PHN or PML *?; for additional supporting data, consult the references cited.

6 Despite the agreement of Tag with Iban, the distribution of PPH *si?(e)Rang* suggests that Tag is a loan since the latter is retained in Tag *sigáng*.

7 The retention of *-? (rather than *-q) is sporadic and often limited to these kin terms. However, the evidence unequivocally points to a phonetic glottal stop, not *-q; witness the appearance of -k (phonetically -?) in Malay, not **-h. As such, it represents the selective retention of a grammatical marker, rather than any irregular correspondence set. BLUST (1979:229) observed: "The great majority of the languages of eastern Indonesia, like the Oceanic languages, have lost *q in absolute final position. Direct evidence for assigning *-q 'vocative' to Proto-Malayo-Polynesian is thus difficult to find."

8 I take the *u- or *w- that appears in some forms to be a frozen case marking particle (PAN *u) which has metathesized in some Formosan evidence (ZORC 1982:118,132, and footnote 23).

9 I do not propose that we should mark a zero [Ø] in our reconstructions. I only do so here and in several etyma below to contrast a vowel final form with those ending with a glottal stop.

10 This reconstruction differs from PMP *táma?* 'appropriate, suitable' although there may be a connection in that something that hits the mark may be considered appropriate. ADELAAR (1985:76) had doubts about the connection of 'enter' and 'hit the mark'; it would be reasonable to assume that in a hunting society a spear or arrow that enters its prey is on target. Thus the semantic shift was from specific to general.

11 Tag *kand?* 'fact' is a Malay loan.

12 If one accepts the reconstruction of a glottal stop, there is no (other?) compelling reason to reject all the Philippine forms as loans from Malay as WOLFF proposes. Although some may be, the PMP level and shape appears warranted.

13 Tagalog *mura?* 'young, inexperienced' is probably a Malay loan, but the other evidence stands.

14 WOLFF may well be correct that the Tagalog and Bikol forms are loans, since other forms in this meaning are also loans (e.g., Akl *eánsang*, Ceb *lánsang* 'nail' < Mal *rancang* 'stake'). However, since ADELAAR's Proto-Malay reconstruction with final glottal seems well motivated by the Iban evidence, the reconstruction would then need to be revised with final PMP *-h*.

15 The Tag, Bik and Han forms, if not loans from Malay (ironically without glottal closure), together with Iban would point to a doublet *pukih*. The PMP status depends on the correctness of DEMPWOLFF's association of Fiji *mata-vuki* 'ulcer on the sole of the foot' with the other data.

16 Tag *suro?* is probably a loan from Malay or Javanese.

17 Two doublets can be reconstructed for PPH *ñangka?* (Kpm *yangká?*) and *langka?* (Tag *langká?*, Akl *eangka?*). It would seem that such reshaping could as much indicate legitimacy as loan status, which WOLFF proposes.

18 I beg to differ with WOLFF based on the extremely widespread and phonologically consistent southern Philippine distribution of this form. If Fiji *sevak/i* 'drive away' is legitimately cognate, then the doublet *(*sipak)* could be raised to PMP.

19 If WOLFF is correct that the central Philippine forms are Malay loans (as they may well be), the reconstruction (with glottal) is justified for PML or PMJ.

20 If the central Philippine forms are Malay loans, the reconstruction (with glottal) is justified for PML or PMJ.

21 Ceb *kulápu?* 'vegetable film on water' cited by DYEN as the only CPh form with a glottal is not attested in WOLFF (1972:490), but *kulápu* 'brand of cheap local wine' is and may be cognate through a semantic extension of 'slime' > 'dregs' > 'cheap wine.'

22 Although this may represent a case of glottal retention via [-k], based on Mal, Jkt *bérak*, Brunei *bariak*, I would reconstruct a PML *baqiRak*, taking Iban *bira?* and BjrH *bahira* as instances of unexplained loss of *k*.

23 The connection between 'son-in-law' and 'help or service to one's in-laws' made by DEMPWOLFF is at least a western Austronesian phenomenon exemplified by Akl *pang-agád* 'help out ~ work for one's parents-in-law to be' and *um-ágad* 'son-in-law.'

24 Tag *kaliwá?* 'left' could be a Malay loan (as is Tag *kánan* 'right'), but with an *<al>* infix. It is more likely to be an inherited form of PCP *kali-waláh*, with loss of *l* and glottal closure (Akl *waeáh*, Rbl *wayáh-*, Msk *kawara*, Klg *kawala*; for the prefix, contrast PCP *kalin-tu?úh* 'right' > Akl *tu?úh*, Msk *karintu*, Klg *kalintu*, Dbw *kalintũ?u*).

25 This may be a reshaped loan of Skt *kSantavya-* (GONDA 1973:640).

26 Loss of final [a] and introduction of a glottal stop is a reflex of Aklanon (and Proto Bisayan) zero.

27 On the other hand, an [h] yields a reconstruction with his *s* (others' *S*) even if Formosan cognates are unavailable. He thus reconstructs PAN *baksaw* Rhizophora sp. (for my PMP *bakhaw*).

28 Tagalog generally reflects *Ø* with a glottal stop, e.g., PAN *Ca[Ø]u* > Tag *tá?o* 'person', but here has a doublet.

29 As in WBM *beGat* 'heavy' (above) or WBM *beGu* 'new' < PSP *baqRuh* < PAN *baqeRuH*, WBM *luya* 'ginger' < PSP *lũ?ya*, WBM *daGem* 'become darker' < GCP *dag?em* 'raincloud.' There are exceptions such as WBM *das?eg* 'jam (of logs in stream)' < GCP *da?+seg* 'move close, jam together' and WBM *han?ey* 'wind a rope or string in a figure eight around two posts' < PHN *ha?ney* 'weave, set up warp.'

30 The Malay cognate of this form appears in obvious loans throughout the Philippines, e.g., Tag *halimaw* 'ferocious beast', Mar *arimao*, Tir *arimaw* 'lion', Ilk *oltmaw* 'winged serpent, imaginary phantom.'

31 If Tag is a loan, then all the other evidence would point to PHN **lagih*. The semantics of Tag are too different to isolate a source language at this point.

32 The final [-k] in Kal *leek* is problematic since **k* > zero. If it represents metathesis (< **leqe[Ø]*), it would then support a reconstruction such as **luqek*.

33 Neither "an imaginary monster made up of grotesquely disparate parts" nor "an organism consisting of two or more tissues of different genetic composition, produced by mutation, grafting, or the mixture of cell populations from different zygotes" (American Heritage College Dictionary, third edition, Boston: Houghton Mifflin Company, 1993:243).

34 The evidence for this may be irretrievably lost to us. See my discussion of some bound forms and monosyllabic roots (ZORC 1982:130).

35 ADELAAR does not reconstruct a PML glottal here, which appears to be an oversight based on his procedure regarding Iban evidence elsewhere.

36 I stand corrected. Iban *ulu?* 'meaning' is possibly from PHN **ka-huluR-an* 'meaning.'

7 REFERENCES

ADELAAR, K. A.
1985. *Proto-Malayic the reconstruction of its phonology and parts of its lexicon and morphology*, Alblasserdam: Offsetdrukkerij Kanters B.V.

BALDI, Philip, ed.
1990. *Linguistic Change and Reconstruction Methodology*, Berlin: Walter de Gruyter.

BLUST, Robert.
1970. Proto-Austronesian addenda, *OL* 9:104-162.
1979. Proto-Western-Malayo-Polynesian vocatives, *BKI* 135:205-251.
1980. Austronesian Etymologies, *OL* 19.1:1-181.
1983/84. Austronesian Etymologies II. *OL* 22-23:29-149.
1986. Austronesian Etymologies III, *OL* 25:1-123.
1988. *Austronesian Root Theory: An Essay on the Limits of Morphology*, Amsterdam: John Benjamins.
1989. Austronesian Etymologies IV, *OL* 28.2:111-180.
1990a. Summary report: Linguistic change and reconstruction methodology in the Austronesian language family, in BALDI (ed.):133-153.
1990b. Patterns of sound change in the Austronesian languages, in BALDI (ed.): 231-267.
1991. The Greater Central Philippines hypothesis, *Oceanic Linguistics* 30.2:73-129.
1994. Austronesian sibling terms and culture history, in A. K. PAWLEY and M. D. ROSS, (eds.), *Austronesian Terminologies: Continuity and Change*, PL C.127:31-72.
in progress. *Austronesian Comparative Dictionary*. Computer files, University of Hawaii.

DEMPWOLFF, Otto.
1938. *Vergleichende Lautlehre des austronesischen Wortschatzes*, Band III. Austro-nesisches Wörterverzeichnis. Zeitschrift für Eingeborenen-Sprachen 19. Berlin: Dietrich Reimer.

DYEN, Isidore.
1953. *The Proto-Malayo-Polynesian Laryngeals*, William Dwight Whitney Linguistic Series No. 9. Baltimore: Linguistic Society of America.
1990. Homomeric lexical classification, in BALDI (ed.):211-230

FERRELL, Raleigh.
1969. *Taiwan Aboriginal Groups: Problems in Cultural and Linguistic Classification*, Institute of Ethnology, Academia Sinica, Monograph No. 17. Taipei.

GONDA, J.
1973. *Sanskrit in Indonesia*, New Delhi: International Academy of Indian Culture.

MILLS, Roger F.
1975. *Proto South Sulawesi and Proto Austronesian Phonology*, 2 vols. Ph.d. disser-tation, University of Michigan. Ann Arbor: University Microfilms International.

MUÑIZ, Adolfo Cuadrado and Antonio M. MOLINA, et al.
1972. *Hispanismos en el Tagalo*, Madrid: Oficina de Educacion Iberoamericana.

NOTHOFER, Bernd.
1975. *The Reconstruction of Proto-Malayo-Javanic*, Verhandelingen van het Konin-klijk Instituut voor Taal-, Land- en Volkenkunde, No. 73. 's-Gravenhage: Martinus Nijhoff.

TSUCHIDA, Shigeru.
1976. *The Reconstruction of Proto-Tsouic Phonology*, Study of Languages & Cultures of Asia & Africa Monograph Series No. 5. Tokyo.

WILKINSON, R. J.
1959. *A Malay-English Dictionary (Romanised)*, London: Macmillan and Co. Ltd.

WOLFF, John U.
1974. Proto-Austronesian *r and *d, *Papers of the First International Conference on Comparative Austronesian Linguistics*, OL 13:77-121.
1976. Malay borrowings in Tagalog, in O. D. COWAN and O. W. WOLTERS (eds.), *Southeast Asian History & Historiography Essays Presented to D.G.E. Hall*: 345-367. Ithaca: Cornell University Press.
1982. Proto-Austronesian *c, *z, *g and *t, in Amran HALIM, Lois CARRINGTON and S.A. WURM (eds.), *Papers from the Third International Conference on Austro-nesian Linguistics, vol. 2: Tracking the travellers*, PL C-75:1-30.
1988. The PAN Consonant System, in Richard McGINN (ed.), *Studies in Austro-nesian Linguistics*. Ohio University Monographs in International Studies, Southeast Asia Series, No. 76:125-147.
1991. The Proto Austronesian phoneme *t and the grouping of the Austronesian Languages, in Robert BLUST (ed.), *Currents in Pacific linguistics: papers on Austronesian languages and ethnolinguistics in honour of George W. Grace*, PL C-117: 535-549.

ZORC, R. David.

1977. *The Bisayan Dialects of the Philippines: Subgrouping and Reconstruction,* Pacific Linguistics C.44. Canberra: The Australian National University.

1982. Where oh where have the laryngeals gone? Austronesian Laryngeals Re-examined, in Amran HALIM, Lois CARRINGTON and S.A. WURM (eds.), *Papers from the Third International Conference on Austronesian Linguistics, vol. 2: Tracking the travellers,* PL C-75:111-144.

1990. The Austronesian monosyllabic root, radical or phonestheme, in BALDI (ed.):175-194.

1994. Evaluation of evidence and errors in Austronesian reconstruction, 7ICAL paper, Leiden.

TABLE 1. IBAN RETAINS FINAL *-h

Iban *anuʔ* 'so and so' < PHN **anúh* 'what(ever)' > PML:88,82,149 **anuʔ*

Iban *baraʔ* < PHF **báRaH* 'live coals' > PML:49f **baraʔ*

Iban *baruʔ* < PAN **báRu[H]* 'hibiscus' *Gnetum Gnemon* > PML:82 **baruʔ*

Iban *bukuʔ* < PMP **bukúh* 'internode, node' > PML:82 **bukuʔ*

Iban *dakiʔ* 'dirt on body' < PAN? **dakíH* 'dirty' > PML:82 **dakiʔ*

Iban *depaʔ* < PMP **Dêpáh* 'fathom (span of arms)' > PML:82 **depaʔ*

Iban *duriʔ* < PHF **dúRiH* 'thorn; prick' > PML:86 **duriʔ*

Iban *-iʔ* < PAN **-i[H]* locative verb suffix > PML:75f,173 **-i*; Akl *-ih*, Mal *-i*, Bun, Tkd *-i*; Pai *-i* (OF subjunctive)

Iban *iuʔ* < PAN **qíSu* 'shark' > PML:107,228 **hiuʔ*

Iban *jajaʔ* < PHN **zazáh* 'peddle, hawk' > PML:82 **jajaʔ*

Iban *jawaʔ* < PHF **záwah* 'millet, grain' > PML:82 **jawaʔ*

Iban *jeramiʔ* < PHF **ZaRámi[H]* 'rice straw, stubble' > PML:63,82 **jAramiʔ*

Iban *kayuʔ* < PAN **káyuH* 'tree, wood, stick' > PML:68 **kayuʔ*

Iban *kenuʔ* < PHN **kenúh* 'it is said, they say' > PML:82 **kenuʔ*

Iban *kitaʔ* 'you all' < PAN **kitáH* 'we [incl]' > PML:66,82 **kitaʔ*

Iban *lengaʔ* < PHN? **lêngáh* 'sesame, *Sesamum indicum*' PML:82 **lengaʔ*

Iban *limaʔ* < PAN **limáH* 'five' > PML:101 **limaʔ*

Iban *ñiluʔ* < PHF **ngilúH* 'set teeth on edge' > PML:82,90 **ngiluʔ*

Iban *pariʔ* < PAN **páRiS*, PMP **páRih* 'stingray' > PML:82 **pariʔ*

Iban *peñuʔ* < PMP **pêñúh* 'green sea turtle' > PML:82 **peñuʔ*

Iban *saguʔ* < PMP **sagúh* 'sago' > PML:83 **saguʔ*

Iban *sawaʔ* < PMP? **sawáh* 'python' > PML:69,83 **sawaʔ*

Iban *sidaʔ* < PMP **si+d2áh* 'they' PML:83 **sidaʔ*

Iban *taiʔ* < PHF **CáqiH* 'excrement' > PML:70 **tahiʔ*

Iban *tauʔ* < PAN **CaqúH* 'know (how)' > PML:154 **tahuʔ*[35]

Iban *tingaʔ* < PHF **CingáS* 'particles of food stuck in teeth' > PML:83 **tingaʔ*

Iban *tuliʔ* 'having a suppurating ear' < PMP **tulíh* 'earwax, cerumen' > PML:83 **tuliʔ*

Iban *tumaʔ* < PAN **CúmeS ~ CúmaH* 'louse (body ~ clothes)' > PML:83,115-fn26 **tumaʔ*

TABLE 2. IBAN LOSES FINAL *-h

Iban *baru* < PAN **baq(e)RuH* 'new' > PML:63 **bAharu[Ø]*
Iban *dada* < PAN **daS+daS* 'chest, breast' > PML:86 **dada[Ø]*
Iban *dai* {poetic} < PAN **daqtS* 'forehead' > PML:85 **dahi[Ø]*
Iban *kuku* < PAN **kuS+kuS*, PMP **ku+kúh* 'fingernail, claw > PML:85
    *kuku[Ø]
Iban *pa:h* (metathesis of **q* to final position) < PAN **páqaS* 'thigh' >
    PML:84 **paha(?)*
Iban *siku* < PAN **sí+kuH* 'elbow' > PML:85,151 **siku[Ø]*
Iban *tali* < PAN **CaltS* 'rope, (hemp) cord' > PML:85 **tali[Ø]*
Iban *tebu* < PAN **[tC]êbúS* 'sugarcane' > PML:85 **tebu[Ø]*
Iban *tunu* < PAN **CuNuH* 'roast on fire' > PML:85 **tunu[Ø]*
Iban *ulu* 'handle, upper part; upriver' < PAN **qúluH* 'head' > PML:84
    *hulu(?)[36]

TABLE 3. IBAN PROVIDES NO EVIDENCE FOR *-h

Iban *bungay* < PMP **búngah* 'bud, blossom' PML:84 **bunga(?)*
Iban *kitay* < PAN **kitáH* 'we [incl]' > PML:66,82 **kitá*
Iban *tuay* < PAN **tuqáS* 'old (person)' > PML:84 **tuha(?)*
Iban *tubay* < PMP **túbaH* 'derris root fish poison' > PML:84 **tuba(?)*
Iban *umay* < PAN **qumáH* 'garden, cultivated field' > PML:65f,84
*huma(?)

TABLE 4. AUSTRONESIAN LARYNGEAL CORRESPONDENCE SETS

Result / Lang	loan	*?	*q	PMP *h	PAN *H	PAN *S	*Ø (zero)
Tag	(-Ø/?)	?	?	h	h	h	-?-(h)
Bik	(-Ø/?)	?	?	h	h	h	-w/y-(h)
Akl	(-Ø/?)	?	?	h	h	h	-w/y-Ø
Ceb	(-Ø/?)	?	?	h	h	h	-w/y/?-Ø
WBM	(-Ø/?)	?	?	h-h-Ø	h-h-Ø	h-h-Ø	-w/y/?-Ø
Ntg	Ø-?	Ø-?	k	Ø-?	Ø-?	Ø-?	Ø-(?)
Tbl	(-Ø/?)	?	k-h-k	?-?-h	?-?-h	?-?-h	?-?-(h)
Mal	Ø	Ø-Ø/k	h	h/Ø-Ø-Ø	h/Ø-Ø-Ø	h/Ø-Ø-Ø	Ø
Iban	Ø	-?	-h	-?/Ø	-?/Ø	-?/Ø	Ø
OJav	Ø	Ø-Ø/-k?	h	h/Ø-Ø-Ø	h/Ø-Ø-Ø	h/Ø-Ø-Ø	Ø
Tonga	Ø	Ø	?	Ø	Ø	Ø	Ø
Pai	Ø	Ø	q	NC	Ø	s	Ø
Tkd	Ø-(?)	Ø-(?)	q	NC	h	s	Ø-(?)

See ZORC (1882:115) for additional languages.