

# Axis Relationships in the Philippines: When Traditional Subgrouping Falls Short

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<sup>1</sup>I am deeply indebted to April Almarines, Drs. Robert Blust, Lawrence A. Reid, Erik Zobel, Jason Lobel, Hsiu-chuan Liao, Ronald S. Himes, Carl Rubino, Neil Chadwick, and Alexander “Sasha” Vovin for taking the time to read a draft of this paper and/or sending me extremely valuable comments and corrections. I would also like to thank my wife Nellie for her proofreading, advice, and extreme patience. I assume full responsibility for any and all residual errors or infelicities. – R. David Zorc

<sup>2</sup>Although this paper discusses years of research starting from the time I was struggling with my dissertation (1972) and through over 4 decades working on my ZDS (Zorc Data Sheets) etymologies <<https://zorc.net/RDZorc/PHILIPPINE-ETYMA/>>, it is more than obvious to me that April has played such a major role in producing all the maps, as well as the development, accuracy, and statements concerning these axis relationships. She has rightfully critiqued many of my initial proposals, requiring either adjustments or withdrawals. Ever since I took her on as a mentee, she has gained a solid grasp of linguistics in general and Philippine subgrouping in specific, and has noted where problems exist and need clarification. The entirety of Appendix B is authored by her and is the result of her deep interest in the breadth of Philippine subgrouping. Hence I have decided that such enormous effort deserves acknowledgment. Many of my close linguistic friends have dealt with her, and realize that doing anything else would be a serious oversight, if not a travesty. – R. David Zorc

### Abstract

Most scholars seem to agree that the Malayo-Polynesian expansion left Taiwan around 3,000 BCE and virtually raced south through the Philippines in less than one millenium. From southern Mindanao, migrations went westward through Borneo and on to Indonesia, Malaysia, and upwards into the Asian continent (“Malayo-”), and some others went south through Sulawesi also going eastward across the Pacific (“-Polynesian”).<sup>3</sup>

If this is the case, the Philippine languages are the “left behinds,” allowing at least two more millennia for multiple interlanguage contacts within the archipelago. After two proposed major extinctions: archipelago-wide and the Greater Central Philippines (Blust 2019), inter-island associations followed the ebb and flow of dominance, expansion, resettlement, and trade. Little wonder then that “unique” lexemes found on Palawan can appear in Mindoro or Panay; developments throughout the east (Mindanao, the Visayas, and southern Luzon) can appear in Central Luzon, and an unidentified language with the shift of Philippine \*R > y had some influence on Palawan and Panay.

As early as 1972, while writing up my dissertation (Zorc 1975, then 1977), I found innovations that did not belong to any specific subgroup, but had crossed linguistic boundaries to form an “axis” (my

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<sup>3</sup>The initial presupposition behind the term “Malayo-Polynesian” was that the Malay (and Indonesian) languages were “primary” and “prior to” the settlement of the Philippines, and indeed spawned Philippine languages. The truth is that the Philippines was the first area to be settled “out of Taiwan.” This presupposition has prompted some scholars (e.g., Reid 2009) to prefer a new term “Extra-Formosan.” A revised semantic assignment can still salvage the original.

term, but related to German “SPRACHBUND,” “NETWORK” [Milroy & Milroy 1985], “LINKAGE”<sup>4</sup> [Ross 1988, Pawley & Ross 1995]).

Normally, INNOVATIONS should be indicative of subgrouping. However, they can arise in an environment where different language communities develop close trade or societal ties. Several well-established etymologies, among them PAN \*bəlīh ‘buy,’ PAN \*qabu ‘ash(es),’ PAN \*Cau ‘person,’ PMP \*pia ‘good,’ PMP \*sida ‘they,’ will be shown to have been replaced by innovations that are clearly not subgroup-specific, but rather areal phenomena.

Out of over 6,700 etyma among the Zorc Data Sheets (ZDS) (Zorc, ongoing), only 361 represent axis relationships. This is around 5%, so they do not undo the overall standing of well-established subgroups, which make up its bulk. However, these illustrate undeniably evident interrelationships among languages which basic subgrouping does not otherwise account for. This paper will discuss fifteen such axis relationships that have arisen throughout the Philippines. While this is certainly not an exhaustive study, it should be sufficient to demonstrate that not all INNOVATIONS are made within clearly established subgroups, and, as such, deserves the attention of Philippine comparative linguists.

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<sup>4</sup>Blust (personal communication, July 29, 2021) has pointed out: “A LINKAGE, as Malcolm has described it, is a collection of languages that show overlapping innovations that do not cover the entire group (i.e., innovation 1 covers languages A–F, while innovation 2 covers languages D–I). It is designed to address modern languages that descend from dialect chains, and that is not what you are doing here, since you clearly recognize the reality of discrete subgroups that show ‘lexical leakage’ into their neighbors, and discrete subgroups (as opposed to linkages) descend from self-contained ancestral language communities, not from dialect chains. And to follow up, dialect chains form because language split is rarely ‘abrupt and complete’ as the Family Tree model implies, but is ‘sticky’ in that communities that separate often continue to be in contact for generations.”

## 1 What is an Axis?

Briefly stated, it consists of any unique form not found anywhere else (therefore an INNOVATION) which spread across two or more well-established subgroups.<sup>5</sup> Similar or potentially related terms include SPRACHBUND, NETWORK, or LINKAGE. In any such instances, we must rule out if this might represent a MACROGROUP (a higher-order subgroup consisting of several lower-order subgroups, such as Greater Central Philippines which includes Tagalog, Bikol, Bisayan, Mansakan, Manobo, Danaw, Subanen, etc.) or a SELECTIVE INNOVATION (Zorc 1986; one where geographically-separated languages have replaced an otherwise well-established etymon). PPH \*dagʔun ‘year’<sup>6</sup> is a good example of a selective innovation (reflected in North Cordilleran [Atta,<sup>7</sup> Central Cagayan Agta,<sup>8</sup> Ibanag, Isnag, Gaddang, Itawis, Malaweg], Mangyan [Iraya, Alangan, Hanunoo], West Bisayan [Aklanon, Bulalakawnon, Kuyonon, Pandan, Semirara/Kaluyanen], Danao [Iranun,<sup>9</sup> Maranao, Maguindanaon], and Central Manobo

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<sup>5</sup>Let me add at this point that I would appreciate it if the reader (or listener), upon having gone through this paper, wrote his/her own definition of what an *axis* is.

<sup>6</sup>The ACD posits PPH \*dag(ə)qún ‘year’ but none of the witness languages support either schwa syncope or \*q (see \*dagʔun in ZDS for more citations than are covered in the ACD).

<sup>7</sup>There are up to four varieties of Atta in the Philippines (this is just one cognate variant of PPH \*qaRta ‘Negrito’, others are *ʔarta*, *ʔalta*, *ʔagta* and *ʔata*, so this term represents a HOMONYM, not a subgroup or macrogroup) including Atta Faire, Atta Pamplona, Atta Pudtol, and Villa Viciosa Atta (see Wikipedia Atta language). Here and elsewhere in this paper, this label refers exclusively to the language “Atta” Pamplona in Reid (1971).

<sup>8</sup>There are up to eight varieties of Agta in the Philippines, so this term represents another HOMONYM cognate with PPH \*qaRta including: Central Cagayan Agta, Dupaningan Agta, Pahanan Agta, Dinapigue Agta, Casiguran Dumagat Agta, and Nagtipunan Agta. Here and elsewhere in this paper, the label “CCAgtá” refers exclusively to the language “Agta” in Reid (1971) supplied by Roy Mayfield of SIL, spoken in the central Cagayan Valley, and “CDAgtá” refers exclusively to Casiguran Dumagat Agta.

<sup>9</sup>There is also a dialect of Iranun spoken in Sabah, which actually has a much larger corpus of data available.

[Western Bukidnon, Obo, Ilianen]) which replaced PMP \*taqun (otherwise well-retained and widespread throughout the Philippines) (Zorc 1986).

## 2 Observing the Complicating Factors of Axis Relationships

While collating my fieldwork data and writing my dissertation in 1972–1974, I was confronted with a number of innovations that were spread across various otherwise well-established subgroups, one of the most notable of which was the replacement of PAN \*bəlīh ‘to buy’ (retained in Tagalog, Tausug, Mansaka and Bilic) by \*bakál: in Aklanon *bakáe* /bakáw/,<sup>10</sup> Asi’, Romblomanon *bakáy*, Bulalakawnon, Kinaray-a, Semirara/Kaluyanen, Ilonggo/Hiligaynon, Masbatenyo, Hanunoo, and all Bikol languages *bakál*. Because this form \*bakál cuts across five separate discrete subgroups (West Bisayan, Asi’, Central Bisayan, Bikol, and South Mangyan), I proposed that forms with this distribution provided evidence of a North Bisayan “Axis.”<sup>11</sup> It is clear from evidence in Reid (1971), McFarland (1977), and Zorc [ZDS] that analogous replacements in this meaning have occurred throughout the Philippines supporting other “axis” relationships. Waray, Cebuano, Surigaonon, Mamanwa, Kamayo, Kagayanen, and several Mansakan languages have *palít* from PPH \*palít ‘exchange’ [ACD] (possibly related to Dempwolff’s \*palit ‘return gift’), suggesting

<sup>10</sup>Aklanons spell the voiced velar semivowel as <e>, whereas its linguistic symbol is [w].

<sup>11</sup>Zorc coined the term “axis” in 1972, since which similar phenomena have been described as “network” by Milroy & Milroy (1985), and as “linkage” by Pawley & Ross (1995) and Ross (1988). Note that this phenomenon could also be accounted for by the German terms “Sprachbund” or “Sprechbund.”

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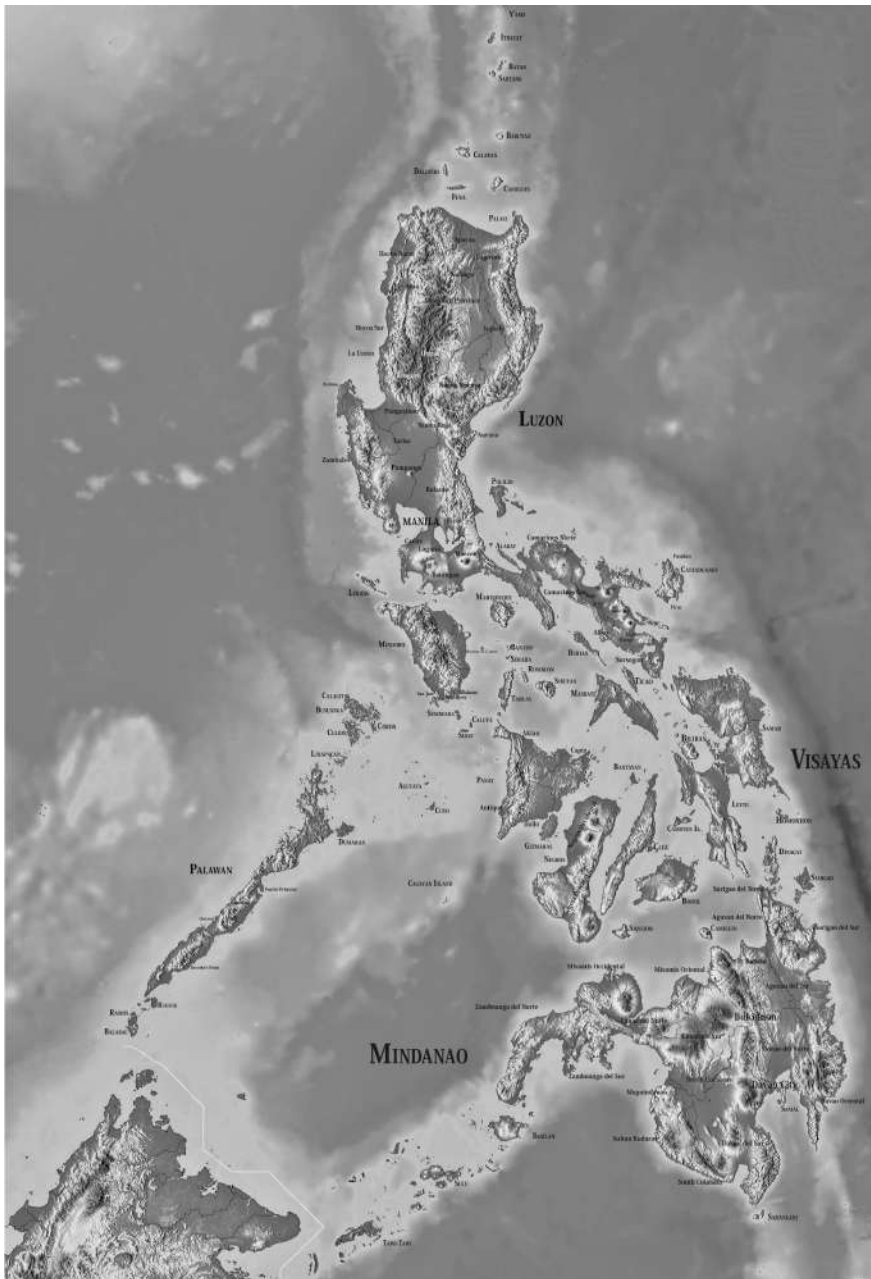
an Eastern Mindanao Axis. Kalamianic and Palawanic have \*alaŋ, supporting a Palawan-Kalamian Axis. Northern Philippine languages have either \*gátaŋ or \*lákuʔ, suggesting two Northern Luzon Axes. South Cordilleran has \*tungal, which is unique to that subgroup, and the Danao languages, Dibabawon, and Western Bukidnon Manobo share *pamasa* ‘buy’ (possibly from Persian *bāzār* ‘market’ via a Sama-Bajaw language which loses word-final *r*, *pasa* + *paŋ-*). Each of these replacements represents “leakage” (in the terminology of Blust [2019] for loans that cross genetic boundaries) from one well-established subgroup into other neighboring languages where significant trade or social networks existed. These post-split<sup>12</sup> innovations give the false impression of a genetic subgrouping, whereas what they actually indicate is a significant sociolinguistic replacement phenomenon.

Thus far, I have uncovered evidence for fifteen such relationships. They will be treated in the order that I “discovered” them and from the more pervasive and persuasive etyma to those less so (i.e., they will not be in alphabetical order). Note also that in several instances some languages such as Ilokano, Tagalog, and Hanunoo are included in two or more axes. Although maps are provided herein, the majority of them indicate the current (synchronic) location of speech varieties. Most axis relationships may have a time depth of up to one thousand years, and we just do not know where most languages were at that time.

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<sup>12</sup>The term *post-split* refers to the time after any language or subgroup splits off from a subgroup or “mother” language. This would include when PMP split off from PAN, or when Tagalog split off from Proto-Central Philippine, or when Proto-Central Philippine split off from Greater Central Philippine, and so on.

## Axis Relationships in the Philippines



The Philippines

## Name Changes

Coastal Bikol	Northern Bikol	Pandan Bikol	Northern Catanduanes Bikol
Inland Bikol	Southern Bikol	Virac	Viracnon
Daraga	Miraya	Luba	Northern Kankanaey
Oas	West Albay Bikol	Manabo	Masidiit Itneg
Buhi	Buhi-non/Buhi'non	Sinauna	Remontado/Hatang-Kayi
Iriga	Rinconada	Naturalis	Tandaganon
Gubat	Southern Sorsoganon	Semirara	Kaluyanen
Sorsogon	Central Sorsoganon		

## Abbreviations and Symbols

* [asterisk]	a reconstructed etymology or proto-form (based on best evidence)	Btk	Batak
† [dagger]	a “maverick” proto-form (Mahdi 1994a,b)	Buh	Buhid
Abr	Aborlan Tagbanwa	Buhi	Buhi-non ~ Buhi'non
ACD	Austronesian Comparative Dictionary (Blust & Trussel 2020)	But	Butuanon
Agy	Agutaynen	Byn	Bayninan Ifugao
Akl	Aklanon (West Bisayan, Northern Panay)	Cap	Capiznon
Aln	Alangan	Car	Caraga (Eastern Mansakan)
Amg	Amganad Ifugao	CCAgt	Central Cagayan Agta
Ata	Ata Manobo	CDAgt	Casiguran Dumagat Agta
BamIsi	Bambang Isinay	Ceb	Cebuano (Cebu, Leyte)
Bash-Ilk-axis	Bashiic-Ilokano Axis	cf	compare with (from Latin <i>confer</i> )
Bis-Bik-axis	Bisayan-Bikol Axis	CLz-axis	Central Luzon Axis
Blk	Bulalakawnon (southeastern Mindoro)	CMn-axis	Central Mindanao Axis
Blw	Balangaw	CONJ	conjunction
Boh	Boholano (Cebuano dialect)	CSor	Central Sorsoganon
Bol	Bolinao	CSub	Central Subanen
Bot	Botolan Sambal	CTbw	Central Tagbanwa
Btd	Batad Ifugao	Dbw	Dibabawon Manobo
		DEIC	deictic
		DP	discourse particle
		Dsp	Dispoholnon
		Dtg	Datagnon/Ratagnon (West Bisayan, Southern Mindoro)
		ELz-axis	Eastern Luzon Axis



## Axis Relationships in the Philippines

EMn-axis	Eastern Mindanao Axis	Kin	Kinaray-a (Antique)
Gad	Gaddang	Kla	Kalinga (Reid 1971, McFarland 1977)
GCP	Greater Central Philippine	Klg	Kalagan (Reid 1971)
GEN	genitive	Kly	Keley-i Kallahan (Reid 1971)
Han	Hanunoo (South Mangyan, Southern Mindoro)	Knk	Kankanaey (Reid 1971, McFarland 1977)
Hil	Hiligaynon/Ilonggo (Central Bisayan, Southern Panay, Negros Occidental)	KnkN	Kankanaey-N, Northern Kankanaey (Reid 1971, McFarland 1977)
Ibg	Ibanag	KnkS	Kankanaey-S, Southern Kankanaey (McFarland 1977)
IbgP	Pamplona Ibanag	KorBl	Koronadal Bilaan
IbgT	Tuguegarao Ibanag	Kpm	Kapampangan
Ibl	Inibaloi/Ibaloy/Ibaloi (Reid 1971)	Krm	Karamiananen
Ibt	Ibatan	Kuy	Kuyonon
Ifg	Ifugao	Kyp	Kayapa Kallahan (Reid 1971)
Ilk	Ilokano	Leg	Legaspi
Iln	Ilianen Manobo	Lib	Libon
Ilt	Bugkalot/Ilongot	Lok	Looknon
Ira	Iranun	Mar	Maranao
Iry	Iraya (North Mangyan, Northern Mindoro)	Mas	Masbatenyo
Isg	Isnag ~ Isneg (McFarland 1977)	McF	McFarland
Isi	Isinay (Reid 1971)	McF-NP	McFarland (1977)
IsiB	Isinay Bambang	Mgd	Maguindanaon
IsiD	Isinay Dupax Del Sur	Mir	Miraya
Itb	Itbayaten	MlaTag	Manila Tagalog
Itg	Itneg (McFarland 1977)	Mlb	Molbog
Itw	Itawit ~ Itawis (McFarland 1977)	Mlw	Malaweg (McFarland 1977)
Ivt	Ivatan	Mmw	Mamanwa
K-C	Kalamansig Cotabato Manobo	Msk	Mansaka
Kal	Kalamian Tagbanwa	NBik	Northern Bikol
Kam	Kamayo	NBs-axis	North Bisayan Axis
Kbs	Kabasagan (Eastern Mansaka) (Zorc 1977)	NCat	Northern Catanduanes
Kgy	Kagayanen	NEG	negative
Kia	Kiangnan Ifugao (McFarland 1977)	NLz-axis	Northern Luzon Axis
		NOM	nominative

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Pal	Palawano	Sbl	Sambal
Pal-Kal-axis	Palawan-Kalamian Axis	Sem	Semirara/Kaluyanen (Semirara Island Group)
Pal-Mind-axis	Palawan-Mindoro Axis	SG	singular
PAN	Proto-Austronesian	SLz-axis	Southern Luzon Axis
Pan	Pandan Bisayan (northwestern Panay, a dialect of Kinaray-a)	SMn-axis	Southern Mindanao Axis
PBs	Proto-Bisayan	Sur	Surigaonon
PCP	Proto-Central Philippine	Tag	Tagalog, usually the Manila dialect or Tagalic subgroup
PL	plural	Tig	Tigwa Manobo
PMP	Proto-Malayo-Polynesian	Tdg	Tandaganon
Png	Pangasinan ~ Pangasinense	Tdy	Tadyawan
PNP	Proto-Northern Philippine	Tir	Tiruray ~ Teduray
PPH	Proto-Philippine	Tsg	Tausug
PRO	pronoun	v	verb
PSP	Proto-Southern Philippine	Vir	Virac Bikol, changed to Viracnon (Southern Catanduanes)
PWMP	Proto-Western-Malayo- Polynesian	WABik	West Albay Bikol
QW	question	WBM	Western Bukidnon Manobo
Rd	Reid	WLz-axis	Western Luzon Axis
Rin	Rinconada	WSub	Western Subanen
Rom	Romblomanon	Yog	Yogad
SarBl	Sarangani Bilaan	ZDS	Zorc Data Sheets (Zorc n.d.)
SarMb	Sarangani Manobo		
SBik	Southern Bikol		

## 2.1 North Bisayan Axis

This particular axis affects members of the West Bisayan, Central Bisayan, Asi', Bikol, and Hanunoo (South Mangyan) subgroups as well as Kagayanen.<sup>13</sup> Geographically this includes northern Panay, southern Mindoro, Tablas, Caluya, Sibale, Banton, Masbate, the Bikol peninsula, and Cagayancillo Island.

<sup>13</sup>In Zorc (1974), I pointed out that Kagayanen, before it broke off from the rest of the Manobo languages, had picked up several South Bisayan innovations, and when it settled in Cagayancillo, it picked up West Bisayan ones. However, its Manobo substratum was clearly retained.



Figure 1: North Bisayan Axis

- (1) NBs-axis \*bəʔól ‘take, get s.t.’ replaces PAN \*alap and/or \*alaq, PCP \*kúha(?):<sup>14</sup> Kin, Pan, Sem *biʔil*, Kuy *biil*, Akl *buʔóy*, Blk, Dtg *buʔúl*, Asi’ *baʔóy* (unexplained \*ə<sub>1</sub> > a), Rom *buʔóy*, and Han *búʔul*.
- (2) NBs-axis \*hambal ‘say, speak’ replaces PAN \*kaRi: Kin, Pan, Blk, Mas, Hil *hámbal*, Sem *ʔámbal*, Kgy *ʔámbal*, Akl *hámbay*, Asi’, Rom *hámbay*.

<sup>14</sup>This may be descended from PAN \*kuSa ‘work’ in the ACD with a semantic reassignment.

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- (3) NBs-axis \*mayád ‘good’ replaces PMP \*pia, PPH \*ʔupiya:<sup>15</sup> Akl, Pan, Kin, Blk, Dtg, Kuy, Vir, SSor, CSor *mayád*; Kgy *miyád*.<sup>16</sup>
- (4) NBs-axis \*taʔú ‘give’ replaces PAN \*bəRay: Kin, Pan *taʔú*, Akl, Blk, Sem, Rom, Asi’, NBik, SBik *taʔó*.
- (5) NBs-axis \*búhin ‘subtract, deduct, decrease, take away’ replaces PPH \*báwas:<sup>17</sup> Akl, Kin, Pan, Blk, Asi’, Hil *búhin*, Sem *búwin*, Kuy *buin*; borrowed by Kgy *buwin*.
- (6) NBs-axis \*ábi(?)<sup>18</sup> [DP: EXCUSE] ‘well..., because...’ [no established etymon]: Akl, Lok, Dsp, Hil *ʔábi?*, Kin, Asi’, Rom *ʔábi*, Han *ʔábi* ‘in case.’
- (7) NBs-axis \*bahól ‘big’ replaces PAN \*Raya, PMP \*laba, PPH \*dakól: Kin, Pan *babil*, Akl *ma-bahóy*, Blk, Lok, Dtg *bahúl*, Kuy *ma-baíl*, and Rom *ma-bahóy*.

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<sup>15</sup>The ZDS reconstructs PPH \*ʔupiya with an initial ʔu- which may actually be a frozen common noun topic marker, i.e., ‘the good one’ based on Western Bukidnon, Ilianen, & Tigwa Manobo *ʔupiya*, Waray *ma|ʔúpáy* (metathesis), Kalamian Tagbanwa *m|upia*, and Bugkalot/Ilongot *ʔupiya*. Hsiu-chuan Liao (personal communication, August 3, 2021) explains the Bugkalot/Ilongot form. “Stative verbs (or ‘adjectives’) take ʔu-, not ma- in Bugkalot/Ilongot. The use of ma- in Bugkalot/Ilongot is typically associated with loanwords.”

<sup>16</sup>This is formed from a root \*ʔáyád ‘repair, make good’ [ZDS]. Reid (personal communication, July 28, 2021) suggests that “this etymon could be related to Ilk *mayát* ‘desire’ which is related to Ilk *ʔayát* ‘love.’” Zorc (1977) discussed SHIMMER as “forms (which) differ in one segment by one phonological feature” (58). So both NBs-axis \*mayád and Ilk *mayát* may descend from a PPH \*ʔayád (with shimmer affecting the final consonant), granting that the semantics of ‘love’ and ‘desire’ are sufficiently similar to ‘good’ and ‘repair’ to warrant such a union. The important thing to note is that the word for ‘good’ is one of the most changeable (volatile) sememes in the Philippines. Note how it differs in the otherwise cohesive Bisayan group: NBs-axis \*mayád, CBs-axis \*ma-ʔáyuh, EMn-axis \*ma-dayáv (this includes the SBs group). At the Central Philippine level: Tagalog *ma|búti* seems to be UNIQUE, while Bikol has \*ma|raháy.

<sup>17</sup>The ACD has PPH \*bawas ‘reduce, lower (as a price)’ but these semantics are best justified for a later time when monetary commerce set in. The ACD has thus far not allowed for glosses such as ‘subtract’ or ‘deduct’ which are basic mathematical operations that must have been known to the Austronesians.

<sup>18</sup>The final glottal stop in some languages may be pragmatic to intensify the veracity of one’s statement.

## Axis Relationships in the Philippines

- (8) NBs-axis \*ʔimáw ‘thus, like’ replaces PCP \*ʔámu: Akl, Pan, Dsp, Blk, Dtg, Sem, Rom, Asi’ ʔimáw.
- (9) NBs-axis \*ʔisará<sup>19</sup> ‘one’ replaces PAN \*isa, \*əsa, \*asa: Akl ʔisauyá, Kin, Pan, Blk, Sem, Kuy ʔisará; Han ʔisaraháy (in a children’s counting game), and Kgy ʔísta ~ ʔísyá.
- (10) NBs-axis \*túbiʔ ‘water’ [unexplained ?] replaces PAN \*daNum, GCP \*túbig;<sup>20</sup> Akl, Pan, Lok, Dsp, Asi’, Rom, Cap, Hil túbiʔ.
- (11) NBs-axis \*biṅáw ‘toothless’ replaces PAN \*ṅidaw: Akl, Blk, Pan, Asi’, Rom, Hil biṅáw; Han biṅaw ‘nick in the cutting edge,’ Tag biṅáw ‘notch, dent on cutlery edge.’
- (12) NBs-axis \*bítəs ‘stomach worm’ replaces PWMP \*bituk (see note in the ACD): Pan, Sem bítis, Akl, Rom bítos, Blk, Asi’, Hil bítus.
- (13) NBs-axis \*sabón ‘maybe, perhaps’ [DP] replaces PPH \*bakáq;<sup>21</sup> Kin, Pan, Sem, Kuy sabín, Akl, Hil, Rom sabón.
- (14) NBs-axis \*dúraʔ ‘lose, misplace’ replaces PMP \*qilaŋ: Kin, Blk dúraʔ, Kuy duraʔ, Akl dúuʔaʔ, Rom dúyaʔ, Hil dúlaʔ.

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<sup>19</sup>This is derived from PAN \*isa along with an enclitic discourse particle, either PPH \*da ‘already’ or PBs \*da ‘also’ [ZDS]. Lobel (personal communication, August 7, 2021) mentions a possible relationship to Masbatenyo, Central Sorsoganon ʔisád (with loss of the final vowel), which would still be part of this axis. However, the Cebuano phrase ʔusá ra is from a different etymon: \*əsa da. Meanwhile Zobel (personal communication, August 2, 2021) informs me that Nothofer (1994) has corresponding forms in the Sumatra area: Toba-Batak sada, Gayo, Simalur, Nias, Menatawai sara, which may contain the same enclitic \*da.

<sup>20</sup>Dempwolff (1926) proposed \*tubiR ‘depth of water’ or possibly ‘deep water,’ an etymology that seems not to have persisted.

<sup>21</sup>I would suggest PPH \*bakáʔ based on the languages cited in the ACD.

## The Archive

- (15) NBs-axis \*ʔindu ‘your’ [2PL.GEN] replaces PCP \*ʔinyu:<sup>22</sup> Sem, Kuy *ʔindu*, NBik *ʔindú*, Rom *ʔindo*, and Asi’ *ʔínro*.
- (16) NBs-axis \*kag ‘and’ [CONJ] replaces PAN \*maS, *Na*, PMP \*mai ~ \*may, PMP \*agu: Kin, Blk, Dtg, Hil, Rom, and Mas *kag*. Note also Akl, Asi’, Han, Baa Rinconada, Buhi *ʔag* covering the same axis area.
- (17) NBs-axis \*pakaʔisá ‘cousin’ replaces PWMP \*pisan, PPH \*pinsan: Kin, Pan, Asi’, Rom, Hil, Mas *pakaʔisá*.
- (18) NBs-axis \*paŋkaʔ ‘frog’ replaces PPH \*bakbak (or \*tukák): Kin, Blk, Sem, Kuy, Kgy *paŋkaʔ*; Han *paŋkáʔ*.<sup>23</sup>
- (19) NBs-axis \*búsul ‘seed’ [no established etymon]: Akl *búsou*, Blk, Pan *búsul*, Asi’ *búsuy*; Han *búsul* ‘pith.’
- (20) NBs-axis \*butíg ‘lie, deceive’ replaces PMP \*bali:<sup>24</sup> Blk, Kin, Kuy, Hil, Rin *butíg*.<sup>25</sup>
- (21) NBs-axis \*dagəʔəb ‘thunder’ replaces PAN \*dəRuŋ, \*dəRdəR, PMP \*ru(ŋ)guŋ, PWMP \*dələk, \*duRduR: Kin *dagíʔib*, Kgy *dagíʔib*, Kuy *dagíʔib*, Pan *dagúʔub*, Hil *dagúʔub*.

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<sup>22</sup>Ivatan *ʔinyu* (McF-NP) or *ʔinioʔ* (Reid 1971) is formally cognate, but nominative in function, so probably PPH \*ʔinyu.

<sup>23</sup>This ultimately comes from a monosyllabic root PSP \*pak [ZDS]: Tboli, Bilaan *fak*, Tiruray *ʔəʔak*; Aklanon, Asi’, Romblomanon, Ilonggo/Hiligaynon, Masbatenyo *pakáʔ*, Kalamianic *talipakaʔ*, Tagalog, Bikol *palakáʔ*. I agree with Blust’s note under NOISE ‘frog’ for Bashiic *palaka*; neither Itbayaten nor Ivatan have the correct reflex of \*l, plus no northern Philippine language (McF-NP#460) supports any etymon beyond PPH \*bakbak in the ACD.

<sup>24</sup>This particular gloss seems to elicit microgroup agreements. Besides this North Bisayan axis and a Bis-Bik axis \*buwaʔ in the ZDS, there is evidence for Greater Central Philippine \*limbuŋ, Proto-Bisayan \*bakak, Proto-Mansakan \*galuʔ, Northern Bikol \*putik, Southern Bikol \*putŋəyən, and Tausug *putiŋ* just within the central Philippines.

<sup>25</sup>Reid (personal communication, July 28, 2021) called to my attention Isnag *mag|busid* ‘to lie.’ If this is genuinely cognate (and not a loan or accidental resemblance), then this might raise the reconstruction to PPH \*butíg. However, there is no correspondence between Isnag [-d] and the North-Bisayan axis [-g] (Lobel, personal communication, August 7, 2021).

- (22) NBs-axis \*ʔuyahón ‘face’<sup>26</sup> replaces PPH \*ʔáŋas or \*walóŋ: Pan ʔuyahín, Akl, Blk, Rom ʔuyahón; borrowed by Kal uyáin.
- (23) NBs-axis \*balón ‘drunk’ replaces PAN \*buSuk, PMP \*buhuk: Kuy balín, Rom bayón; cf. Msk balón, Dbw baəŋ ‘poison’; Itb mavaəŋ, Ibt mavaəŋ, Kakidugen Ilt bi:lín ‘black,’ other Ilt dialects balín (Liao, personal communication, August 3, 2021).

## 2.2 Southern Luzon Axis

This axis affects Tagalog and languages in the Central Luzon subgroup which include Sambalic and Kapampangan, Remontado/Hatang-Kayi, Casiguran Dumagat Agta, Bulalakawnon, Bikol, and Hanunoo.

- (24) SLz-axis \*batáʔ ‘stench, bad odor’ replaces PMP \*bahuʔ: Sbl, CSor, Naga, Leg, Mir, Lib, Rin, Buhi \*batáʔ, WABik bitíʔ.
- (25) SLz-axis \*damúlag ‘carabao’ replaces PAN \*qaNuaŋ, or widespread maverick proto-form †karabáw: Kpm, Bol, Sbl, Naga damúlag, Bot damuwag, Mir, WABik, Lib, Rin, Buhi damulág.
- (26) SLz-axis \*ʔalikabúk ‘dust’ replaces PMP \*Rabuk, PWMP \*qabug ~ \*abuR: Kpm, Bot, Ayta Mag-Indi, CDAgta ʔalikabúk, Tag, Blk ʔalikabók.

<sup>26</sup>As Blust points out in his note to PPH \*aŋas: “The semantic category ‘face’ seems to have been unusually unstable, and was filled by the Sanskrit loanword *rūpa* ‘semblance; form; look’ in major lowland languages such as Ilokano (*rūpa* ‘face’), and even in remote mountain languages (e.g., Bontok *lópa*, Ibaloi *dopa*) through the medium of Malay.” This also applies to Tagalog *mukháʔ*, which may be reflected in Cagayan Valley reflexes of \*mukat.



Figure 2: Southern Luzon Axis

- (27) SLz-axis \*dikút ‘grass’ replaces PAN \*udu, PMP \*zukut ~ \*dukut: Kpm, Bot, Sbl *dikút*, Lib, WABik *rikút*.<sup>27</sup>
- (28) SLz-axis \*salaR ‘egg’ replaces PAN \*qiCeluR: Mir, Lib, WABik *salág*, Bol, Sbl *sálay*; cf. PMP \*salaR ‘nest’ in the ACD.
- (29) SLz-axis \*ʔabála ‘delay’ replaces PPH \*liwag: Kpm, Tag, Naga *ʔabála* ‘delay,’ Han *ʔabála* ‘bother, molest.’

<sup>27</sup>Zobel (personal communication, August 2, 2021) points out: “This is similar to PMP \*zukut, and reminds me of the variation in PMP \*tiduR, PAN \*tuduR ‘sleep.’”



- (30) SLz-axis \*bəRŋi ‘night’:<sup>28</sup> Kpm *bɛ:ŋi*, Naga, Leg, Vir *baŋgi*.
- (31) SLz-axis \*kadáyum ‘needle’ affixed form replacing PAN \*zaRum, PPH \*dáRum: Iry *kadáyum*, Bot *karayim\**, Kpm *karáyum* > Tag *karáyom*.
- (32) SLz-axis \*tiʔris<sup>29</sup> ‘urine’ replaces PAN \*iSiq ~ \*iSəq: Naga *tiʔris* (slang), Tdy *tilís*, Png *sírit*; Han *tiʔris* ‘millipede secretion’; cf. PPH \*tiq(e)ris ‘urine; to urinate’ in the ACD.
- (33) SLz-axis \*ʔaləp ‘hungry’ replaces PMP \*bitil, PWMP \*bitin, PSP \*Rutəm: Rin, WABik, CDAgta *ʔaləp*.
- (34) SLz-axis \*bihíraʔ ‘seldom’ replaces PWMP \*zaRaŋ [ACD], PPH \*lakáʔ [ZDS]:<sup>30</sup> Tag, Bikol, Han *bihíraʔ*.<sup>31</sup>
- (35) SLz-axis \*bilís ‘fast’ replaces PAN \*alikas, PMP \*bakas, PPH \*kaskas, ROOT \*kas: Tag, Kpm, Bot *bilís*.

<sup>28</sup>PAN \*Rabiqi [ACD], PPH \*Rabíʔih [ZDS] vs. PMP \*bəRŋi ‘night.’ From the Philippine point-of-view \*bəRŋi is only attested in Bikol languages and in Kapampangan, hence the possibility that this form was innovated in the Southern Luzon area before it spread out of the Philippines and acquired wide representation in Western Indonesia and Oceanic. \*Rabíʔih [ZDS] clearly originated in Taiwan and is the most retained item in the meaning ‘night’ throughout the Philippines. Zobel (personal communication, August 2, 2021) prefers to think of \*bəRŋi “as a PMP innovation that happens only to be retained in the S[outhern] Luzon area.”

<sup>29</sup>The ACD proposes that this is PPH \*tiq(ə)ris ‘urine; to urinate,’ but the northern languages reflect PNP \*ʔisbu (metathesis of \*siʔbu in the Palawan languages), while a few retain PPH \*ʔihəq along with most languages of the south. This SLz-axis form joins five other innovations throughout the Philippines (NCr \*pasəg, Bilic \*təreʔ, Danao and Central Manobo \*tiʔtiʔ, Botolan \*dúday, Bashiic ʔupis) (see ‘urine’ in ZDS).

<sup>30</sup>It is only Aklanon *uyakáʔ* ‘sparse’ and Romblo-manon *lakáʔ* ‘few’ that meet the semantics of this etymon; in the northern Philippine languages it tends to mean ‘cheap.’

<sup>31</sup>Zobel (personal communication, August 2, 2021) notes that this word (a) being trisyllabic, (b) has medial *r*, and (c) ends in glottal stop is likely to be a borrowing, but there are no Spanish, Malay, or Sanskrit candidates thus far.

## The Archive

- (36) SLz-axis \*búku ‘young coconut’ [no established etymon]: Isi (Tag loan<sup>32</sup>), Kpm *búku*, MlaTag *búko*.<sup>33</sup>
- (37) SLz-axis \*diláw ‘yellow’ replaces or contrasts with PPH \*duláw: Tag, CDAgta, Han *diláw*, Kpm *diló*.<sup>34</sup>
- (38) SLz-axis \*saká ‘and, also’ [no established etymon]: CDAgta, Naga *saká*, Ayta Abellen *haka*, Tag *tsaká* = *?at saká* ‘afterwards, and then’ (posited as PPH in the ACD).
- (39) SLz-axis \*páwəs ‘sweat’ replaces PMP \*qatiŋ, PWMP \*liŋ(ə)qət, PSP \*hulas: Kpm *páwas*, Tag *páwis* (borrowed by Remontado/Hatang-Kayi and CDAgta).

## 2.3 Eastern Mindanao Axis

This represents a sequence of unique distributions among South Bisayan, Mamanwa, Mansakan, Danao, Subanen, and various members of Manobo, mostly located in the eastern area of Mindanao (except Subanen which clearly had moved west). It was this axis that led Gallman (1997) to propose a “Proto East Mindanao” (which is demonstrably an axis rather than a subgroup).

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<sup>32</sup>Reid (personal communication, July 28, 2021) notes: “Isinay *búku* is clearly a borrowing from Tagalog, because \*k > glottal stop in all versions of Isinay.” There is a PSP \*bətəŋ in the ZDS which is an accent pair of the verb ‘pull’ that may offer some etymological precedent, but nothing thus far for any higher level.

<sup>33</sup>Lobel (personal communication, August 27, 2021) points out that outside of Manila Tagalog, *búko* is the ‘coconut spud’ too young to have any water inside, while *múra?* is the non-Manila Tagalog form meaning ‘young coconut (old enough to have water inside).’ So, it is the semantics of the Manila Tagalog form that has spread.

<sup>34</sup>The ACD proposes PPH \*diláw and includes Ilokano *diláw* ‘turmeric’ (which is marked as a Tagalog loan in Rubino [2000]). So long as Ilokano is a loan, this particular axis relationship remains valid.

## Axis Relationships in the Philippines



Figure 3: Eastern Mindanao Axis

- (40) EMn-axis \*dayáw ‘good’ replaces PMP \*ma|pia, PPH \*ʔupiya: Kam, Boso, Tdg *ma|dayáw*, Msk *dáyaw*, Mmw *ma|dazaw*, Klg, Tagakaolo, Car, Kbs, Mandaya, Isamal *ma|dyaw*, Sur, Jaun-Jaun *ma|rajáw*, But *ma|dyáw*, Ata *ma|doyow*, Dbw *ma|diyáw*.<sup>35</sup>

<sup>35</sup>This represents a semantic shift from PPH \*dáyaw ‘to praise, to honor’ [ZDS] to a generic meaning of ‘good.’

## The Archive

- (41) EMn-axis \**sidan* ‘they’ [3PL.NOM] replaces PMP \**sida* with addition of final nasal: Kam *sirán*, Mmw, Mar *siran*, Msk, Isamal, Boso, Kbs, Mandaya, Klg, Mgd *silan*; Subanen *ilan*.
- (42) EMn-axis \**ʔandaw* ‘day’ phonological change of PP<sub>H</sub> \**qaljaw* (with nasal cluster introduced): WBM, Ili *ʔandəw*, Iln<sup>36</sup> *ʔəndəw*, CSub *gindəw*, WSub *gondow*, Mar *daondao*.<sup>37</sup>
- (43) EMn-axis \**ʔəsəg* ‘male, man’ replaces PAN \**Ruqanay*, PMP \**laki*, PWMP \**lalaki*: Msk, Boso, Kbs, Mandaya *ʔisig*, But, Kam, Car *ʔusúg* ‘man, male’; Klg, Isamal, Tagakaolo *ʔisig* (also means) ‘husband.’
- (44) EMn-axis \**ʔallaŋ* ‘slave’ replaces PWMP \**qudipən*: Msk, Mandaya, Kbs, Boso, Tagakaolo, Klg, Dbw, SarMb *ʔallaŋ*.<sup>38</sup>
- (45) EMn-axis \**báŋaʔ* ‘bite’ replaces PAN \**kaRaC*: Sur, Tdg, Jaun-Jaun, But, Kam *báŋaʔ*, Mmw, SarMb *baŋaʔ* ‘bite,’ WBM *baŋaʔ* ‘carry in the mouth.’
- (46) EMn-axis \**buyag* ‘old woman’ [no established etymon]: Msk, Tagakaolo, Klg *buyag*; Ata, Tig *buyag* ‘old person,’ Dbw *buyag* ‘female.’
- (47) EMn-axis \**baʔal* ‘make’ replaces PMP \**buhat*: WBM, Mar *baʔal*, Subanen *baal*, and Mgd *bal*.

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<sup>36</sup>I have an SIL booklet entitled *A Vocabulary of Central Mindanao Manobo* (Elkins & Elkins 1954) which is available at <<https://www.sil.org/resources/archives/24201>>. This covers dialects identified within as Kirinteken and *Ilianon*, but would now encompass what is currently called *Ilianen*.

<sup>37</sup>This is clearly either PAN \**qajaw* or PMP \**qalejaw* with a nasal increment. This NC form has persisted in Minahasan (Tonsea, Tombulu, Tontemboan, Tonsawang) *əndo*, Maʼanyan *andraw*, and Malagasy *andro*, as well as Ngaju Dayak *andau* and Javanese *andon*.

<sup>38</sup>The phonotactics of some Mansakan languages do allow consonant gemination of apicals (*dd*, *nn*, *ll*), so this instance of gemination may be from a possible \**ʔadlaŋ* or \**ʔanlaŋ* (which is otherwise unattested).

- (48) EMn-axis \**daɣarha* ‘chest’ replaces PAN \**dəbdəb*: Kam *daɣarha*, But *daɣá:ha*. (Possibly from PAN \**daSdaS* ‘chest,’ but with an <*ag*> infix, i.e., \**daɣahdah* [with metathesis of *d* and *h*].)

## 2.4 Northern Luzon Axis

This represents innovative intrusions among Ilokano, Cagayan Valley, Central Cordilleran, and Bashiic languages.

- (49) NLz-axis \**gusín* ‘harelip’ replaces PPH \**buŋíʔ*: Ilk, Ibg, Gad, Yog, Mlw, Itg,<sup>39</sup> Manabo,<sup>40</sup> Luba,<sup>41</sup> KnkN *gusín*, KnkS *gúsín*, Blw *guhɛŋ*.
- (50) NLz-axis \**kímat* ‘eyelashes’ replaces PWMP \**qizəp*, PPH~PSP \**pidák*: Isg, Gad, Mlw, Kal, Luba *kímat* [McF-NP#009], Atta *kima:ʔ*, CCAgta *kiʔmat*, Gad *kimit* [Rd#97], Itg *kimát* [Rd#98], Kia *ʔímat*, Blw *ʔémat*.
- (51) NLz-axis \**ʔayát* ‘love’ [no established etymon]: IbgP, Ilk, Mlw *ʔayát*, Luba *min|ʔayát*, Itw *maŋ|ayát*, Itg *ʔag|ayát*, Manabo *ʔayat|ón*, IbgT *maŋ|ayáʔ*.<sup>42</sup>

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<sup>39</sup>Itneg data in this paper is drawn from either Reid (1971) or McFarland (1977).

<sup>40</sup>The Manabo in McFarland (1977) is actually Masadiit Itneg (Himes, unpublished).

<sup>41</sup>The Luba in McFarland (1977) is actually Northern Kankanaey (Himes, unpublished).

<sup>42</sup>This is a homonym of PWMP \**ayat* ‘threaten, confront violently’ in the ACD.



Figure 4: Northern Luzon Axis

## Axis Relationships in the Philippines

- (52) NLz-axis \*lūmin<sup>43</sup> ‘cold’ replaces PMP \*diŋdiŋ ~ \*diŋin, PSP \*ramíg:<sup>44</sup> IbgP, Atta *na|lummin*, IbgT, Mlw, Itw *na|limmin*, Manabo *na|lammin*, Isg *na|lmin* (unital syncope).
- (53) NLz-axis \*pǎlut ‘cockfight’ replaces PWMP \*sabuŋ: Yog *pǎllut*, Gad *mǎppǎllut*, IbgP *pǎllu?*, Ilk, KnkN&S *pallut*.<sup>45</sup>
- (54) NLz-axis \*kaRayán ‘river’ possibly replaces etyma like PAN \*iluR, \*qaluR, PMP \*wahiR: Ilk *karayán*, CCAgta *kaɣayan*, Gad *kayán*, Luba *ka:yan*, Manabo *kayyán*.<sup>46</sup>
- (55) NLz-axis \*layús ‘flood’ replaces PMP \*bahaq: Ilk, Gad, Manabo, Luba, Itg *layús*.
- (56) NLz-axis \*sabáli ‘other, different’ replaces PAN \*duma, PWMP \*laʔin, PPH \*ʔibáh: Ilk, Manabo, Itg, Blw *sabáli*, Isg *saballi*.
- (57) NLz-axis \*lukmæg ‘fat’ replaces PAN \*SimaR, PWMP \*tabəq: Ilk *lukmég*, Luba *lukmíg*, Bontok *lokmíg*, Isg *luʔmíg* [McF-NP#201], *luʔmág* [Rd#103].

<sup>43</sup>The vocalism here is difficult and suggests a FORMULAIC reconstruction. I assume the short *u* (*ü*) found in Atta and Pamplona Ibanag is original, followed by syncope as in Isnag, with insertion of an *a* to echo the vowel of the prefix in Manabo and schwa insertion in Tuguegarao Ibanag, Malaweg, and Itawit.

<sup>44</sup>The ACD has PPH \*lamíg ‘cold’ but only cites Tagalog and Casiguran Dumagat Agta. The ZDS has (among others) Kinaray-a, Bulalakawnon, Datagnon, and Hanunoo *ma|ramíg*, and Aborlan Tagbanwa, Batak *ma|ramig*.

<sup>45</sup>It is assumed that the Ilokano and Kankanaey forms are borrowed from or influenced by Ibanag, with the first vowel interpreted as [a]. Ibaloy *paʔdut* is probably connected but cannot be explained; it is not likely that the glottal stop is original.

<sup>46</sup>The appearance of place names in the south such as *Cagayan de Oro*, *Cagayan de Tawi-Tawi*, and *Cagayancillo* complicates the issue, but in none of the languages spoken in these areas does it translate the gloss ‘river.’

## The Archive

- (58) NLz-axis \*salʔit ‘lightning’ replaces PAN \*likaC, PMP \*kilat: Isg, Ilk *salʔit*; Itg, Kal *silʔit* (assimilation of *a > i*).
- (59) NLz-axis \*suʔpit ‘narrow’ replaces PAN \*kipit, PMP \*kiput: Mlw *su:pit*, Kal *man|su:pit* [Rd#190], *na|su:pit* [McF-NP#524], Manabo; Isg *na|tuʔpit*.

## 2.5 Central Luzon Axis

This represents cognates mainly drawn from the Central and South Cordilleran subgroups, with encroachments further south into Sambalic, Kapampangan, and Tagalog.

- (60) CLz-axis \*púkəl ‘bone’ replaces PAN \*CuqəlaN, PMP \*tuqəlan, PWMP \*tuqəlaŋ: Kia *púkul*, Amg *puʔól*, Btd *púʔal*, Byn *púʔol*, Blw *póʔal*, Bontok *pókil*, Knk *póki* ‘shoulder’; Ibl *pukil*, Kyp *pukil*, Png *pukil* ‘bone,’ Kly *pukəl* ‘knee’; CDAgta *pukil* ‘thigh.’
- (61) CLz-axis \*tágtag<sup>47</sup> ‘run’ [no established generic; PAN \*laRiw ‘run away’]: Isg *tagtag* ~ *man|agta:g*, Bontok, Itg, Isi *tagtág*, Itg, Luba, KnkS *man|agtág*, Amganad, Btd *t<um>agtág*, KnkN *min|tagtag*; cf. Ilokano *tagtag* ‘walk with jerky or heavy gait.’
- (62) CLz-axis \*ʔágaŋ ‘hungry’ replaces PMP \*bitil, PWMP \*bitin, PSP \*Rutəm: Amg *maʔ|ʔágaŋ*, Btd *ʔagáŋ|an*, Byn *ʔ<in>ágaŋ*,

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<sup>47</sup> *Tágtag* ‘run’ should have (underlying) stress on the first syllable. Suffixed forms have a long vowel in the second syllable (Reid, personal communication, July 28, 2021).



## Axis Relationships in the Philippines

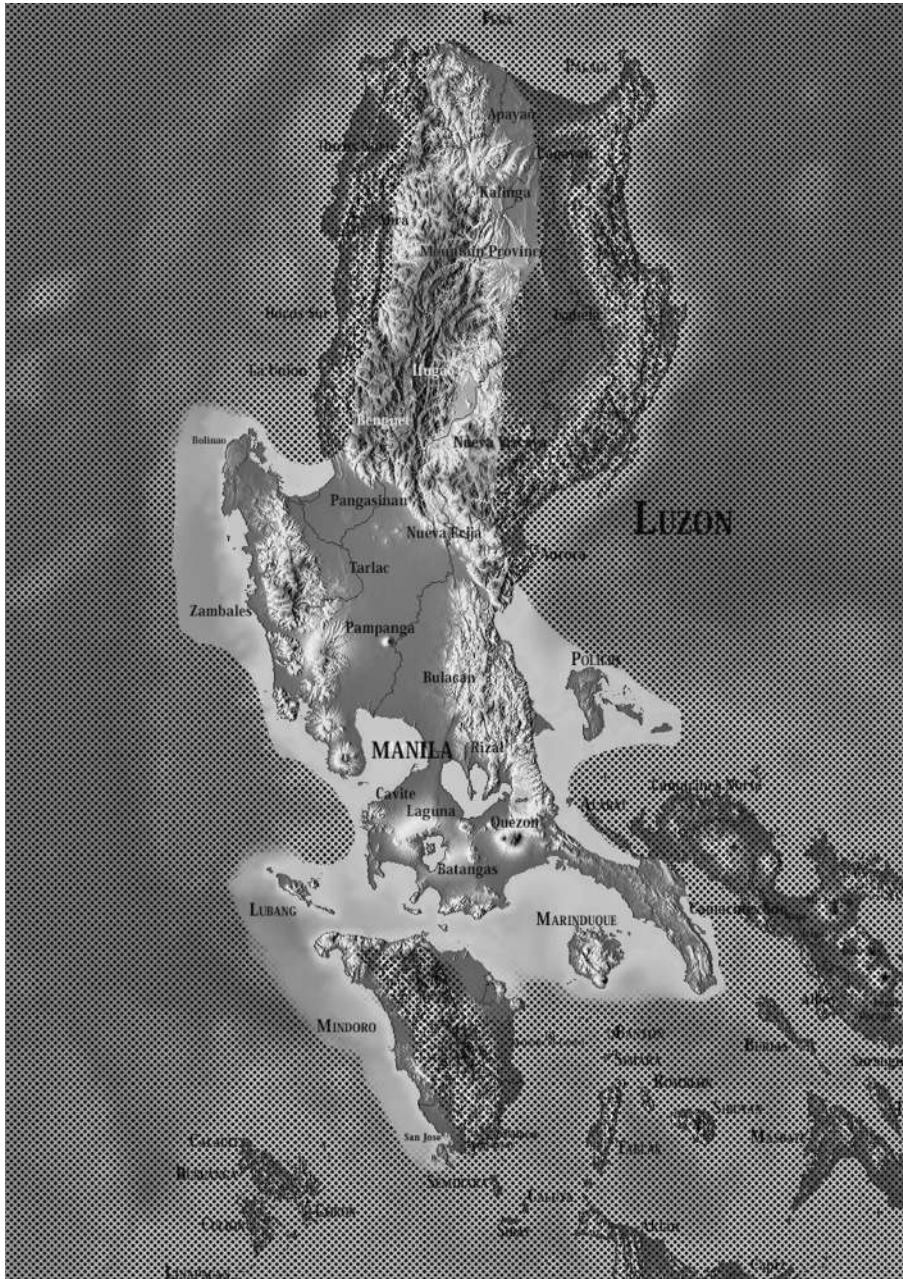


Figure 5: Central Luzon Axis

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- Kia *na|ʔagáŋ|an*, Kyp *ʔagan*, Ibl *na|ʔágan*, KnkS *da|gáʔan* (metathesis) [McF-NP#136].
- (63) CLz-axis \**bəlát* ‘skin’ replaces PMP \**kulit*: Kyp *bilat*, Kly *bəlat*, Ibl *bidat*, Kia *bolát*, Kpm > Tag *balát*.
- (64) CLz-axis \**bətík* ‘run’ [no established etymon; PAN \**laRiw* ‘run away’]: Ibl *man|bitík*, Png *ʔon|batík*, Kyp *bitik*, Kly *betik*; Amg, Kia *b<um>tik*.
- (65) CLz-axis \**dagám* ‘wind’ replaces PMP \**haŋin*: IsiB *dakóm*, KnkN&S, Png, Kyp *dagím*, Ibl *ca:gím*.
- (66) CLz-axis \**gawáʔ* ‘do, make’ replaces PMP \**buhat*: Bot, Sbl, Kpm > Tag *gawáʔ*, Png *gawá*; Bol *maŋwaʔ*; Bol *ga|gawáʔ* ‘farm, field.’
- (67) CLz-axis \**taláw* ‘star’ replaces PAN \**bituqəŋ*: Blw, Bontok, Luba, KnkN&S, Ibl *taláw*, Kyp *talaw*.
- (68) CLz-axis \**bansaR* ‘floor(ing)’ replaces PMP \**saləR*, PPH \**daqtaR*: Manabo, Luba, Kal, Itg *banság* (stereotyped Philippine \**g*), Bontok *bansál*; cf. Ilk *banság* ‘kitchen rack.’
- (69) CLz-axis \**bútəŋ* ‘drunk’ replaces PAN \**buSuk*, PMP \**buhuk*: KnkN&S *na|bútəŋ*, Kia *na|bútoŋ*, Isi *na|bútoŋ*,<sup>48</sup> Ibl *ʔi|bútəŋ*.
- (70) CLz-axis \**duntug* ‘mountain’ replaces PAN \**bukij*, \**buləd*: Btd, KnkS, Kyp, Kly *duntug*, Ibl *contog*.
- (71) CLz-axis \**kəduR* ‘thunder’ replaces PAN \**dəRuŋ*, PMP \**ru(ŋ)guŋ*, PWMP \**dələk*, \**duRduR*: CDAgta *kídúh*,

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<sup>48</sup>Reid (personal communication, July 28, 2021) points out that the entry in McFarland (*nabu:tung*) was in error; it should be *bútoŋ*.

## Axis Relationships in the Philippines

Png *karúl*, Tag *kulúg*; cf. Bol *kudúr*, Sbl *kurúl* with reflexes of \*r instead of \*R, indicative of a loan.

- (72) CLz-axis \*lətég ‘straight’: Bontok *litég*, KnkN *min|litég* [Rd#290], *min|li|litég* [McF-NP#473], Ibl *na|litég* (syncope), Kyp *nan|litég*.
- (73) CLz-axis \*ɲidól ‘dull’: Kal *na|ɲiddot* [McF-NP#472], Isi *na|ɲi:dal*, Ibl *ɲi|ɲiril* [Rd#083]; cf. Kyp *na|ɲilud*, Ilt *ɲilud*.
- (74) CLz-axis \*buliñét ‘dark’: KnkN *mim|buliñit*, KnkS *ma|buliñit*, Ibl *ɲam|buliñit*; Png *ɲam|biluñit* (metathesis).
- (75) CLz-axis \*sikýad ‘kick’: KnkS *sikyád|an*, Kia *hikyád|an*, Ibl *tikjad*, Kallahan *hikyad|an*.
- (76) CLz-axis \*ɲadpal ‘palm (of hand)’ syllable inversion or metathesis of \*pálad: Kyp *ɲadpal*, Kal *ɲagpal* [McF-NP#34], Kal *ɲappal* [Rd#210], Knk *ɲadpa*.
- (77) CLz-axis \*ɲimúk ‘mosquito’ replaces PMP \*ñamuk ~ \*lamuk: IsiB *ɲimúk*, IsiD *ɲímu?*, Ibl *ɲimuk*, Kyp *ɲimuk*.
- (78) CLz-axis \*muyún ‘forest, woods’: Kia *muyún*, Amg *muyón*, Kly *muyun*.
- (79) CLz-axis \*tumbuŋ ‘anus’:<sup>49</sup> Bol, Png *tumbún*, Tag *tumbón*.
- (80) CLz-axis \*maʔún ‘good’ replaces PMP \*pia: Bol, Png *maʔún*.
- (81) CLz-axis \*rəbrəb ‘drown’ replaces PMP \*ləməs, PPH \*limós: Isi *ni|loblob*, Bol *maʔi|ribrib*.

<sup>49</sup>Cf. PWMP \*tumbuŋ, ‘anus’ in the ACD. I suspect this is a loan from Malay, but the distribution in the Philippines suggests an axis relationship based on the loan.

## 2.6 Palawan-Kalamian Axis

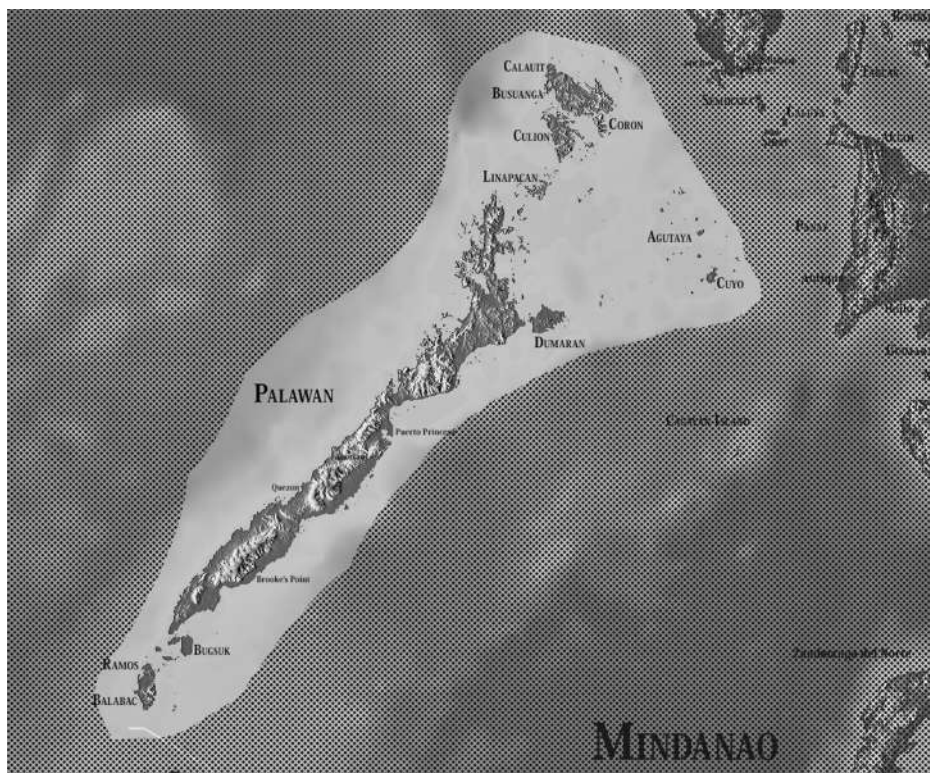


Figure 6: Palawan-Kalamian Axis

This is another axis limited to an insular area—Palawan and the Calamian Islands—with the Kalamianic and Palawanic subgroups. Kalamianic is an isolate, but Palawanic may be part of the Greater Central Philippine subgroup proposed by Blust (1991). The co-existence of these two very different language groups in the greater Palawan area appears to have led to these local innovations. Data for the Palawanic languages comes from Thiessen (1980).

## Axis Relationships in the Philippines

- (82) Pal-Kal-axis \*qaʔduŋ ‘sit’: Abr *ʔaʔduŋ*, Btk,<sup>50</sup> Mlb, Tau’t Bato, Quezon *ʔaduŋ*, Pal *ʔaruŋ*, Kal *karuŋ* ‘sit.’
- (83) Pal-Kal-axis \*bəlag ‘not so’ [NEG] replaces \*bəkən: Agy, Krm, Pal, Mlb *bilag*; Abr *bilag* ‘different.’
- (84) Pal-Kal-axis \*luak ‘plant, dibble’ [v]: Kal, Agy, Krm, Btk, Abr, Pal *luak*.
- (85) Pal-Kal-axis \*dulduR ‘thunder’ replaces PAN \*dəRuŋ, \*dəRdəR, PMP \*ru(ŋ)guŋ, PWMP \*dələk, \*duRduR: Kal, Agy *duldul*, Abr, Btk, Pal *duldug*.<sup>51</sup>
- (86) Pal-Kal-axis \*kayəg ‘harvest’ replaces PAN \*qaniS, PMP \*qanih, PWMP \*aRani: Abr *kayig*, Btk *kayid\**, Pal *kʌig*, Kal, Agy *ʔayig*.
- (87) Pal-Kal-axis \*kumbaʔ ‘lungs’ replaces PAN \*baRaq: Kal, Krm, CTbw, Abr *kumbaʔ*.
- (88) Pal-Kal-axis \*tagək ‘blood’ replaces PAN \*daRaq: Kal *tayik*, Krm, Btk, CTbw *tagik*.
- (89) Pal-Kal-axis \*ʔalaŋ ‘buy’ replaces PAN \*bəli: Kal *alaŋ*, Abr *paŋ|alaŋ*, Btk *ʔalaŋ*; cf. Pal *ʔələn*.

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<sup>50</sup>Although there are other Austronesian languages named “Batak” (Toba Batak, Karo Batak, etc.), this is the only such variant within the Philippines. So within the confines of this paper, “Batak” means “Palawan Batak” or “Batak of Palawan.”

<sup>51</sup>The ACD has PWMP \*duRduR ‘thunder’ (in support of which is Kalamian Tagbanwa *duldul*) and PPH \*duldul ‘thunder’ (in support of which is Agutaynen *doldol*). The inclusion of the Palawan forms reveals this to be the unique etymon \*dulduR proposed here (possibly a composite of two monosyllabic roots \*dul and \*duR).

## The Archive

- (90) Pal-Kal-axis \*ha-lawid<sup>52</sup> ‘far’ replaces PMP \*zauq [ACD] ~ \*diauq [Zorc (2019: 129–131)], PPH \*(h)a-dayúq: Kal, Abr, Btk *ʔalawid*.
- (91) Pal-Kal-axis \*kuldap ‘lightning’ replaces PAN \*likaC, PMP \*kilat: Agy *kuldap*, Kal, Btk *kudlap* (metathesis).
- (92) Pal-Kal-axis \*binlay ‘raft’ replaces PMP \*Rakit: Kal, Abr *binlay*.
- (93) Pal-Kal-axis \*diʔput ‘short’: Kal *diput*, Btk *diʔput*.
- (94) Pal-Kal-axis \*kaʔi ‘where?’ [QW]: Btk *kaʔi*, Kal *ʔay|pa, ʔay|ra*.
- (95) Pal-Kal-axis \*kandidiʔsiŋ ‘little finger ~ toe’: Btk *kandidiʔsiŋ*, Kal *kandirisin|an*.
- (96) Pal-Kal-axis \*luʔluy ‘earthworm’: Btk *luʔluy*, Kal *luluy*.
- (97) Pal-Kal-axis \*paraŋat ‘housefly’: Kal *palayaŋat*, Abr *paraŋat*.

## 2.7 Palawan-Mindoro Axis

This axis formed as a result of relations between the peoples of Palawan and Mindoro. It involves the North and South Mangyan, Kalamianic, and Palawanic subgroups.

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<sup>52</sup>Although none of these languages preserve \*h, the \*ha- (prefix of measure) is well established in Cebuano, Waray, Central and Southern Sorsogon, Naga, Viracnon, and Northern Catanduanes where *ha-* (adjectives of measure) contrast with *ma-* (all other adjectives). The ACD proposes PWMP \*alawid with cognates in Maʼanyan, Malagasy, Samihim, and Dusun Witu. Therefore, this axis can only be preserved if this word originated from the greater Palawan area and was brought to Borneo later.

## Axis Relationships in the Philippines

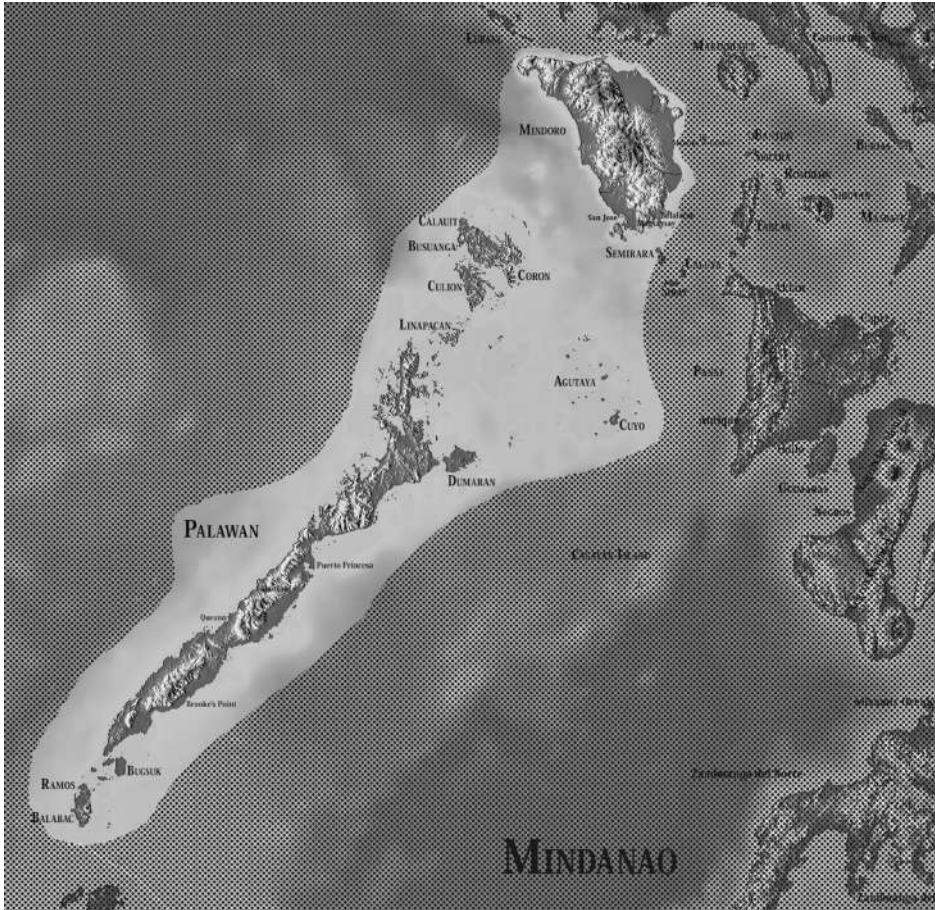


Figure 7: Palawan-Mindoro Axis

- (98) Pal-Mind-axis \**ha|buat*<sup>53</sup> ‘long; tall’ replaces PMP \*(h)anaduq or its doublets PWMP \*(h)adaduq and \*(h)a(n)duq: Btk *?abuat*, Abr *?abuat|ay*, Pal *m|abwat*, Kal, Krm *?abwat*,

<sup>53</sup>This probably has the adjective of measure prefix *ha-*. The ACD has this as PWMP \**abuat* ‘long (of objects)’ with cognates in several Bornean languages. It is proposed that this word was developed within this axis before it left the Philippines.

## The Archive

Agy *ma|abwat* ‘long’; Iry, Tdy *ʔabwat*, Aln *ma|abwat*, Buh *abuat*, Han *ʔabwát* ‘tall.’

- (99) Pal-Mind-axis \*ti ‘yon; that, those (at a distance), over there’<sup>54</sup>  
[DEIC-3-ROOT]: Abr, Btk, Pal *ʔi|ti*, Kal *a|ti|ʔi*, Agy *a|si|iʔ*, Han *ʔá|ti*, *ti|da*, *si|ti*, Buh *ti|ya*, Aln, Tdy *ʔa|tí*.
- (100) Pal-Mind-axis \*bílug ‘body’: Btk, Abr, Pal *bilug*, Han *bilug*, Buh *ha|bilug|an*, Tdy *bilug|án*, Aln *bilúg|an*.<sup>55</sup>
- (101) Pal-Mind-axis \*busliʔ ‘lie, deceive’: Kal *bukliʔ*, Agy, Krm *tuʔliʔ* (dissimilation), Iry *busliʔ|en*, Aln *busli|yon*.
- (102) Pal-Mind-axis \*ʔaŋbəʔ ‘rat’: Abr, Btk *ʔaŋbiʔ*, Han *ʔaŋbúʔ(?)*, Buh *ʔaŋbo*. An assimilated nasal cognate is also found in the North Bisayan axis: Pan, Sem, Kuy *ʔambiʔ*, Blk *ʔámbuʔ*, Asi’, Rom *ʔámboʔ*.
- (103) Pal-Mind-axis \*kanya ‘he/she’ [PRO-3-NOM] replaces PAN \*ia, \*si ia, PPH \*siyá: Abr, Btk, Han *kanya*, Buh *hanya* (shift from oblique to nominative).
- (104) Pal-Mind-axis \*tugdaʔ ‘plant = dibble’ [v]: Kal, Abr, Btk, Aln *tugdaʔ*.<sup>56</sup>
- (105) Pal-Mind-axis \*hampaŋ ‘say, speak’: Han *hampaŋ*, Btk, Abr *ʔampaŋ*; cf. PBs \*hampaŋ ‘play.’

<sup>54</sup>The ACD has PAN \*ti and PAN \*i-ti as a first-person or proximate deictic (as in Bunun *iti*, Botolan *bayiti*), so it is the shift to the distal sense that makes this unique. I assume that the Kenyah (Long Dunin) and Kayan (Uma Juman) cognates were exported to Borneo. Ilokano has *ʔiti* as a case-marking particle (which probably developed from the deictic). Nevertheless, these problems admittedly weaken the case for this proposal.

<sup>55</sup>This is a semantic shift from PSP \*bílug ‘round’ and GCP \*bílug ‘whole; solid’ [ZDS].

<sup>56</sup>The ACD has PWMP \*tuzaq ‘thrust downward with sharp implement’ with Malay and Tae’ witnesses, so this may suggest \*tuRzaq. However, the Kalamianic evidence does not support either \*R or \*q.



- (106) Pal-Mind-axis \*kawa ‘you’ [2SG.NOM]: Kalamianic \*yawa?  
(< \*i-kawa), CTbw, Tdy *kawa*.
- (107) Pal-Mind-axis \*ta|mi ‘we’ [PRO-1&2-NOM]: Abr, Btk *tami*,  
Buh *tam(i + clitic)* (etymologically bimorphemic).
- (108) Pal-Mind-axis \*karasyaw ‘deer’: Kal *kalasiaw*, Han *karas(i)yáw*;  
Bulalakaw *karasyaw* is assumed to be a loan from Hanunoo.
- (109) Pal-Mind-axis \*bagbag ‘sink; drown’: Btk *bagbag* ‘sink’;  
Han *bagbag* ‘drown.’

## 2.8 Southern Mindanao Axis

This axis involves interchanges among the Southwestern Mindanao languages (Tboli, Koronadal, and Sarangani Bilaan, Tiruray ~ Teduray), Southeastern Mindanao (Bagobo Klata), and members of the Greater Central Philippine subgroup such as Tagalog (when pre-Tagalog was still this far south),<sup>57</sup> Danao, and Manobo.

- (110) SMn-axis \*ʔabas ‘measles’: Tir, Tboli ʔabas ‘measles,’ Mar *abas*  
‘chicken pox.’
- (111) SMn-axis \*ʔagit ‘coconut: unripe’: Ira, Mgd, Tboli ʔagit,  
Kor ʔagit, Ili ʔahit.
- (112) SMn-axis \*ʔamaR ‘tomorrow’: Mar *amag*, Tir *n|amag*  
(stereotyped Philippine \*g); cf. Kalamian Tagbanwa *andamal*,  
Batak ʔindamar.

<sup>57</sup>At present this must be considered a tentative hypothesis backed up by two SMn-axis forms \*ma|samá? ‘bad’ and \*lahát ‘all’ (see below). While these cannot be considered compelling evidence, further study may bear this out.



Figure 8: Southern Mindanao Axis

- (113) SMn-axis \*ʔamas ‘banana sp.’: Tboli, Tir, WBM ʔamas.
- (114) SMn-axis \*bagakwan ‘back (anatomical)’: Klg *bagakwan* ‘back,’ Kam *bakagwan* ‘hips,’ Dbw *bagakwan* ‘spine,’ Tboli *kwan*.
- (115) SMn-axis \*baluʔ ‘sell’: Tboli *h<sub>l</sub>|baluʔ*, Sangir *baluʔ*, Sangil *mi|bauʔ*; cf. PMP \*baluk ‘to sell’ [ACD], where Tboli is noted. This could be a loan with \*-ʔ instead of \*-k (Zobel, personal communication, August 2, 2021), but still would not obviate the axis relationship involved.

## Axis Relationships in the Philippines

- (116) SMn-axis \*galəbək ‘make, do’: K-C, Mar, Ira, Mgd *galibik*, Ili *gilibik*, Dbw *gi:bik*, Msk *gawbik*, Tir *galbik*.
- (117) SMn-axis \*kuʔkuʔ ‘cat’: Dbw *kuʔkuʔ*, Tboli *kukuʔ*, Msk *koko*.
- (118) SMn-axis \*lahát ‘all’: Klata, Tag *lahát*, Bagobo Klata *lahat*, Boso *laat*.<sup>58</sup>
- (119) SMn-axis \*lulud ‘to stalk’: Binukid, WBM, K-C, Tir *lulud* ‘to stalk,’ Mar *lolod* ‘to approach.’
- (120) SMn-axis \*ŋalap ‘fish; game (meat which is caught)’: KorBl, SarBl *nalaf* ‘fish’; Ata, Tig *ŋalap* ‘all game,’ Ili *ŋalap* ‘fish; meat.’
- (121) SMn-axis \*paniŋtiŋ ‘ankle’: Klg *panagiŋtiŋ*, K-C *ŋiniŋtiŋ*, SarMb *paniŋtiŋ*, SarBl *fnintiŋ*.
- (122) SMn-axis \*rabiŋ ‘old (object)’: Tir *rabiŋ*, Ira *rabin*, Mgd *labiŋ*; WBM *raviŋ* ‘worn-out mat’; cf. KorBl *lbi*, Tboli, SarBl *labi* (with analogical loss of *ŋ* as if it were the linker).
- (123) SMn-axis \*samáʔ ‘bad, evil’: Tag *samáʔ*, Klata *homóʔ*. Subsequently borrowed from Tagalog by Kapampangan *ma|samáʔ* ‘bad’ and Bolinao *ka|samáʔ* ‘dirty’ after the Tagalog migration to southern Luzon.

## 2.9 Central Mindanao Axis

This axis involves intimate connections among the Mindanao members of the Greater Central Philippine subgroup such as Mansakan, Danao,

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<sup>58</sup>The appearance of this unique word in Tagalog is explained by several cognates in southern Mindanao which are not likely loanwords from Tagalog, but mutually shared when pre-Tagalog was still in this overall area centuries ago.



Figure 9: Central Mindanao Axis

Subanen, and Manobo, but which did not cross over into Bisayan, Bikol, or Tagalog.

- (124) CMn-axis \*ʔandu ‘pestle’ replaces PAN \*qaSəlu, PNP \*qahlu, PSP \*haqlu: Ata, Tig, Ili, WBM ʔandu, Mar, Mgd *ndo*.<sup>59</sup>
- (125) CMn-axis \*balaw ‘story; talk, tell’: Boso *ba|balaw|in*, Car *balaw*, Isamal *baō* ‘story,’ Msk *balaw* ‘speak, talk,’

<sup>59</sup>This is one of three etyma where an original \*IC cluster has received the NC “facultative nasal” (proposed by Dempwolff). In the note to his ACD entry, Blust mentions: “Toba Batak *andalu* ‘the heavy pole with which the rice is pounded,’” so the NC persisted as a doublet outside of the Philippines.

Dbw *bau* ‘converse,’ SarMb *balaw* ‘discussion,’ *balaw-balaw* ‘talk with each other.’

- (126) CMn-axis \**buntud* ‘mountain’ replaces PAN \**bukij*, \**buləd*: WBM, Klg *buntud*, SarMb, WSub *bontod*; CSub *bintud*.
- (127) CMn-axis \**galis* ‘wipe’ replaces PMP \**punas*, PWMP \**pahid*: Klg, SarMb *galis*, Msk *garis*.
- (128) CMn-axis \**tapayan* ‘spider’ replaces PAN \**lawaq*, PWMP \**kawa*: Dbw, Klg *tapayan*.
- (129) CMn-axis \**ʔulunaʔ* ‘pillow’ replaces PMP \**qulun|an*, \**qalunan*, PPH \**puṅan*: Tig, WBM *ʔulunaʔ*, Mar *olonaʔ*; cf. Binukid *ʔalunaʔ*.
- (130) CMn axis \**yaktaw* ‘narrow’ replaces PAN \**kipit*, PMP \**kiput*: Klg *ma|yaktaw*, SarMb *ma|yaktaw*.

### 2.10 Bisayan-Bikol Axis

The outreach of this axis includes most Bisayan and Bikol languages. Normally, innovations appearing in Bisayan and Bikol languages would be assigned to their immediate proto-language (Proto Central Philippine). Instead, an axis is proposed when it is clear that their sister languages (Tagalic and Mansakan) also have innovations within the same semantic parameters. Note that there is an informal coinage or portmanteau of “Bisaya” and “Bikol”—Bisakol—which is usually the term for the three Bisayan languages spoken within the Bicol Region (the Central Bisayan speech varieties of Central Sorsoganon [Sorsogon], Masbate [Masbatenyoy], and Southern Sorsoganon

## The Archive

[Gubat]) which have fallen under the influence of either Northern or Southern Bikol. There is even one Austronesian reconstruction where cognates seem to be limited to just this single axis within the Philippines.<sup>60</sup>

- (131) Bis-Bik-axis \*kaláyuØ ‘fire’ replaces PAN \*Sapuy:<sup>61</sup> Kin, Pan, Blk, Sem, Rom, Mas, CSor, Waray, Naga, Rin *kaláyu*, Akl *kauáyúØ* (*kauáyúwi* ‘set fire to’), Asi’ *kayádu*, Ceb, But, Tsg *ka:yu*, Sur *kayáju*, NCat *karáyu*.
- (132) Bis-Bik-axis \*halnas ‘slippery’: Naga *ma|halnás*, Leg, Mir, WABik, Lib, Rin *ma|ʔalnás*, Vir *ma|hánlas*, NCat *ma|hanlás*, Buhi *ma|ʔaynás*, SSor *ma|hanlás*.
- (133) Bis-Bik-axis \*háliʔ ‘leave, go away’: Naga, CSor, SSor *háliʔ*, Leg *ʔáliʔ*, Vir, NCat *háriʔ*, WABik *ʔaliʔ*, Mas *haliʔ*.
- (134) Bis-Bik-axis \*ʔalpug<sup>62</sup> ‘dust’ replaces PMP \*Rabuk, PWMP \*qabug ~ \*abuR: Naga, Leg, Mir, WABik, Buhi *ʔalpúg*, Mas, SSor *ʔálpug*.
- (135) Bis-Bik-axis \*ʔúyam ‘fed up’: Leg, Mir, CSor, SSor *ʔúyam*, WABik, Rin, Buhi *ʔuyám*.

<sup>60</sup>PAN \*NataD ‘outside,’ PMP \*natad [sic: \*nataD] ‘cleared area around house, cleared ground in village’: Naga, Legaspi, Virac, Northern Catanduanes, Buhi-non, Southern Sorsoganon, Central Sorsoganon, Masbatenyo, Cebuano *nátad*, Miraya, Rinconada, Libon, West Albay Bikol *natád*.

<sup>61</sup>It is clear that the Central Philippine languages replaced PAN \*Sapuy ‘fire.’ This etymon (\*kaláyuØ) affects most Bisayan and Bikol languages. The Mansakan group innovated \*ʔatulun ‘fire’ (see ZDS). This leaves Tagalog’s *ʔapóy* as suspect of being a re-introduction (a loan from another language on southern Luzon). Since Tagalog is a language that generally preserves PPH \*h (note that \*h is preserved in Itbayaten and in Western Bukidnon Manobo *hapuy*), the status of its being a direct descendant of PAN \*Sapuy is open to question.

<sup>62</sup>Liao (personal communication, August 3, 2021) points out that these languages all have PAN, PMP, PPH \*R > g, so that this (and any other reconstructions with <g>, such as \*ʔigwa, \*híwag) could potentially be from \*R.

## Axis Relationships in the Philippines



Figure 10: Bisayan-Bikol Axis

- (136) Bis-Bik-axis \**huṅá?* ‘ask’: Mas *huṅá?*, Mir, WABik, Lib, Rin, Buhi *ṗuṅá?*.
- (137) Bis-Bik-axis \**ṗigwa* ‘there is; have’ [EXISTENTIAL]: Naga, Leg, Vir, CSor, Mas *ṗigwa*, Asi’ *ṗiṅwa*.

## The Archive

- (138) Bis-Bik-axis \*búwaʔ ‘lie, deceive’: Vir, NCat, CSor, SSor, Mas *búwaʔ*.
- (139) Bis-Bik-axis \*híwag ‘move’: CSor *híwag*, Mir, WABik, Lib, Rin *ʔiwág*.
- (140) Bis-Bik-axis \*ʔukáy ‘monkey’: Naga, Leg, Vir, NCat, Mir, CSor, SSor, Mas *ʔukáy*.
- (141) Bis-Bik-axis \*táŋa ‘ant’: Naga, Leg, Vir, CSor, SSor *táŋa*.
- (142) Bis-Bik-axis \*ʔátab ‘early’: Leg, CSor, SSor, Mas *ʔátab*.
- (143) Bis-Bik-axis \*lúsad ‘descend, go down’: Leg, CSor, SSor, Mas *lúsad*.
- (144) Bis-Bik-axis \*siʔŋət<sup>63</sup> ‘sweat’: Vir *siŋʔut*, NCat *siʔŋut*, Ceb, Boh *siŋút*.
- (145) Bis-Bik-axis \*tukduʔ ‘point’: Naga *tukdúʔ*, SSor, Mas *túkduʔ*.
- (146) Bis-Bik-axis \*ʔudit ‘anger; angry’: Rin *ʔudit*, Mas *ʔúrit*, CSor *ʔurít*.
- (147) Bis-Bik-axis \*bugtak ‘put, place’ [v]: Naga, CSor *bugták*.
- (148) Bis-Bik-axis \*labúy ‘mud’: Naga, CSor *labúy*.
- (149) Bis-Bik-axis \*ʔútik ‘lie, deceive’: Leg *ʔútik*, Mir *ʔutík*.

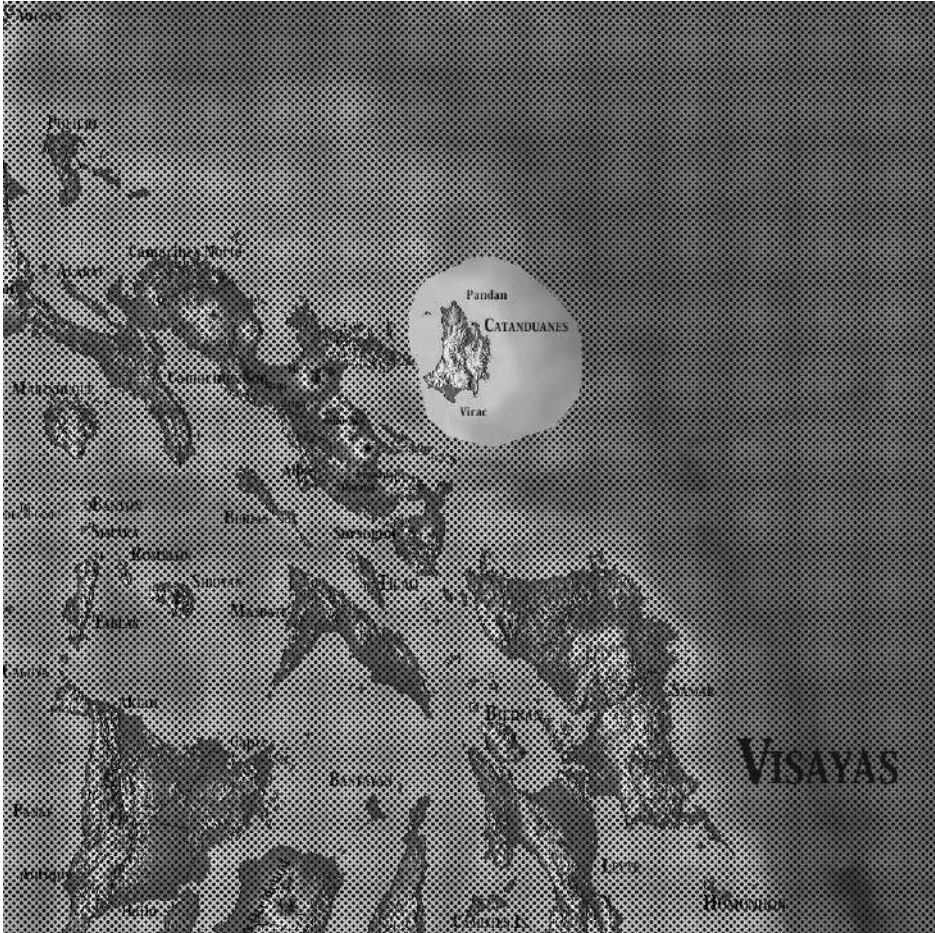
## 2.11 Catanduanes Axis

The island of Catanduanes (depicted in Figure 10 and enlarged in Figure 11) offers the requisite features for an axis relationship. The

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<sup>63</sup>While not justified by these citations, the schwa is inferred from the much more widespread PPH \*riŋaʔət [ZDS]; cf. PWMP \*liŋ(ə)qet ‘sweat, perspiration’ in the ACD—for the justification of \*r, see Malay *ke|riŋat*, Alangan, Iraya *riŋaʔit*.





**Figure 11: Catanduanes Axis**

northern part has Northern Catanduanes (McFarland's "Pandan") which is an isolate (a subgroup all by itself) while Viracnon (Southern Catanduanes) is a member of the Northern Bikol subgroup (with Naga and Legaspi across the strait). Despite the genetic distance between these languages, six shared innovations have come to light

## The Archive

as a result of investigating a 400-word list<sup>64</sup> developed by McFarland during his dissertation research in 1972. While there is a possibility that these were borrowed by Viracnon from Northern Catanduanes, the innovations have clearly remained on the island and there is no direct evidence of any dominant relationship. Surely, the replacement of basic vocabulary such as ‘tooth’ and ‘go home’ is significant.

- (150) Catanduanes-axis \**tiḡú* ‘tooth’ replaces PAN \**ḡipən*: NCat, Vir *tiḡú*.
- (151) Catanduanes-axis \**paribúd* ‘go home’ replaces PMP \**uliq*: NCat, Vir *paribúd*.
- (152) Catanduanes-axis \**maḡúnul* ‘dull (not sharp)’ replaces PMP \**tumpul*, \**dumpul*, PWMP \**ḡazəl*: NCat *maḡúnur*, Vir *maḡúnul*.
- (153) Catanduanes-axis \**taḡpug* ‘dust’ replaces PMP \**Rabuk*, PWMP \**qabug* ~ \**abuR*: NCat, Vir *taḡpúg*.
- (154) Catanduanes-axis \**hiwás* ‘move’ [no established etymon]: NCat, Vir *hiwás*.
- (155) Catanduanes-axis \**ḡabanabán* ‘later (today)’ [no established etymon]: NCat, Vir *ḡabanabán*.

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<sup>64</sup>This was a mimeographed edition which he distributed to colleagues at Yale. It was not numbered. There were actually 399 words and they were presented in alphabetical order by English.

## 2.12 Western Luzon Axis

This axis became reasonably clear to me when McFarland’s magnificent survey of Northern Philippine languages (1977) had cognate entries primarily on the left side of any given page.

- (156) WLZ-axis \*bulún<sup>65</sup> ‘leaf’ replaces PMP \*dahun: Ilk, Ibl, Kyp, Png, Sbl, Bol, Bot, Kpm *bulún*, Ilt *buŋ*, Itb *vuyun*, Ivt *vuhun* [McF-NP#410; Rd#159].
- (157) WLZ-axis \*kítəb ‘bedbug’<sup>66</sup> [no established etymon]: Ilk *kítəb*, Luba, Itg, Knk, Ibl *kítib*, IsiB *ʔitob*, IsiD *ʔitov*, Manabo, Ifg *kítob* [McF-NP#444].
- (158) WLZ-axis \*púsaʔ ‘cat’<sup>67</sup> [no established etymon]: Ilk, KnkS *púsa*, Kia *púha*, Bot *púhaʔ*, Bol, Sbl, Kpm > Tag *púsaʔ*, Png *púsá* [McF-NP#428].
- (159) WLZ-axis \*kütún<sup>68</sup> ‘ant’ [no established generic]: Ilk, Isg, Luba, Itg, Knk *kütún*, Ibl *kutun*, Mlw *kəttun* [McF-NP#441].

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<sup>65</sup>Note PMP \*buluŋ ‘medicinal herbs’ in the ACD. A look at McFarland’s entry reveals three basic etyma in the meaning ‘leaf.’ The western side of Luzon clearly supports \*bulún, the center supports \*túbuq, while the eastern supports \*dahun, which is otherwise well-retained throughout the central and southern Philippines [ZDS]. Meanwhile, \*buluŋ in the southern Philippines has taken on the generic meaning ‘medicine’ [ZDS].

<sup>66</sup>I am grateful to Reid (personal communication, July 28, 2021) for correcting data on Ibaloy and Bambang Isinay in this entry.

<sup>67</sup>The ACD treats ‘cat’ †*pusa*(?) as a LOAN: “It is unclear when domestic cats first reached insular Southeast Asia, and it is possible that this word originally referred to a native animal. If so, however, the word has been transferred almost everywhere to the domestic cat, and it is clearly a loanword in at least Tagalog and Tetun.” The McFarland entry clearly shows a wide distribution of this form all along the west coast of Luzon (perhaps even with influence on Ivatan *pusak*). Note \*kusa along the northeast coast.

<sup>68</sup>Reid (personal communication, July 28, 2021) considers the etymology to be \*kətún (my \*kātún) with assimilation of the penult vowel to that of the stressed ultima.

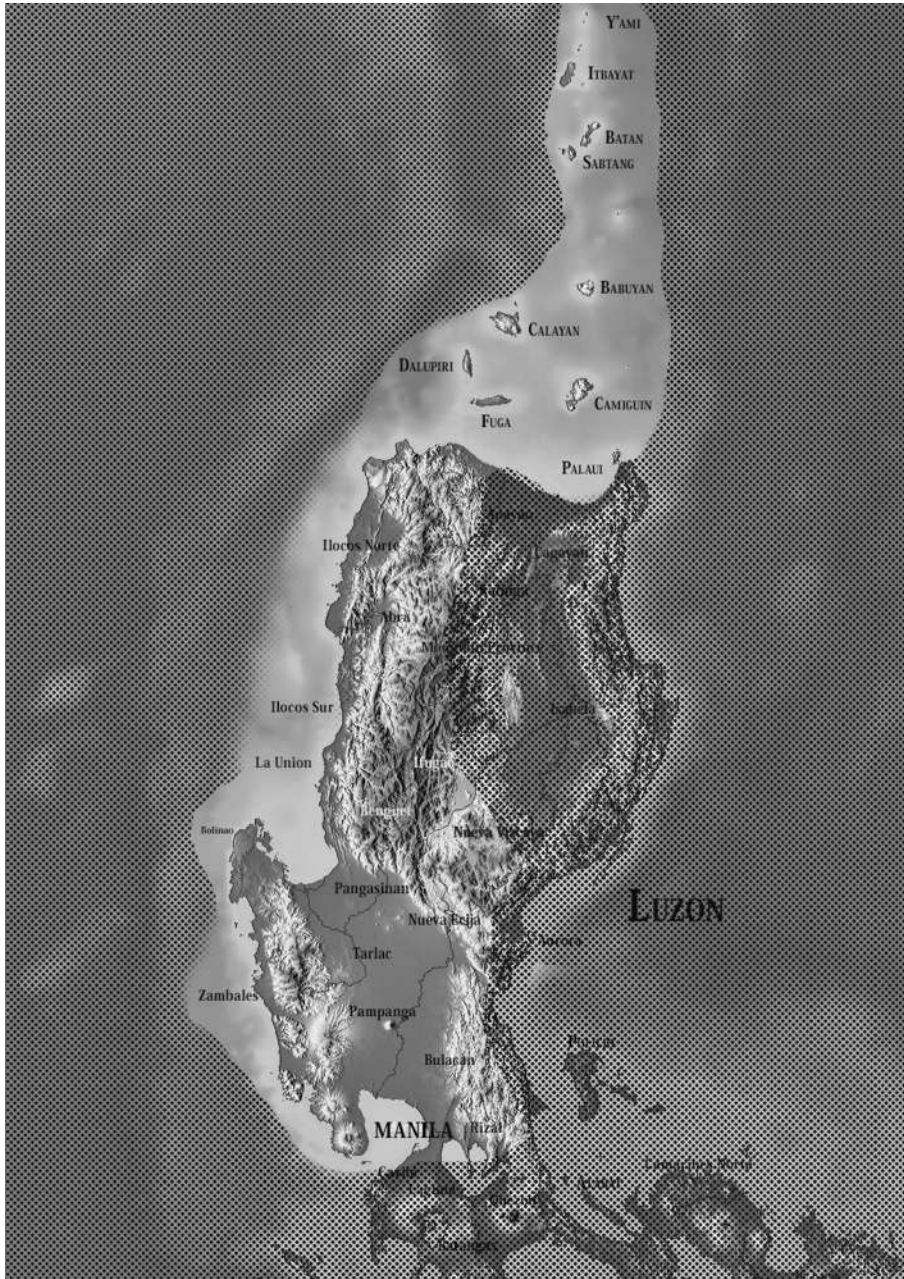


Figure 12: Western Luzon Axis

## Axis Relationships in the Philippines

- (160) WLZ-axis \*bəsát ‘sibling’ [no established etymon]: Ilk *ka|bsát*, Luba, Itg *bisát*, Manabo *basát*, Kal *bosát* [Rd#262], Bol *busát* [McF-NP#241].
- (161) WLZ-axis \*kimát ‘lightning’ replaces PMP \*kilat < PAN \*likaC [ACD]: Ilk, Luba, KnkN&S, Bol, Sbl *kimát*; cf. Png *kirmat* [McF-NP#370].
- (162) WLZ-axis \*túyu ‘rice bran’ replaces PAN \*qəCah, PMP \*qətah: Bontok,<sup>69</sup> Ilk, Itg, Mlw, Luba, KnkS, Ibl *túyu*. [McF-NP#188]
- (163) WLZ-axis \*báti? ‘leave behind, stay, remain’ [v] [no established etymon], cf. PWMP \*bilin ‘something left for another’: Ilk *báti*, Itg *ʔi|bati*, Bol, Sbl *ʔi|báti?* [McF-NP#303].
- (164) WLZ-axis \*tayáb ‘fly’ replaces PAN \*layap, PMP \*Rəbək, PWMP \*layan: Ilk, Ibl *tayáb*, Itg *ʔag|tayáb*, Isi *man|tayáb* [McF-NP#467].
- (165) WLZ-axis \*ʔulmug ‘chicken flea’ replaces PWMP \*kaRaw: Ilk (borrowed by Agta), Png, Bol, Sbl *ʔulmúg*; cf. Bot *kulmúg* [McF-NP#455; Rd#164].
- (166) WLZ-axis \*línáʔaw ‘dew’ replaces PAN \*ńamuR, PMP \*hapun, PWMP \*ambun: Ilk, Itg *linnáʔaw*, Png *lináiw* [McF-NP#368].
- (167) WLZ-axis \*pasaplak ‘outrigger’ replaces PMP \*katiR: Ilk, Manabo, Sbl *pasaplák*; cf. Botolan *pahuplák* [McF-NP#272].
- (168) WLZ-axis \*sára ‘horn’ replaces PAN \*uRəŋ, PPh ~ PSP \*súŋay: Ilk, Bol *sára*, Sbl *sála* [McF-NP#462].

<sup>69</sup>Bontok evidence kindly supplied by Reid (personal communication, July 28, 2021).

## The Archive

- (169) WLz-axis \*ʔayáb ‘call, summon’ [v] replaces PWMP \*tawar:  
Ilk *ʔayáb*, Bol *maŋ|ayáb* [McF-NP#287].

### 2.13 North-Central Luzon Axis

Similar to the above, this axis became apparent when McFarland’s survey of Northern Philippine languages (1977) had cognate entries primarily on the right side of any given page. Careful examination of the map below illustrates that these do not actually cover “Eastern,” but rather “North-Central” areas of Luzon. These are the only four that have thus far survived scrutiny.

- (170) NCLz-axis \*săkalán<sup>70</sup> ‘ring’ replaces \*siŋsiŋ: CCAgta *saklan*, Atta *sa:kkaka:ŋ*, IbgP, Kal *sakkalán* [McF-NP#82a], IbgT *saklan*, Itw *səkklan*, Mlw, Yog *saklan*, Gad *səkkalán* [McF-NP#82a], *sakalan* [Rd#237], Kia *takkalán*, Amg *takkalan*.
- (171) NCLz-axis \*luniR ‘earthquake,’ metathesis of PAN \*linuR: Kal, Mlw, Itw, Blw, IbgT *lúnig*, CCAgta *lunig*, Atta *lunik*, Gad *ʔa|lu:nig*, IbgP, Yog *lunig* [McF-NP#406; Rd#87].
- (172) NCLz-axis \*kúsa ‘cat’ [no established etymon]: Itg, Manabo, KnkN, Kal *kúsa*, Ibg, Isg,<sup>71</sup> Gad, Yog *kusá*, Itw *kutá* [McF-NP#428]; also found in Leti *kusa* (Zobel, personal

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<sup>70</sup>Reid (personal communication, July 28, 2021) proposes “initial consonant should be \*t, based on the Ifugao forms. \*t > /s/ was a common change in some of the Cagayan Valley languages you cite. Other languages have borrowed the initial s of the Cagayan Valley languages.” Thus an alternate \*takalan is very possible.

<sup>71</sup>Also spelled Isneg.



Figure 13: North-Central Luzon Axis

communication, August 2, 2021), possibly a mishearing of \*púsa?.

- (173) NCLz-axis \*bidbid ‘read,’ usually a Malay loan †*básah*:  
 Mlw *məb|bidbid*, Itw, Gad, Yog *məb|bibbid*, Kia *mun|bidbid*,  
 Ibg *məb|bibbig*; cf. Proto-Bikol \*midbid ‘know someone’  
 [McF-NP#285].

## 2.14 Bashiic-Ilokano Axis

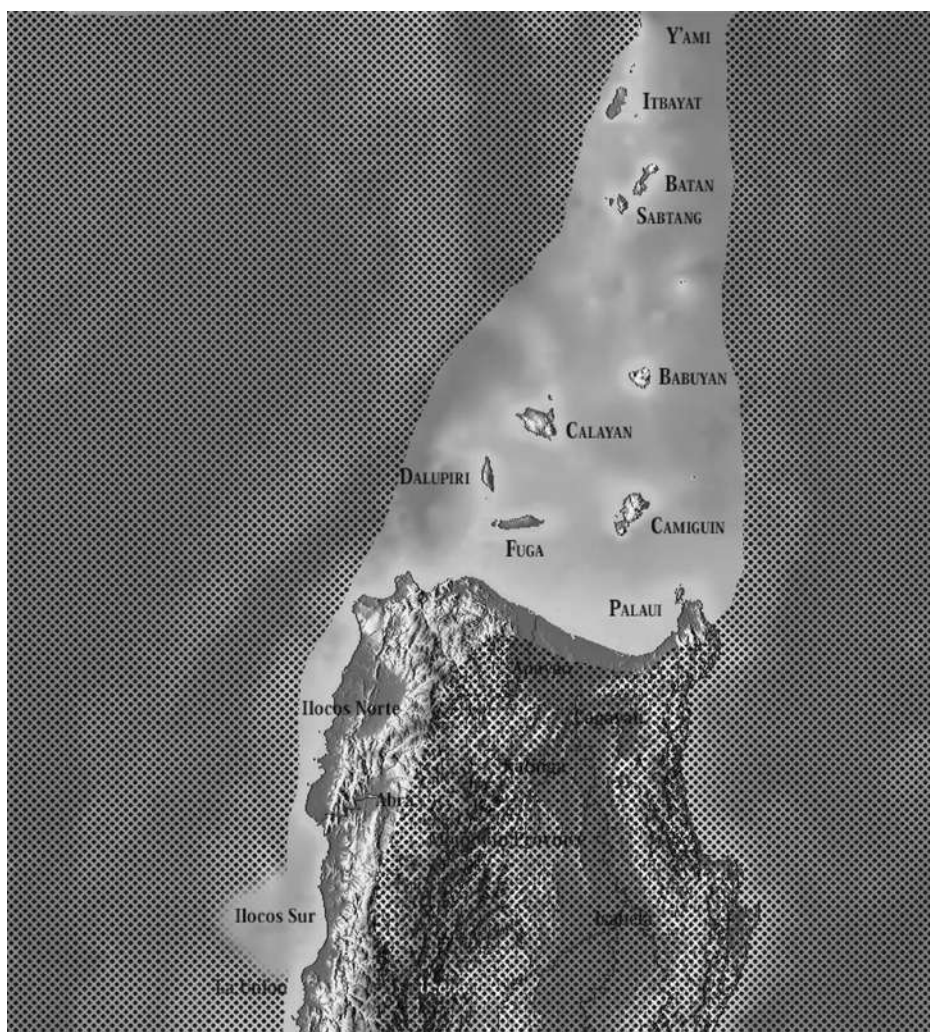


Figure 14: Bashiic-Ilokano Axis

In my review (Zorc 2020) of Blust (2019), I rejected out of hand 19 of the reconstructions by Blust (2019) that only had Bashiic (1) and



Ilokano (2a) cognates as evidence for a PPH etymon. All of these can be found in the ACD. We do not know the prehistory of the region, but careful consideration of the cognates, reflexes, and distribution indicates that such forms may have been innovated in the northernmost region of the Philippines, but did not take hold and carry on over or down into the Cordilleran and more southerly Philippine languages. I find these reconstructions analogous to the situation of Tagalog *páwis* and Kapampangan *páwas* for ‘sweat’ (discussed above in 2.2). While several of these have the “right” and differential reflexes (such as for \*R), these etyma should be treated as evidence for an axis relationship until other cognates are discovered to raise these to PNP or PPH.<sup>72</sup>

- (174) Bash-Ilk-axis \*ʔanam ‘plant species: *Glochidion* sp.’: Yami *anam* ‘*Glochidion rubrum*,’ Ilk *ʔanáṃ* ‘*Glochidion philippicum*.’
- (175) Bash-Ilk-axis \*bagyat<sup>73</sup> ‘anklet, ribbon worn around leg’: Yami *vagiát* ‘female anklet,’ Ilk *bagiát* ‘a ribbon worn around the calf to prevent cramp or rheumatism.’
- (176) Bash-Ilk-axis \*dulit ‘smudge, dirty spot’: Ilk *dúlit* ‘remains of a crushed bug,’ Yami (Imorod) *lolit*, Ivt *rojit* ‘dirt, grime on person,’ Itb *rolit* ‘rubbish, dirt, stain, skin dirt.’

<sup>72</sup>This has happened with PPH \*Rabat ‘flotsam’ (by the addition of Palawano *gabat* ‘area where many dead branches are lying’) and PPH \*tatus ‘coconut crab’ (with the discovery of Mapun *tatus* ‘a very large hermit crab’).

<sup>73</sup>This etymon is changed from that within the ACD \*bagiat and calls for a discussion of “orthographic representation.” The Yami and Ilokano forms are derived from dictionaries listed in the LANGUAGES and REFERENCES section of the ACD. If it were not for a telephone conversation with Dr. Carl Rubino (personal communication, August 21, 2021), it would not be possible to know how Ilokano <bagiát> (Rubino 2000: 77) is pronounced. Following the standard Philippine orthography it would be [bagi?át], whereas according to the Spanish orthography it would be [bagyát]. It is the latter which is true. Sequences of vowels such as these have phonotactic rules within each language which are often difficult to decipher (much less pronounce correctly) based strictly on the way they are spelled in any given dictionary.

## The Archive

- (177) Bash-Ilk-axis \*dúyuR ‘coconut-shell receptacle for food or water’: Ilk *dúyog* ‘a coconut shell, a receptacle for many things; a drinking cup,’ Yami *royoy* ‘coconut pitcher,’ Itb *royoy* ‘coconut shell (as vessel),’ Ibt *royoy*, Ivt *duyuy* ‘a coconut shell cup.’
- (178) Bash-Ilk-axis \*hílək ‘a sea fish, the rudderfish: *Kyphosus cinerascens*’: Yami *ilək* ‘type of fish: snubnose rudderfish (considered the best type of fish),’ Itb *hilik* ‘blackish or smoke-colored fish: *Kyphosus cinerascens*, *Lutianus erythropterus Forskal*,’ Ilk *ʔilek* ‘kind of large spotted marine fish with tasty meat, rudder fish, *Kyphosus* sp.’
- (179) Bash-Ilk-axis \*kəláʔat ‘sudden, abrupt’: Ilk *kelláʔat* ‘sudden, instantly; abrupt,’ Itb *ʔakxat* ‘to do something upon something or someone suddenly and unexpectedly.’
- (180) Bash-Ilk-axis \*laŋlaŋ ‘eat together as a group’: Ilk *ag|la|laŋláŋ* ‘to sit together at a table,’ Itb *xaŋxaŋ* ‘idea of eating in a group (at least two persons),’ Ibt *haŋhaŋ* ‘two people (may) eat together, face to face.’
- (181) Bash-Ilk-axis \*liktaw ‘jump over or across,’ reshaping of \*laktaw: Yami *liktaw* ‘jump over (as in jumping over a ditch),’ *ma|liktaw* ‘able to jump over,’ Ilk *liktáw* ‘jump; leap; stride; to leap over; skip; elude.’
- (182) Bash-Ilk-axis \*lúbay ‘earring’: Yami *ovay* ‘gold, gold chest ornaments,’ Itb *xovay* ‘earring in general; beads, necklace,’ Ivt *hovay*, Ilk *lúbay* ‘earring.’

## Axis Relationships in the Philippines

- (183) Bash-Ilk-axis \*lúya ‘blame, accuse’: Ilk *lúya* ‘to scold, berate, chide, rebuke,’ Itb *ipa|xoo|xoya* ‘accuse s.o. in court,’ *mapa|xoo|xoya* ‘to accuse in court.’
- (184) Bash-Ilk-axis \*pusín ‘to wean a baby from breast-feeding’: Ilk *ka|ppusín* ‘baby who has just stopped breast-feeding,’ Itb *posiñ* ‘idea of weaning,’ Ibt *pusin* ‘to wean a child.’
- (185) Bash-Ilk-axis \*RaRán ‘large marine mollusk: *Turbo marmoratus*’: Ilk *rarán* ‘kind of large, elongated mollusk with a pointed shell; mother-of-pearl,’ Itb *yayan* ‘seashell with a shutter or lid: *Turbo marmoratus* (larger of the two *Turbo* varieties),’ Ivt *yayan* ‘turbo shell,’ Ibt *yayan* ‘kind of large sea snail.’
- (186) Bash-Ilk-axis \*riák ‘noisy’: Itb *riak* ‘sound,’ *ma|riak* ‘loud, stentorian,’ Ilk *riák* ‘clamor, noisy talking,’ *r<um>iák* ‘to swagger, talk with noisy violence.’
- (187) Bash-Ilk-axis \*sáway ‘in excess, overabundant’: Itb, Ivt *saway* ‘idea of overflow or overload,’ Ilk *sáway* ‘excess; surplus in distribution.’
- (188) Bash-Ilk-axis \*túbuy ‘send for; allow to go’: Yami *tovoy* ‘ask to leave,’ Itb *mipi-tovoy* ‘to send for,’ Ibt *toboy* ‘send s.o. on an errand,’ Ilk *túboy* ‘to agree, allow, consent to; approve.’
- (189) Bash-Ilk-axis \*tukal ‘prop, supporting beam in house’: Itb *tokax* ‘part of roof frame supporting rafters, tie beam’, Ilk *túkal* ‘prop used to keep a window from being able to slide.’

## The Archive

- (190) Bash-Ilk-axis \*ʔurit ‘stripe, streak, line’: Itb *ʔorit* ‘stripe, streak, line (vertical),’ Ilk *ʔurít* ‘line, stripe, streak,’ *y|urít* ‘to underline; write; mark.’

### 2.15 \*R > y Language Axis: The “North Extension”

In my treatment of the Mangyan languages of Mindoro (Zorc 1977: 34), I pointed out the division between the North Mangyan (Iraya, Alangan, and Tadyawan) and South Mangyan (Hanunoo, Buhid, Western and Eastern Tawbuwid, and Bangon) languages, and further suggested the possibility of a “North Extension” containing not only the North Mangyan languages but also Batanic/Bashiic and Central Luzon (i.e., Kapampangan and the Sambali-Ayta languages). This “North Extension” was based on the merger of PAN \*R with \*y, not generally found elsewhere among Philippine languages, as well as a handful of putative lexical innovations, including the following:

- (191) \*R > Y-axis \*bulkas ‘morning; tomorrow’ [no established etymon]: Bot *bayum|bu:ka(h)*, Sbl, Bol *buklas*, Ivt *mavokhas* ‘morning’; Bot *nu|bu:kah*, Kpm *bu:kas* ‘tomorrow’; borrowed by Tag *búkas*.
- (192) \*R > Y-axis \*butʔul ‘bone; seed’ replaces PAN \*CuqəlaN, PMP \*tuqəlan, PWMP \*tuqəlaŋ: Bol, Iraya, Han *butʔul*, Buh *butúl*, Aln *bitul*, Bot *butʔu*, Kpm *bu:tul* ‘bone,’ Itb *vutux*, Ivt *vutuh* ‘kernel; pimple’; borrowed as Tag *butó* ~ *butʔó*.

## Axis Relationships in the Philippines

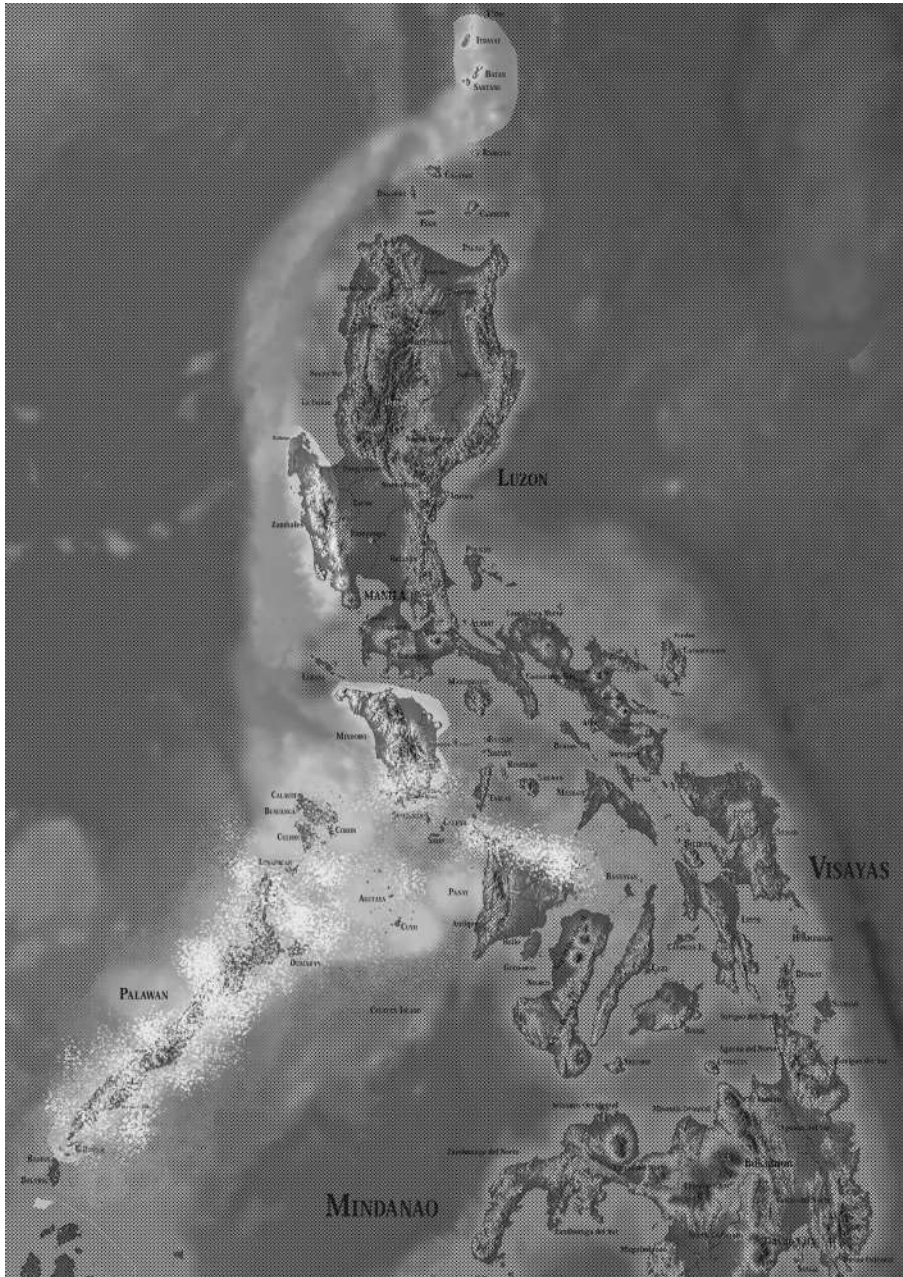


Figure 15: \*R > y Axis

## The Archive

- (193) \*R > Y-axis \*dagúl<sup>74</sup> ‘big’ replaces PAN \*Raya, PMP \*laba, PPH \*dakól: Itb *rakuy*, Ivt *rakuh*, Iraya *lakul*, Kpm *ma|ragúl* ‘big’; *dágul* ‘to grow’ (phonologically distinct from PPH \*dakól).
- (194) \*R > Y-axis \*dimla? ‘cold’ replaces PMP \*diñdiñ ~ diñin, PSP \*ramíg: Aln, Iry *ma|dimla?*, Kpm *ma|rimla*.
- (195) \*R > Y-axis \*lakay ‘man, male’ replaces PAN \*Ruqanay, PMP \*laki, PWMP \*lalaki: Itb *ma|yakay*, Ivt *ma|hakay* ‘male’; Bot *lakay* ‘husband.’
- (196) \*R > Y-axis \*takla? ‘excrement’ replaces PAN \*Caqi, PPH \*táqih: Kpm, Iry *taklá?*, Remontado/Hatang-Kayi *tákla?*, Bot, Sbl *taká?*.

Neither McFarland (1980: 64)<sup>75</sup> nor Blust (1991, 2019) had accepted the inclusion of Batanic/Bashiic in this grouping, but the above data supply a bit more evidence from all of these languages.

Also noteworthy is the presence of forms reflecting \*R as /y/ instead of a more appropriate /g/ or /l/ in members of the South Mangyan (*g*), Palawanic (*g*) and Kalamianic (*l*) subgroups, which may turn out to

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<sup>74</sup>Whatever its shape, either \*dagúl or \*dakúl, (\*k~\*g alternations or “shimmer” are extremely common) these languages clearly do not share the otherwise widespread PPH \*dakól posited by Blust (2019) as an exclusive PPH innovation (which I do accept as legitimate). Both Yami *ráko* and Itbayaten *rakox* appear in the ACD despite their not containing an appropriate reflex of schwa. See Zorc (1977: 58) for a more detailed treatment of “shimmer.”

<sup>75</sup>“Internally, the Ivatan languages are very closely related; by some accounts Ivatan and Itbayaten are mutually intelligible. Externally, the Ivatan languages are very different from Tagalog and other Philippine languages. They are most closely related to the Yami language of Taiwan. *They do not belong to any of the three major groups of Philippine languages* [emphasis added].” His three major groups are: Northern-, Meso-, and Southern-Philippine.

be evidence that an ancient member of this North Extension may have once been a prestige language in that area. Consider the following:

- (197) \*R > Y-axis: Kal, Krm, Btk *ikuy* ‘tail’ (< PAN \*ikuR)
- (198) \*R > Y-axis: Agutaynen *ki-yuy* /kiʔyuy/ ‘egg’ (< PMP \*qitəluR)
- (199) \*R > Y-axis: Agutaynen *niyuy* ‘coconut’ (< PPH \*niyuR, PMP \*niur)
- (200) \*R > Y-axis: Btk, Abr *punyangnan* ‘parent-in-law’ (< PMP \*tuRaŋ)
- (201) \*R > Y-axis: Kalamianic *puyad* ‘nest’ < PPH \*puRad
- (202) \*R > Y-axis: Akl *tubiʔ* ‘water’ (North-Bisayan axis < PWMP \*tubiR ‘depth of water’)
- (203) \*R > Y-axis: Kalamianic \*waiʔ ‘water’ (< PMP \*wahiR)
- (204) \*R > Y-axis: Agutaynen *yatat* ‘breast milk’ (< PMP \*Ratas)

### 3 Conclusions

I am happy after all these years of reticent observations to have the opportunity to write about these axis phenomena.

It appears that my coining of the term *axis* may have had a precedent that stuck in my subconscious. Note the following quote from an article by Tweddell (1970):

To date it has been generally assumed that the Mangyan languages formed a separable group of languages, and this may be so in spite of the seeming divergent associations

## The Archive

with Tagalic and Visayan of the northern and southern ternaries respectively. There is always in the author's mind the possibility of a grouping of the tribal languages in the *Mindoro-Cuyo-Calamian-Palawan axis* [emphasis added], to which will probably need to be added at least Kiniraya [sic], and possibly other languages in the Visayas. Something of this same possibility might be deduced from Conklin's remarks regarding the heavy Cuyonon and Visayan content of the Hanunoo urukai, in which inferentially he ties Agutaynon and Ratagnon with Hanunoo. (202)

Our paper has indeed justified a PALAWAN-MINDORO AXIS and a few others where Hanunoo became a member.

I am pleased to see that scholars such as Ross (1988) and Pawley & Ross (1995) first addressed for Austronesian a somewhat analogous situation that I wound up withholding as "too complicated" from my dissertation (Zorc 1975, 1977). Meanwhile, Reid (2019) has proposed this in his paper on the position of Isinay among the Central Cordilleran languages. This area of linguistic inquiry is very welcome and stimulating. I recently read a paper by one of Hsiu-chuan Liao's graduate students (Shibata n.d.) where this kind of solution is proposed for similarities among Western Plains Formosan languages that he proposes do not subgroup together. In it he suggested that they form a Sprachbund.

It is crucial that we be open to adjusting our observations. For example, I was forced to withdraw a proposed NBs-axis item, \*ʔalwan



‘easy,’ when April Almarines (personal communication, July 30, 2021) brought to my attention that it was a Tagalog word (Panganiban 1972: 42) and is most probably a loan in Bulalakawnon and Asi’. Similarly, I withdrew what I originally called a ‘Bisayan-Y axis’ involving loans with <y> in Manide (Lobel 2010) and Inagta Alabat (Lobel et al. 2020) from a Visayan language that had <y> as its reflex of \*l, \*-d-, \*-j-, or \*r.<sup>76</sup> This is simply an instance of a number of loans affecting the lexicon of these two languages. A few etyma within the Bash-Ilk axis have already been raised to PPH. As research grows, new axes may come to light and proposed axis forms may be raised to true etymologies. One exciting but still untreated potential axis is that involving the innovation of \*matləm ‘blood’ (replacing PAN \*daRaŋ) realized as Bugkalot/Ilongot *matyim* who were former enemies of the Arta *ma-ləm* /maʔləm/ and Northern Alta *matləm*. Under what circumstances was such an important innovation coined?

In truth, this is nothing new, as Robert Blust reminded me (personal communication, July 29, 2021). Indo-Europeanists have been working on similar phenomena for over 150 years.<sup>77</sup> Nevertheless, this is the first systematic approach to a substantial

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<sup>76</sup>This phenomenon can also be seen in Tagalog *yuyib* < PCP \*luŋib ‘cave’ and *suyod* ‘fine tooth comb’ < PPH \*sújud. Also, within the Bisayan group, the name of the entire community and language complex seems to have this same change involving a Malay loan (Malay †*bicāra* ‘talk’ > Bisayan *bisáya*? ‘Visayas (the region),’ *binisayá*? ‘Bisayan language’ (ultimately from Sanskrit *vicāra*- ‘consideration, pondering, discussion’ [Gonda 1973: 100]). Regardless of the status of individual language’s reflexes of \*l (< \*r), almost all Bisayan lects use this word to identify themselves and their language. For example, while Aklanons identify themselves as *bisáya*?, they have a maverick proto-form †*bisáya*Ø ‘word (a single word as opposed to a phrase)’ and derivations therefrom: *bilisádʔon* ‘maxim, short saying worth remembering,’ and *pamisáya* ‘to speak formally, address, lecture.’

<sup>77</sup>For example, the *centum–satem* division is commonly seen as resulting from innovative changes that spread across Proto-Indo-European dialect-branches over a particular geographical area (Wikipedia: Indo-European languages).

## The Archive

number of leakage phenomena or loans that cross subgroup boundaries within the Philippines. Discussions at the end of the presentation of this paper at the 14<sup>th</sup> Philippine Linguistics Congress (14PLC) brought up a probable “Tausug-Sama” axis. Research on this has yet to be conducted, but appears to be extremely promising.

Finally, in closing, I would dearly love to hear from other Philippine linguists as to the acceptability of the proposals I have made, and if they have either supporting or contradictory evidence as to their validity. I would also like to thank the nearly one-thousand participants in the August 24, 2021 presentation for all of their supportive comments and excellent questions.

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Oxford University Press. In press.

# Appendix A

## Table of Philippine Language Descendancies

R. David Zorc

In general, Philippine languages can have up to a “10 step” descent pattern consisting of the following:

- 01 AN** Austronesian including Formosan languages.
- 02 MP** Malayo-Polynesian including Oceanic languages.
- 03 WMP** Western-Malayo-Polynesian includes the Philippines, Borneo, Indonesia, Sulawesi, etc.
- 04 PH** Philippines (including all languages native to the Philippines except for Sama-Bajaw).
- 05 NPH vs. SPH** Northern Philippines vs Southern Philippines, distinguishes broadly between most languages of Luzon north

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of Manila (NPH) vs. the Visayas, Mindanao, Palawan, and Northern Sulawesi in Indonesia (SPH).

**06 Macrogroup** First branch off of either Northern or Southern Philippines.

**07 Microgroup** First branch off of a macrogroup.

**08 Group** First branch off of a microgroup. There are around 20 major Philippine language groups.

**09 Subgroup** These are the 50 branches off of the approximately 20 major Philippine language groups.

**10 Language** The extent of any native Philippine language (which may include dialects).

For example, the “descendancy” of two different Bisayan languages would be:

01	02	03	04	05	06	07	08	09	10
A <sub>N</sub>	MP	WMP	P <sub>H</sub>	SP <sub>H</sub>	GCP	CP <sub>H</sub>	Bisayan	West	Aklanon
A <sub>N</sub>	MP	WMP	P <sub>H</sub>	SP <sub>H</sub>	GCP	CP <sub>H</sub>	Bisayan	Central	Bantayanon

Beneath this would be an eleventh “step,” the dialect or regional variant; for example, Aklanon has a Kalibonhon variety (in Kalibo town), an Ibayaynon variety (in Ibayay town), and a Madalagnon variety (in Madalag town), and so on.

However, these ten steps are only true for subgroups which exhibit multiple language splits over a wide geographical area like Bisayan and Manobo. Only 60 out of the 200 or so Philippine languages have all

## Axis Relationships in the Philippines

ten. Others, possibly because of the two extinctions proposed by Blust (2005), have fewer nodes.

Note the situation of the Southwest Mindanao languages (Blaan, Tboli, and Teduray).

AN	MP	WMP	PH	SPH	SWMIN	—	Teduray	(with 7 steps)
AN	MP	WMP	PH	SPH	SWMIN	Bilic	Tboli	(with 8 steps)

This is somewhat expanded by looking at the two Blaan lects which have 9 steps.

AN	MP	WMP	PH	SPH	SWMIN	Bilic	Blaan	Koronadal
AN	MP	WMP	PH	SPH	SWMIN	Bilic	Blaan	Sarangani

It is possible, however, that Klata and the Bilic languages share a node under SP<sub>H</sub> which can be called PSM<sub>IN</sub> (Proto-Southern Mindanao). One possible piece of evidence being a shared prefix \*sə- which covers reciprocal, comitative, and relational functions (E. Estrera, personal communication, July 29, 2021). This would then result in the following revised descendancies:

AN	MP	WMP	PH	SPH	SMIN	SWMIN	Bilic	Blaan	Koronadal	(10)
AN	MP	WMP	PH	SPH	SMIN	SWMIN	Bilic	Blaan	Sarangani	(10)
AN	MP	WMP	PH	SPH	SMIN	SWMIN	Bilic	—	Tboli	(9)
AN	MP	WMP	PH	SPH	SMIN	SWMIN	—	—	Teduray	(8)
AN	MP	WMP	PH	SPH	SMIN	SEM <sub>IN</sub>	—	—	Klata	(8)

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# Appendix B

## Philippine Languages: Tree Diagrams and Subgroupings

April Almarines<sup>78</sup>

### Introduction

This supplement belongs to a publication regarding Axis relationships originally presented via an online platform on the 24<sup>th</sup> of August

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<sup>78</sup>I would like to acknowledge Ron Himes, Dan Kaufman, Jason Lobel, and Laure Reid for the assistance they gave which led to the completion of this supplement. To “Sir David” Zorc, thank you for all the time you have invested in me, for putting up with all my questions and with more questions to come. My heartfelt gratitude also goes to Florence Belvis, Joey Tolentino and their staff; thank you for giving me the opportunity to hear the sounds of the different languages that I only used to read or hear about, for all the care, answering all my questions and most importantly giving me a safe space to work from. Special acknowledgement goes to Sander Adelaar for invaluable editorial suggestions, for patiently going through several versions of this supplement and most importantly for the encouragements to keep on going. Last but not the least, to Bob Blust, who sparked my interest in linguistics, for having enough patience to go through all my inputs to see that I was “onto something,” for considering that my inputs are valuable enough to let me go through several of your publications before they go to press, and for never treating me as if I were just another random person who asks annoying questions. I am forever grateful that our paths crossed. Any errors which remain in this work are mine alone.

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2021 for the 14<sup>th</sup> Philippine Linguistics Congress. Amongst others, the presentation was attended by high school students and their teachers, linguists, language conservationists and interested people with no particular linguistic background. The interest in Philippine languages was positively overwhelming. It is due to the variety of the audience that both authors decided that they should supplement the publication presented with additional information in order to help not only the enthusiastic audience who attended the presentation, but also other readers who would like to understand the significance of the data presented.

Understanding Axis relationships needs a full understanding of how the Philippine languages are related to each other.

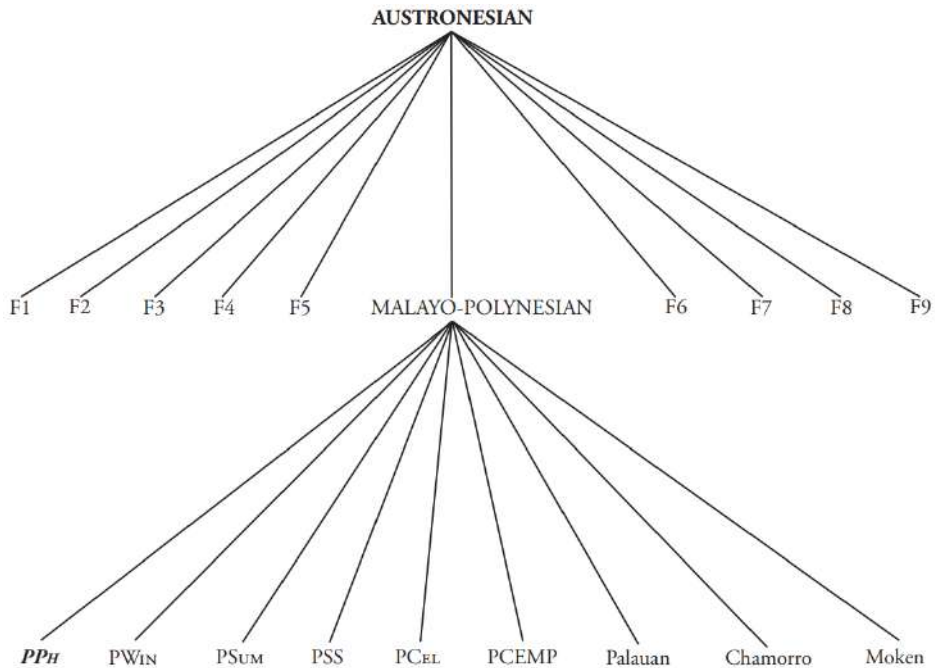
Subgrouping helps determine how languages are related to each other internally (within the same subgroup) and externally (to other subgroups) and it is able to shed light on the historical relationships and common origins of the languages being analyzed. It is done based on the occurrence of common *lexical innovations*, *phonological innovations*, *morphological innovations*, *semantic innovations*, and *functor or function word analysis*.

The tree diagrams are taken from existing sources. In some instances, additional changes were made. In these cases, the authors were involved unless stated otherwise, so that the rendition of the tree diagrams could be presented as faithful to the reference work as possible.

It is hoped that this work will be of use to the readers not only for a better understanding of “axis relationships,” but also for any future research involving Philippine and related languages.



Diagram I



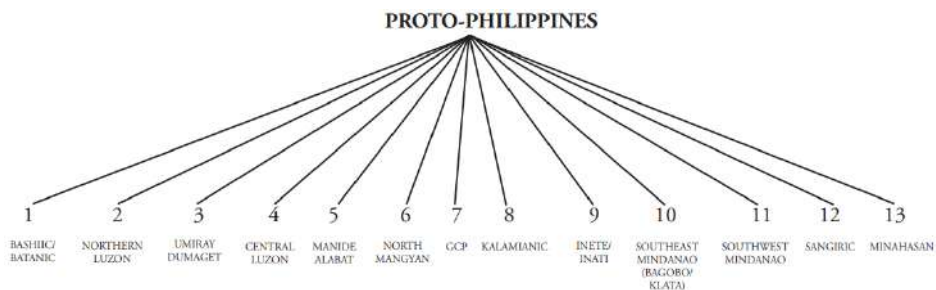
<b>F1*</b>	Rukai	<b>F9</b>	Paiwan
<b>F2</b>	Tsouic	<b>PPH</b>	Proto-Philippines
<b>F3</b>	Puyuma	<b>PWIn</b>	Proto-West Indonesian
<b>F4</b>	Northwest Formosan	<b>PSUM</b>	Proto-Sumatran
<b>F5</b>	Western Plains	<b>PSS</b>	Proto-South Sulawesi
<b>F6</b>	Atayalic	<b>PCeL</b>	Proto-Celebes
<b>F7</b>	East Formosan	<b>PCEMP</b>	Proto-Central Malayo-Polynesian
<b>F8</b>	Bunun		

The tree diagram above is based on Blust (1977) and Smith (2017). The Austronesian language family has nine Formosan branches (F1–F9) comprising languages which are all spoken in Taiwan, and Malayo-

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Polynesian, from which all other Austronesian languages are descended, including the Philippine languages as well as Proto-Philippines.

## Diagram II



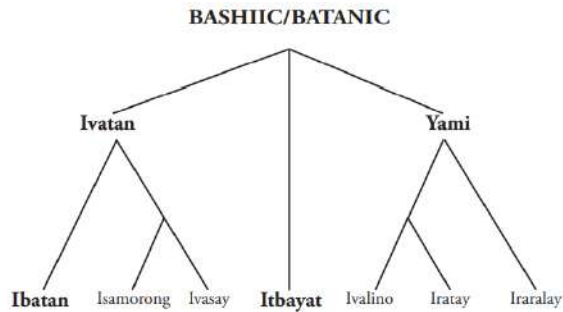
The different Philippine subgroups as they appear from left to right in the above tree diagram are as follows:

- |   |                             |    |                    |
|---|-----------------------------|----|--------------------|
| 1 | Bashiic/Batanic             | 8  | Kalamianic         |
| 2 | Northern Luzon              | 9  | Inete/Inati        |
| 3 | Umiray Dumaget              | 10 | Southeast Mindanao |
| 4 | Central Luzon               | 11 | Southwest Mindanao |
| 5 | Manide-Alabat               | 12 | Sangiric           |
| 6 | North Mangyan               | 13 | Minahasan          |
| 7 | Greater Central Philippines |    |                    |

The above tree diagram is based on Zorc, Lobel & Hall (in press). The first to have mentioned the existence of a Proto-Philippine language was Mathew Charles, in his paper “Problems in the Reconstruction of Proto-Philippine Phonology and the Subgrouping of the Philippine Languages” (1974). Proto-Philippines is the proposed ancestor of all Philippine languages, an idea which is

disputed by some scholars. No diagrams were made for Umiray Dumaget (3), Inete/Inati (9) and Southeast Mindanao (10) as these are isolates and have no branchings.

### Diagram 1



The above tree diagram is from Gallego (2014). Other works dealing with this subgroup are the following:

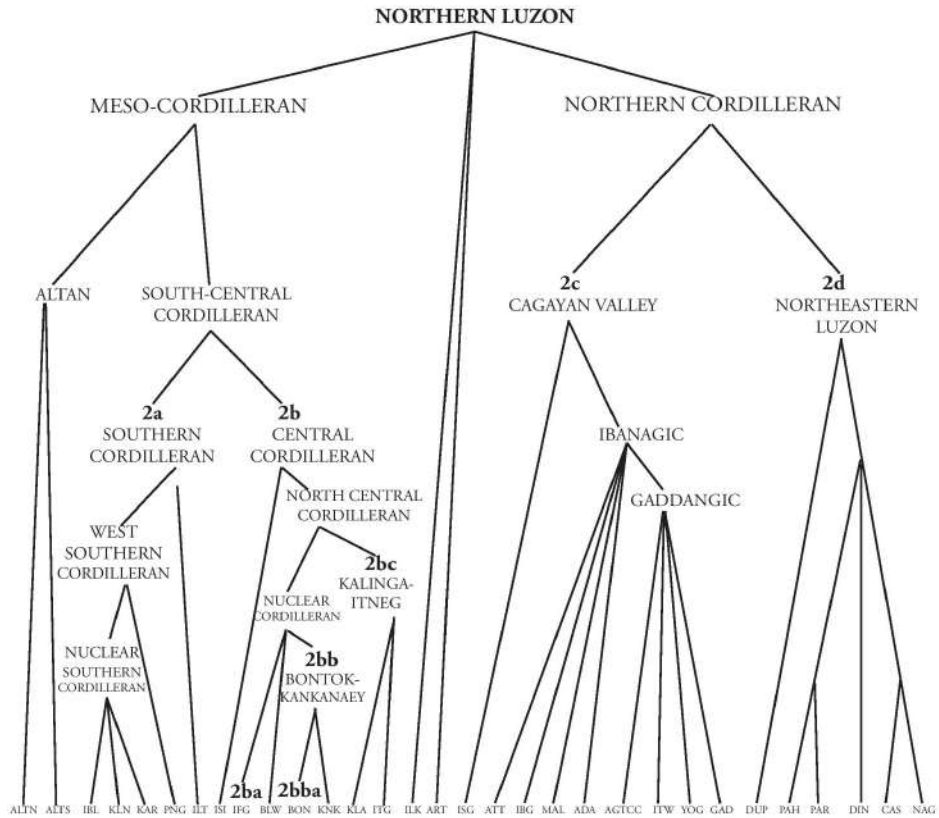
- 1908 *The Batan dialect as a member of the Philippine group of languages* by Otto Scheerer
- 1926 “Ivatan als ‘Test-Sprache’ für uraustronesisches L” by Otto Dempwolff
- 1987 *Lists of selected words of Batanic languages* by Shigeru Tsuchida, Yukihiro Yamada, and Tsunekazu Moriguchi
- 2002 “Subgrouping and Reconstruction of Batanic Languages” by Doris Hsiao-Fang Yang
- 2005 “The Batanic languages in relation to the early history of the Malayo-Polynesian subgroup of Austronesian” by Malcolm D. Ross

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2017 “Regular Metathesis in Batanic (Northern Philippines)?” by Robert A. Blust

2019 “The Resurrection of Proto-Philippines” by Robert A. Blust

**Diagram 2**



**ALTN** Northern Alta  
**ALTS** Southern Alta  
**IBL** Ibaloi/Ibaloy  
**KLN** Kalanguya

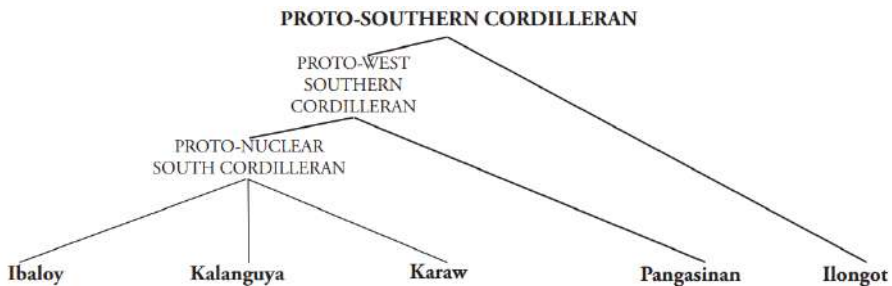
**KAR** Karaw/Karao  
**PNG** Pangasinan  
**ISI** Isinay  
**IFG** Ifugao

## Axis Relationships in the Philippines

<b>ILT</b>	Ilongot/Bugkalot	<b>ADA</b>	Addasen
<b>BLW</b>	Balangaw	<b>AGTCC</b>	Central Cagayan Agta
<b>BON</b>	Bontok	<b>ITW</b>	Itawit/Itawis
<b>KNK</b>	Kankanaey	<b>YOG</b>	Yogad
<b>KLA</b>	Kalinga	<b>GAD</b>	Gaddang
<b>ITG</b>	Itneg	<b>DUP</b>	Dupaningan Agta
<b>ILK</b>	Ilokano	<b>PAH</b>	Pahanan Agta
<b>ART</b>	Arta	<b>PAR</b>	Paranan Agta
<b>ISG</b>	Isneg	<b>DIN</b>	Dinapigue Agta
<b>ATT</b>	Atta	<b>CAS</b>	Casiguran Dumagat Agta
<b>IBG</b>	Ibanag	<b>NAG</b>	Nagtipunan Agta
<b>MAL</b>	Malaweg		

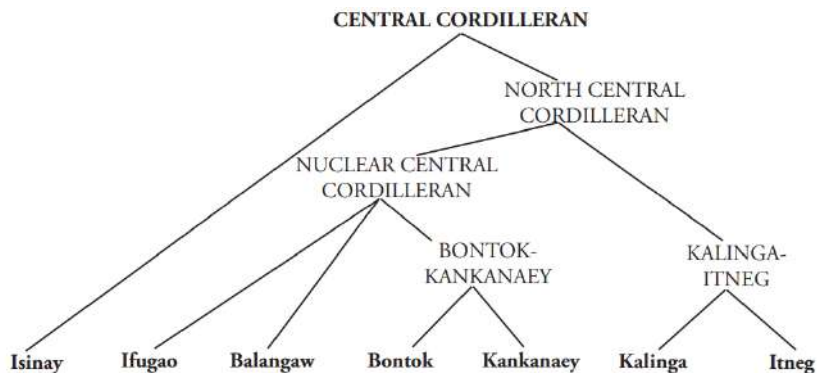
The tree diagram is based on Reid (1974), Lobel (2013), and Himes (1997, 1998, 2005, 2007). At the terminal ends of the tree diagram are distinct languages belonging to this subgroup (represented by abbreviations).

### Diagram 2a



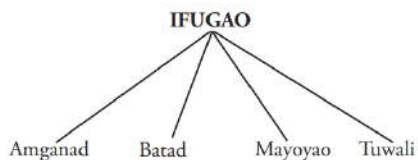
The above tree diagram is from Himes (1997).

## Diagram 2b



The above tree diagram is from Himes (1997).

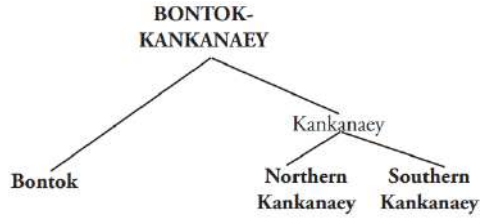
## Diagram 2ba



The data on Ifugao is from Ethnologue (2020). To date, there is no comprehensive dialectological study of the Ifugao language.

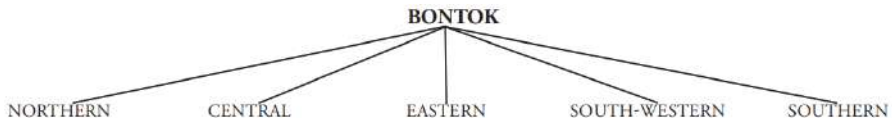
## Axis Relationships in the Philippines

### Diagram 2bb



The above is a modified version of the tree diagram in Reid (1974).

### Diagram 2bba



Further articulations of the branches in the Bontok diagram are in Diagrams 2bbaa to 2bbac below.

DIAGRAM 2bbaa

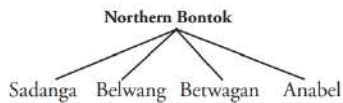


DIAGRAM 2bbab

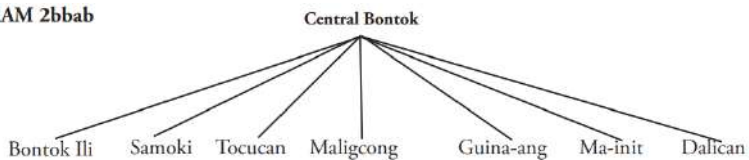
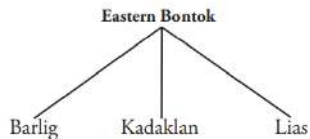


DIAGRAM 2bbac



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DIAGRAM 2bbad

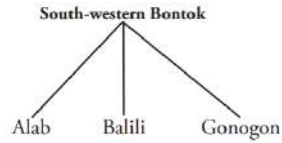
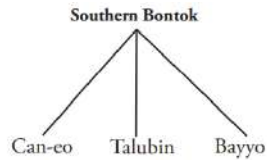
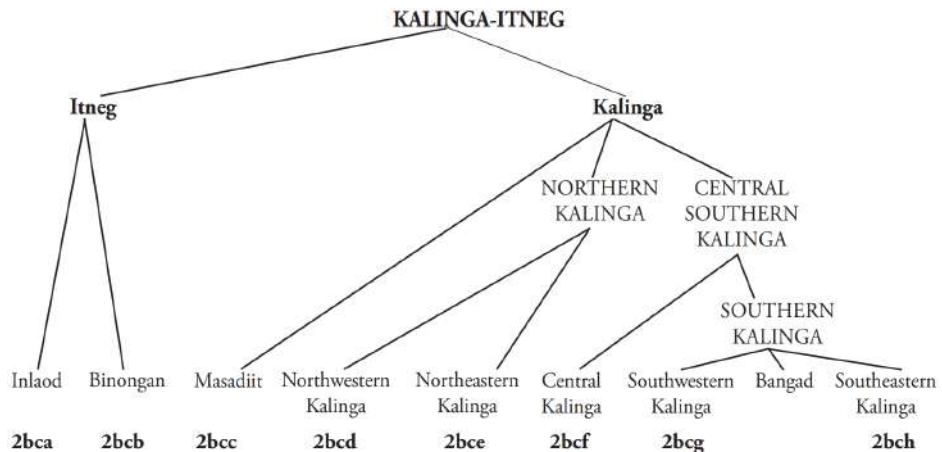


DIAGRAM 2bbac



The above tree diagrams were drawn in consultation with Lawrence A. Reid (personal communication, August 11, 2021) and derived data in the introduction to the *Talking Dictionary of Khinina-ang Bontok* <<https://htq.minpaku.ac.jp/databases/bontok/aboutIntroduction.jsp>>.

## Diagram 2bc

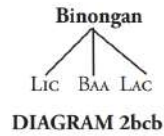
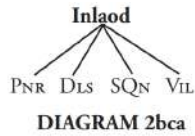


The above tree diagram is derived from Himes (1997). Extensions of the tree diagram (showing dialects and sub-dialects) were made in consultation with Ronald Himes (personal communication, April 6,

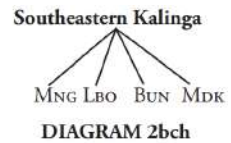
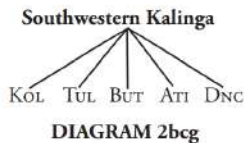
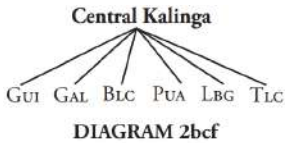
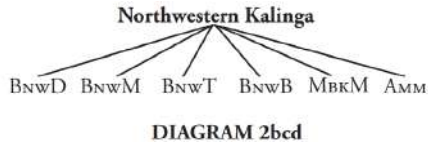
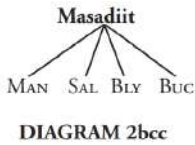


2022). Further articulation of the above tree diagram, showing dialects and sub-dialects, is as follows.

**Itneg**



**Kalinga**



**Itneg (ITG)**

**Inlaod (INL)**

- PNR** Dumayco and Poblacion, Peñarrubia, Abra
- DLS** Caopasan, Danglas, Abra
- SQN** Tangadan and Poblacion, San Quentin, Abra
- VIL** Lumaba, Villaviciosa, Abra

**Binongan (BIN)**

- LIC** Nalbuan, Baay-Licuan, Abra
- BAA** Tumulip, Baay-Licuan, Abra
- LAC** Poblacion, Lacub, Abra

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### Kalinga (KLA)

#### Masadiit (MSD)

MAN	Poblacion, Manabo, Abra
SAL	Subusob, Sal-lapadan, Abra
BLY	Poblacion, Boliney, Abra
BUC	Labaan, Bucloc, Abra

### Northern Kalinga (KLAN)

#### Northwestern Kalinga (KLANW)

BNWD	Ibanaw of Poblacion, Daguioman
BNWM	Ibanaw of Taripan and Poblacion, Malibcong, both in Abra
BNWT	Ibanaw of Talalang, Balbalan, Kalinga
BNWB	Ibanaw of Balbalasang in Balbalan, Kalinga
MBKM	Imabaka of Dulao, Malibcong and Gubang of Buanao, Malibcong, Abra
AMM	KLANW of Ammacian, Quirino, Kalinga

#### Northeastern Kalinga (KLANE)

MAG	Magnao, Tabuk, Kalinga
TBK	Poblacion, Tabuk, Kalinga

### Central-Southern Kalinga (KLACS)

#### Central Kalinga (KLAC)

GUI	Guinaang, Pasil, Kalinga
GAL	Galdang, Pasil, Kalinga
BLC	Balenciagao, Pasil, Kalinga
PUA	Puapo, Pasil, Manangol, Kalinga
LBG	Poblacion, Lubuagan, Kalinga
TLC	Talocloc, Tanudan, Kalinga

### Southern Kalinga (KLAS)

#### Southwestern Kalinga (KLASW)

KOL	Kolayo, Balatoc, Pasil, Kalinga
TUL	Tulgao, Tinglayan, Kalinga
BUT	Ngibat, Butbut in Tinglayan, Kalinga
ATI	Amti, Boliney, Abra
DNC	Danac, Boliney, Abra

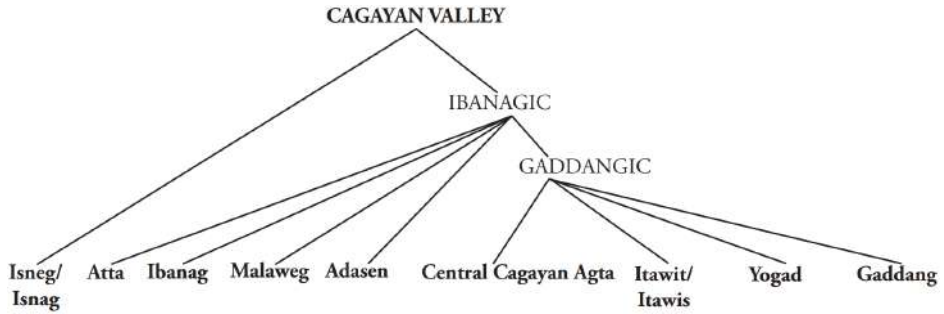
#### Bangad, Tinglayan (BAN)

#### Southeastern Kalinga (KLASE)

MNG	Mangali, Tanudan, Kalinga
LBO	Lubo in Tanudan, Kalinga
BUN	Bunut in Dalipoy, Paracelis
MDK	Madukayong in Natonin, Mountain Province

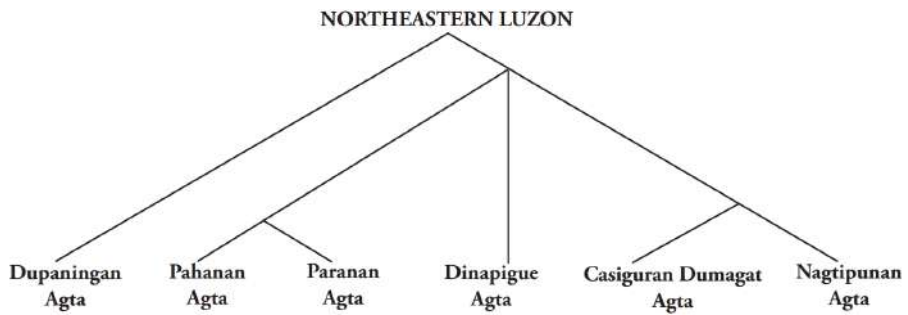
## Axis Relationships in the Philippines

### Diagram 2c



The above tree diagram is from Reid (2006).

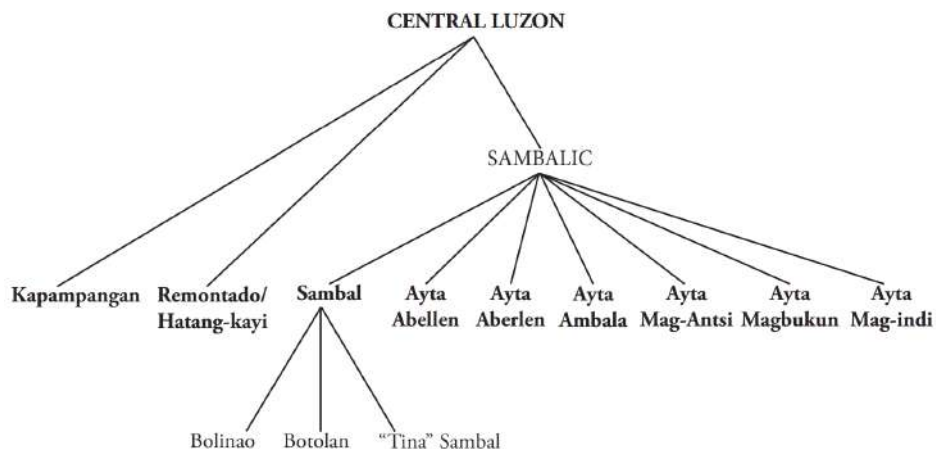
### Diagram 2d



The above tree diagram is from Robinson & Lobel (2013).

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### Diagram 4



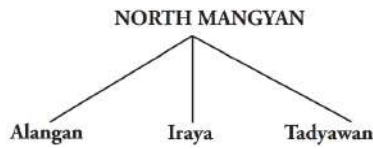
The above tree diagram is based on Wimbish (1986) and Himes (1997) and was drawn in consultation with Ronald Himes (personal communication, June 13, 2021).

### Diagram 5



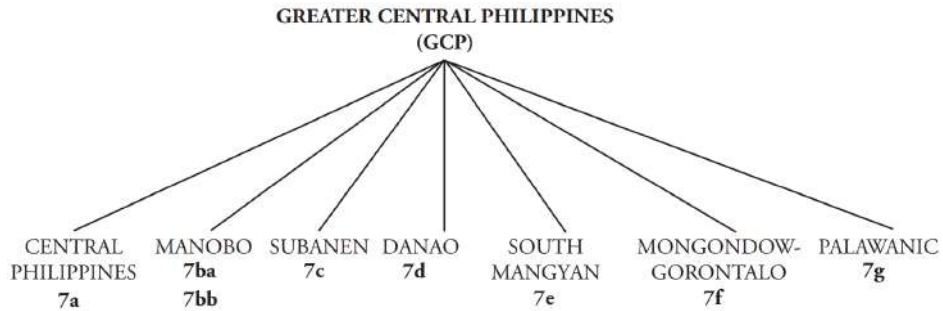
The above tree diagram is from Lobel (2013).

## Diagram 6



The above tree diagram was created in consultation with Zorc (personal communication, September 1).

## Diagram 7



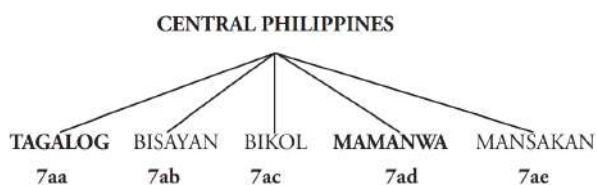
The above tree diagram is a further articulation of a section of the Proto-Philippines tree diagram. Zorc, Lobel & Hall (in press) state that:

The Greater Central Philippine (GCPH) subgroup, first proposed by Blust (1991), combines seven Philippine subgroups (Central Philippines, South Mangyan, Palawanic, Subanen, Danaw, Manobo, and Mongondow-Gorontalo) on the basis of both shared lexical innovations and the \*R > /g/ shift ... Zorc,

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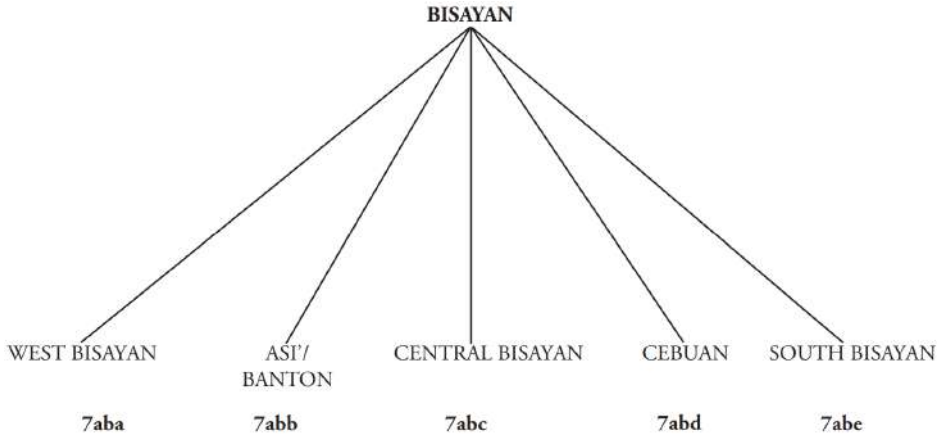
however, questions the inclusion of the Palawan languages in this subgroup ... Lobel (2013, 2016b) has raised the possibility that Molbog, the southernmost language included in the Palawan subgroup, may instead be more closely related to the Bonggi language of Sabah, Malaysia ... a language which Blust (2010) argues is most closely related to the Idaanic languages of Sabah.

### Diagram 7a



There are no individual trees for Tagalog and Mamanwa in the literature. Tagalog has several dialects, but up to date, no comprehensive dialectological study of Tagalog exists.

Diagram 7ab



The above tree diagram is a simplified version of the tree diagram in Zorc (1977). Zorc's dissertation is considered the definitive work on Bisayan languages. Lobel's dissertation (2013) had some additional information about the Bisayan languages, so efforts were made to incorporate his data in the following tree diagrams for the Bisayan languages. Modifications to the tree diagrams for each branch of the Bisayan language family were done in consultation(s) with R. David Zorc and Jason Lobel.

# The Archive

## Diagram 7aba

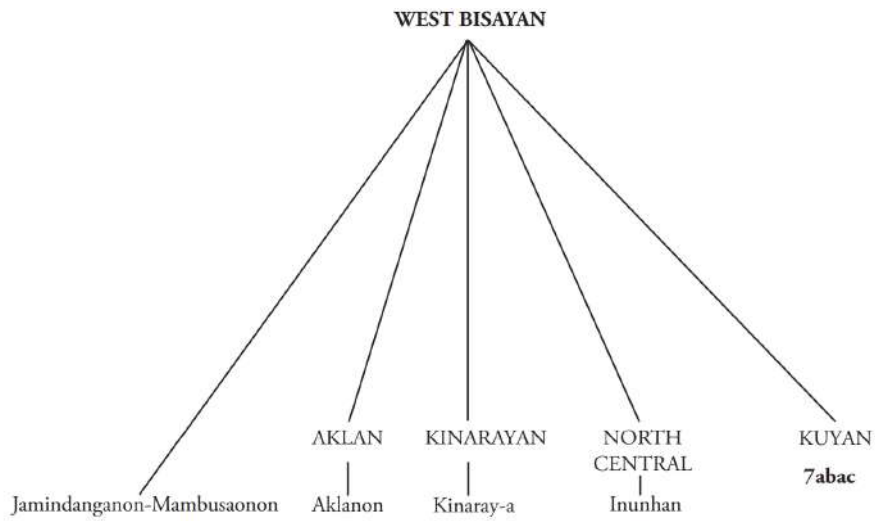


DIAGRAM 7abaa

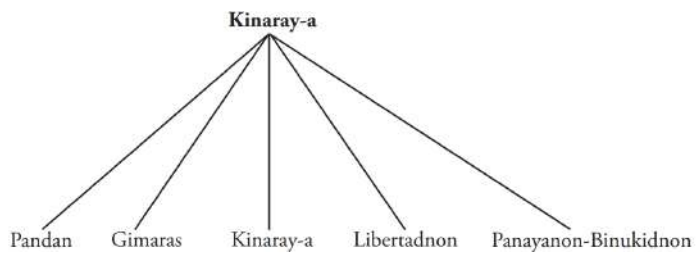
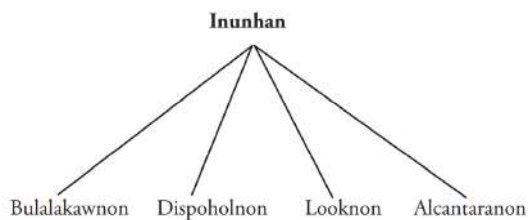


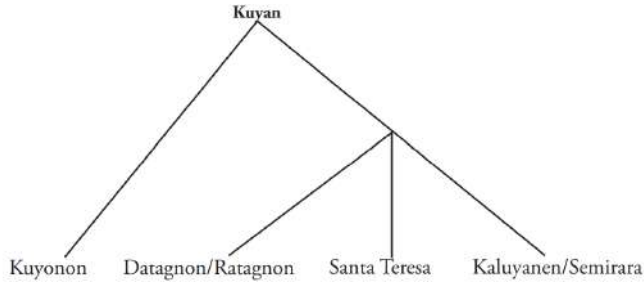
DIAGRAM 7abab





## Axis Relationships in the Philippines

DIAGRAM 7abac



**Jamindanganon-Mambusaanon.** First mention of this speech form in any easily available publication was made by Lobel (2013), who considers it a separate language (R. D. Zorc, personal communication, October 17, 2021). Further study of this language is needed in order to determine its position in the West Bisayan branch.

**Aknanon.** At the time of this writing, Philip Rentillo (De La Salle University Manila) was working on a dialectal study of Aknanon, covering the language as spoken in the different barangays of Aknan.

**Inunhan.** The name of this speech form was not available to Zorc when he wrote his dissertation (1977); however, it corresponds to the NORTH-CENTRAL node of the West Bisayan branch in his tree diagram.

**Libertadnon.** See Lobel (2013).

**Panayanon Binukidnon.** Also known as Sulud, Sugudnon, or Suludnon. See Lobel (2013).

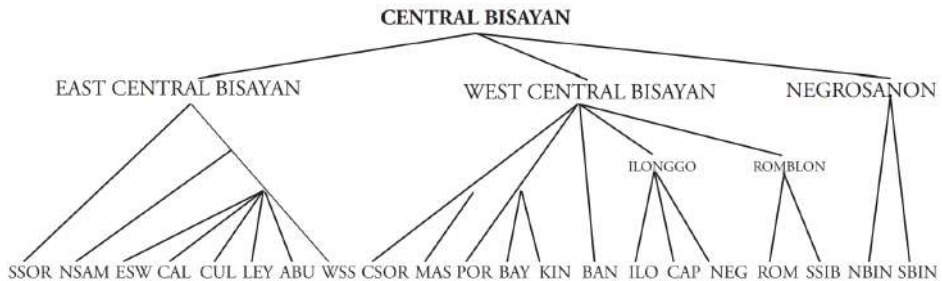
## The Archive

### Diagram 7abb



The Banton branch of the Bisayan languages (Zorc 1977) was renamed Asi' in Zorc, Lobel & Hall (in press) as the name Banton does not represent the areas in which the Asi' languages are spoken. Lobel has done additional work on the Bisayan languages (2013) which made it possible to update the Zorc (1977) tree diagram. The above diagram was created by comparing the tree diagram in Zorc (1977) with the data presented in Lobel (2013), and consulting with both scholars as to the correctness of the representation. Asi' Sibale is also known as Concepcion or Maestro de Campo.

### Diagram 7abc



<b>SSOR</b>	Southern Sorsoganon	<b>CUL</b>	Culaba Waray
<b>NSAM</b>	Northwestern Samareño	<b>LEY</b>	Leyte Waray
<b>ESW</b>	Eastern Samar Waray	<b>ABU</b>	Abuyog Waray
<b>CAL</b>	Calbayog Waray	<b>WSS</b>	Waray West/South Samar

## Axis Relationships in the Philippines

<b>CSOR</b>	Central Sorsoganon	<b>NEG</b>	Negros Occidental Ilonggo
<b>MAS</b>	Masbatenyo		
<b>POR</b>	Porohanon	<b>ROM</b>	Romblomanon
<b>BAY</b>	Baybayanon/Utudnon	<b>SSIB</b>	Southern Sibuyan Romblomanon
<b>KIN</b>	Kinabalian		
<b>BAN</b>	Bantayanon	<b>NBIN</b>	Northern Binukidnon
<b>ILO</b>	Iloilo Ilonggo	<b>SBIN</b>	Southern Binukidnon
<b>CAP</b>	Capiznon Ilonggo		

**Southern Sorsoganon.** Called “Gubat” in McFarland and in Zorc (1977).

**Bantayanon.** Called “Bantayan” in Zorc (1977). More information on Bantayanon is available in Allen (2022).

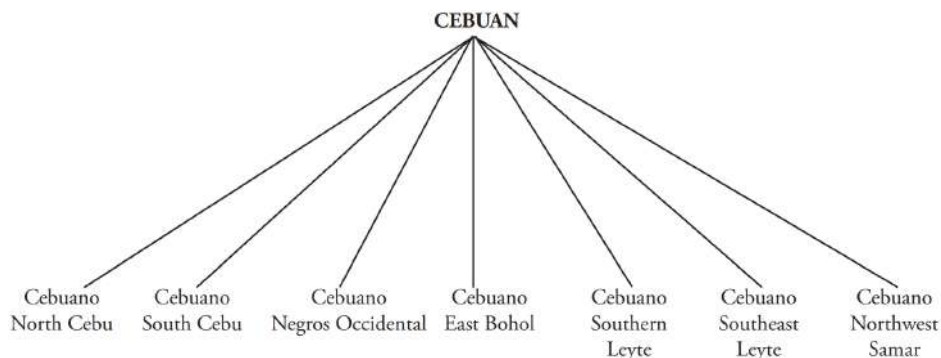
**Ilonggo.** Also known as Hiligaynon. According to Lobel (R. D. Zorc, personal communication, October 18, 2021), the Ilonggo language has three dialects: Iloilo, Negros Occidental, and Capiz.

**Porohanon.** Called “Camotes” in Zorc (1977). Work on this speech form was also done by Cruz et al. (2018: paper read at the 13<sup>th</sup> Philippine Linguistics Congress) and Santiago (2019: paper presented at the 2019 Philippine Indigenous Languages Lecture Series).

**Baybayanon.** Also known as Utudnon, a name first coined by Carl Rubino in his work “Utudnon, an undescribed language of Leyte” (2005). Lobel (2009) proposed to change it to Baybayanon mainly because the name “Utudnon” refers only to a single barangay, while the language is spoken in five or six barangays of Baybay, Leyte. Separately, he also noted that Utudnon was erroneously listed as a dialect of Waray-Waray in Ethnologue.

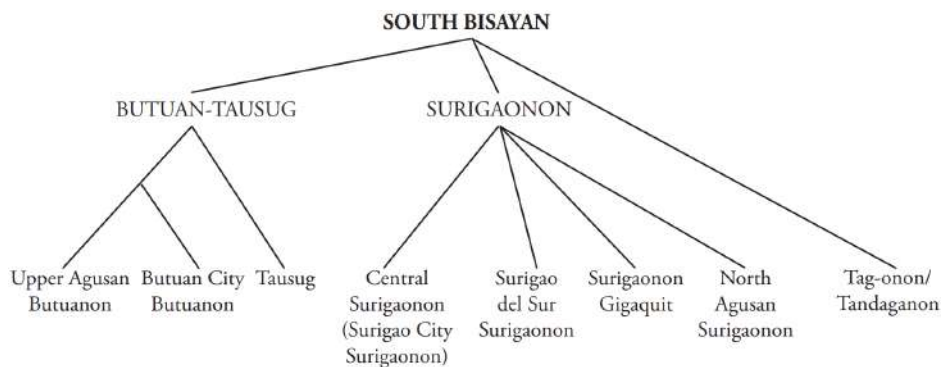
## The Archive

### Diagram 7abd



The Cebuano tree diagram was modified from Zorc (1977) and updated after consultation with Jason Lobel, who did further analysis of the Philippine languages (Lobel 2013).

### Diagram 7abe



**Surigaonon and Jaun-Jaun.** Zorc (1977) made a distinction between “Surigao” and “Jaun-Jaun.” The latter is simply a playful exonym-turned endonym based on the fact that the word *jaon*, an existential marker meaning ‘there is, have, has,’ is unique in having

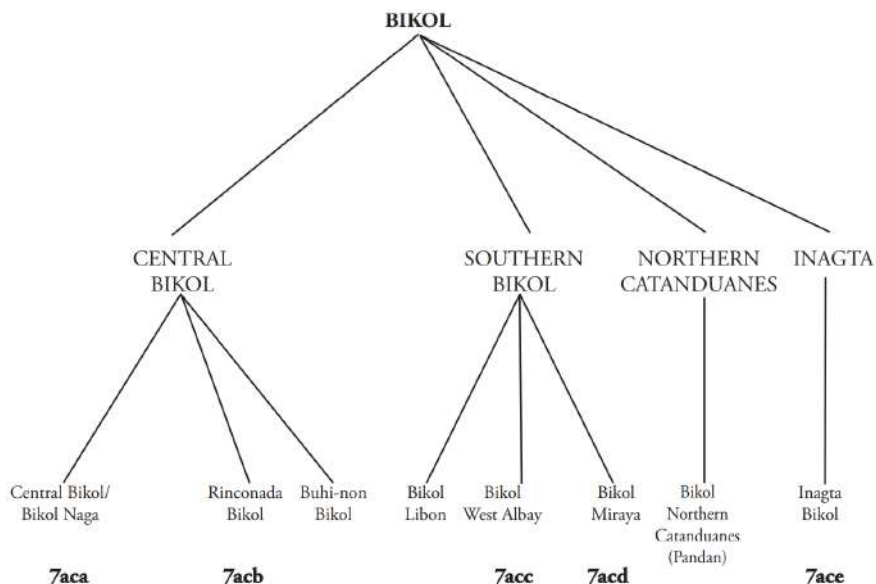
that meaning compared to neighboring languages like Butuanon, Tandaganon, Kamayo, and Cebuano.

**Surigao del Sur Surigaonon and Kantilan.** “Kantilan” is named after Cantilan town in Surigao del Sur in Zorc (1977). It is called Surigao del Sur Surigaonon (Northern Surigao del Sur) in Lobel (2013).

**Tag-onon/Tandaganon.** Called Naturalis in Zorc (1977). Zorc noted that when he asked speakers what they called their language, they gave him the term <naturalis> from Spanish *naturales* ‘natural, native,’ because they wanted to distinguish it from Cebuano which is the prevalent trade language in that area. However, as Zorc learned later on, this is not a term they would normally use (personal communication, December 2, 2021). Lobel correctly named the lect “Tandaganon” after the name of the city, Tandag, Surigao del Sur, and “Tag-onon” after the municipality of Tago’, Surigao del Sur.

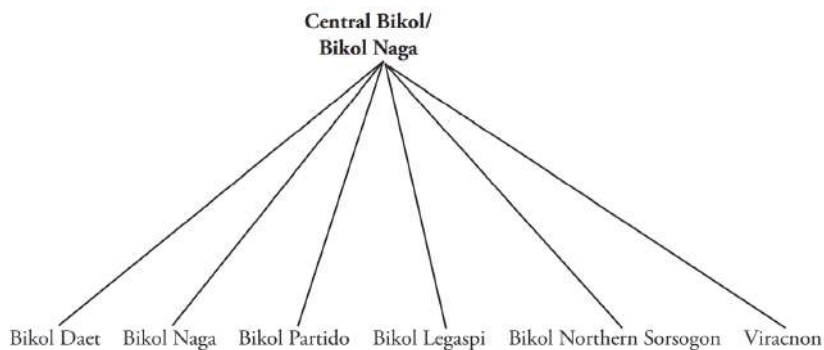
## The Archive

### Diagram 7ac



The Bikol tree diagrams are adapted from Lobel (2013) based on further consultation with the author (R. D. Zorc, personal communication, September 14, 2021; December 27, 2021).

### Diagram 7aca



## Axis Relationships in the Philippines

Diagram 7acb

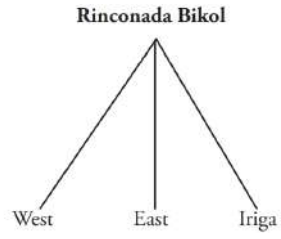


Diagram 7acc

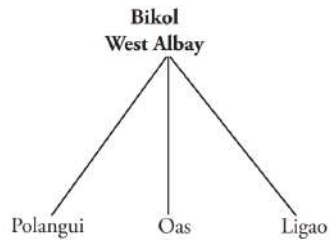
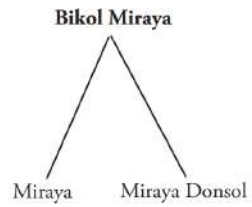
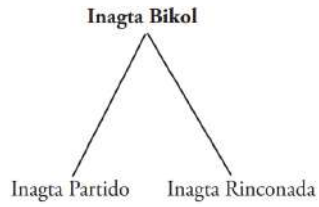


Diagram 7acd

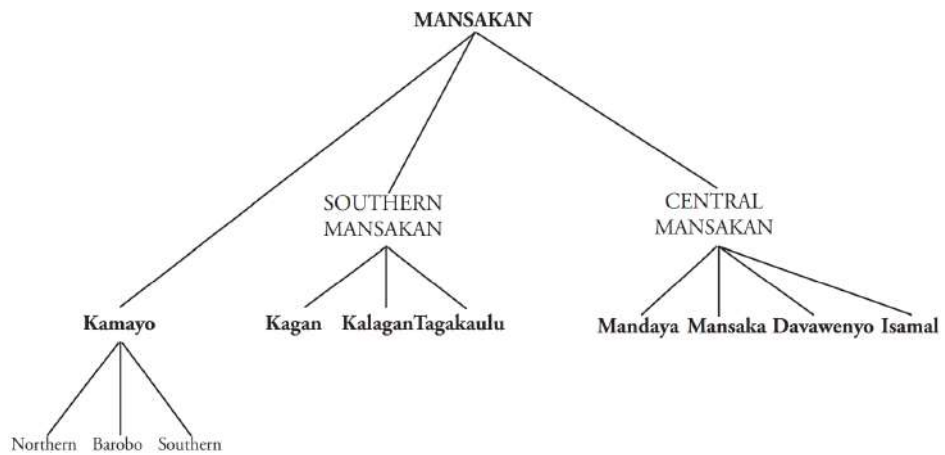


## The Archive

### Diagram 7ace



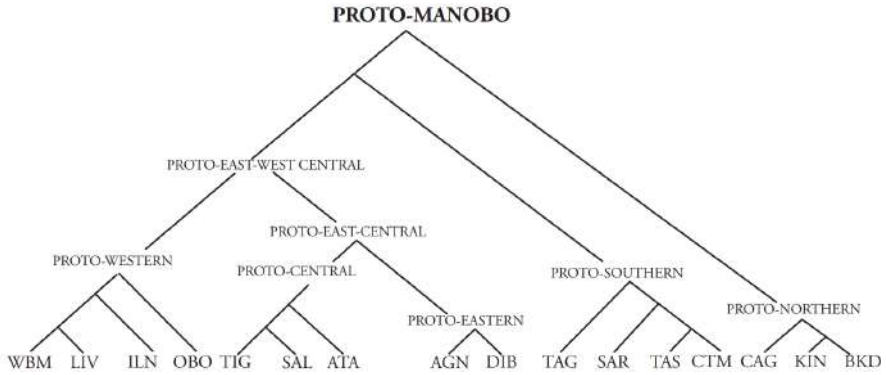
### Diagram 7ae



The above tree diagram is based on Lobel (2013).



Diagram 7ba

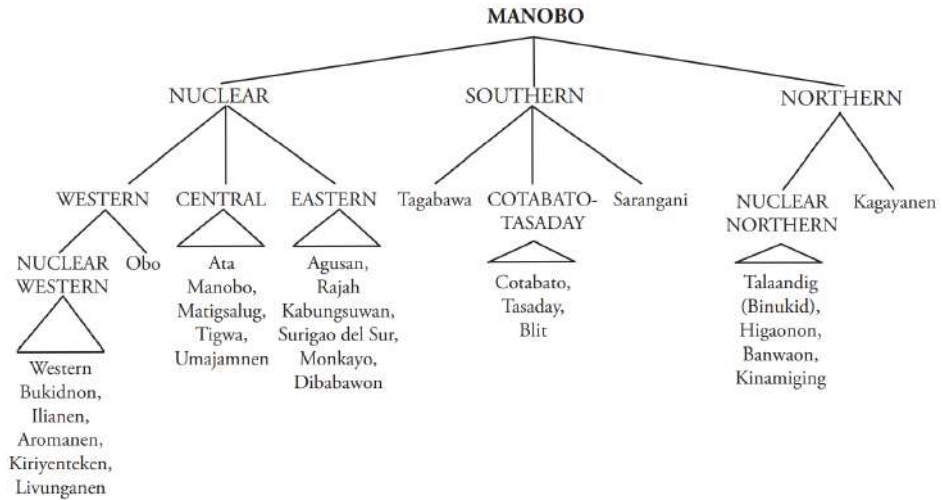


**WBM** Western Bukidnon  
Manobo  
**LIV** Livunganen  
**ILN** Ilianen Manobo  
**OBO** Obo Manobo  
**TIG** Tigwa Manobo  
**SAL** Matigsalug Manobo  
**ATA** Ata Manobo  
**AGN** Agusan Manobo

**DIB** Dibabawon Manobo  
**TAG** Tagabawa  
**SAR** Sarangani Manobo  
**TAS** Tasaday  
**CTM** Cotabato Manobo  
**CAG** Cagayano  
**KIN** Kinamigin  
**BKD** Binukid

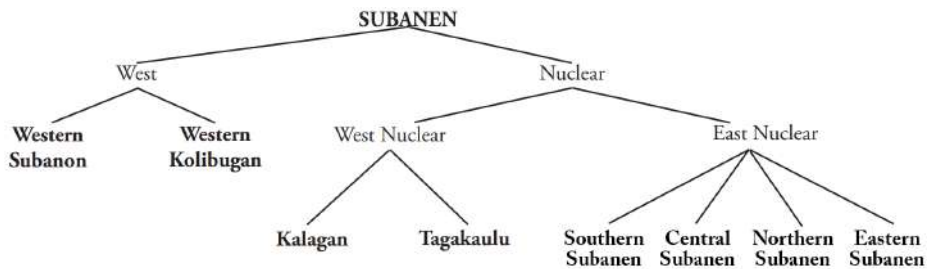
The above tree diagram is based on Elkins (1974).

## Diagram 7bb



The above tree diagram is based on Lobel (2013) after consultation with the author (R. D. Zorc, personal communication, December 8, 2021). Lobel uses triangles for this tree diagrams as a means of grouping together languages for which more detailed analysis remains to be done.

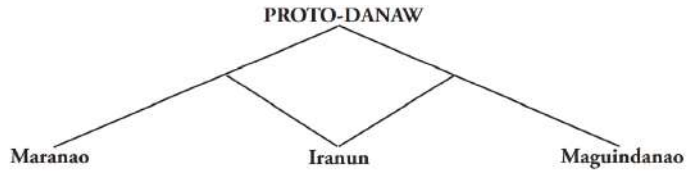
## Diagram 7c



The above tree diagram is based on Lobel (2013).

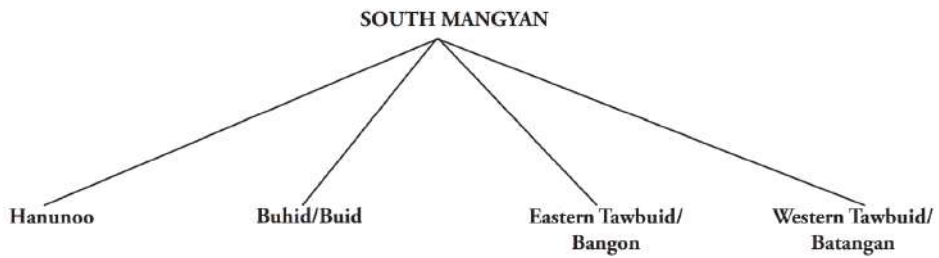
## Axis Relationships in the Philippines

### Diagram 7d



The above tree diagram is based on Allison (1979).

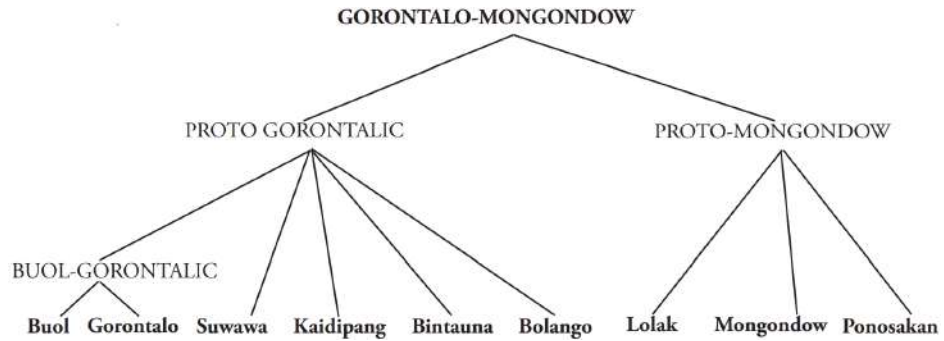
### Diagram 7e



The above tree diagram is based on Pennoyer (1980).

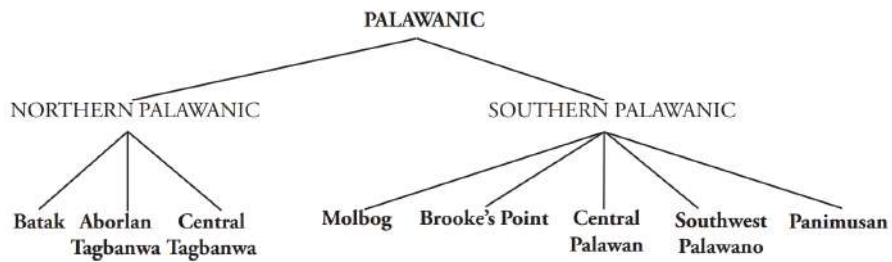
## The Archive

### Diagram 7f



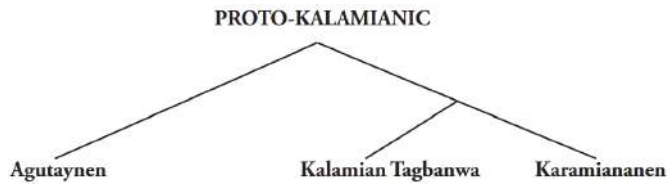
The above tree diagram is based on Sneddon & Usup (1986).

### Diagram 7g



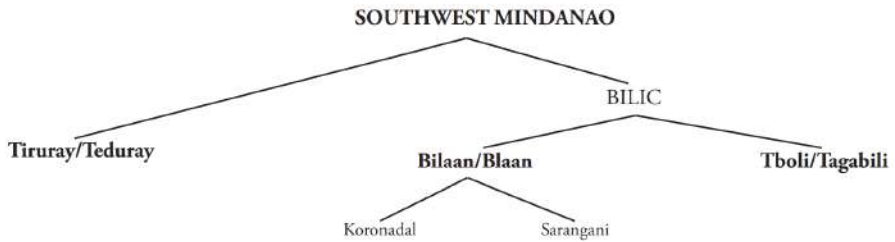
The above tree diagram was drawn in consultation with R. David Zorc (personal communication, September 1, 2021).

## Diagram 8



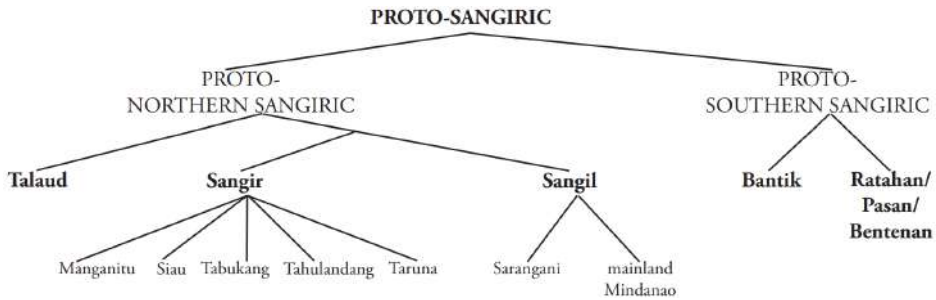
The above tree diagram is based on Himes (2007) in consultation with the author (personal communication, August 10, 2021).

## Diagram 11



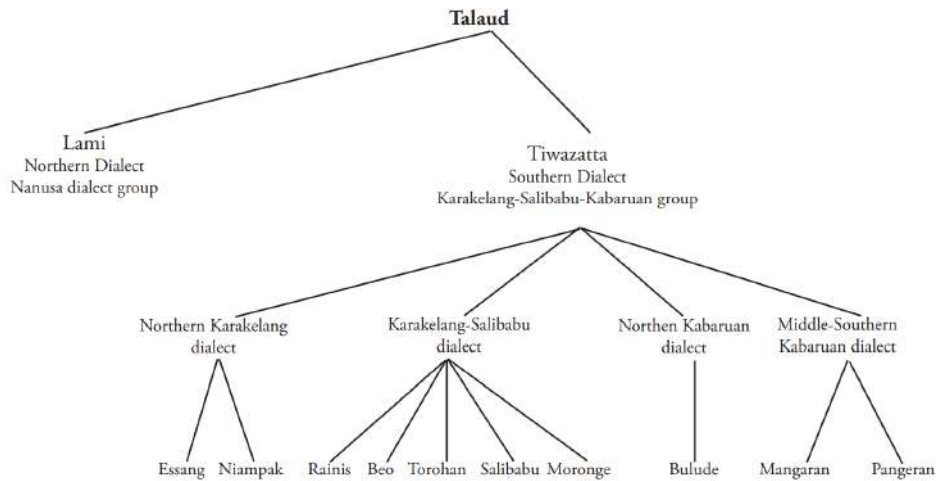
The above tree diagram was created in consultation with R. David Zorc (personal communication, September 1, 2021).

## Diagram 12



The above tree diagram is based on Sneddon (1984).

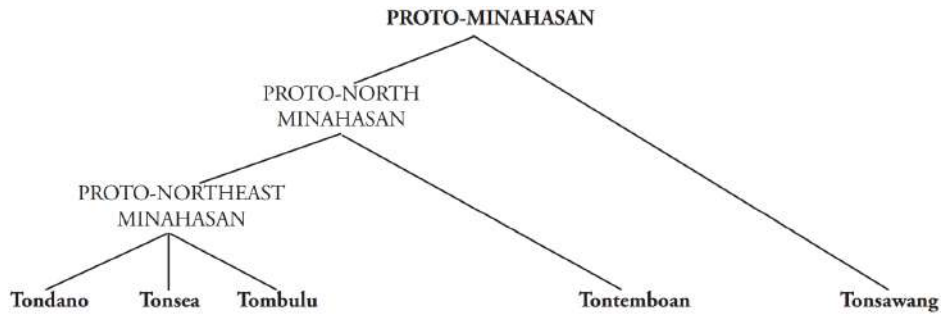
## Diagram 12a



Utsumi (2016) categorized the Talaud dialects into two large groups, with one group further divided into four subgroups. She based the major divisions on phonotactics, while the smaller groups are based on sound correspondences. The Essang, Niampak, Rainis, Beo, Torohan

dialects are spoken on Karakelang Island; the Salibabu and Moronge dialects are spoken on Salibabu Island; the Bulude, Mangeran and Pangeran dialects are spoken on Kabaruan Island.

**Diagram 13**



The above tree diagram is based on Sneddon (1978).

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# Appendix C

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
1	Aborlan Tagbanwa	Abr	tbw	Palawanic	06 Palawan-Kalamian 07 Palawan-Mindoro 15 *R > y
2	Agutaynen	Agy	agn	Kalamianic	06 Palawan-Kalamian 07 Palawan-Mindoro 15 *R > y
3	Aklanon	Akl	akl	West Bisayan	01 North Bisayan 10 Palawan-Mindoro 15 *R > y
4	Alangan	Aln	alo	North Mangyan	07 Palawan-Mindoro 15 *R > y
5	Amganad Ifugao	Amg	ifa	Central Cordilleran	05 Central Luzon 13 Eastern Luzon
6	Asi'	—	asz	Asi'/Banton	01 North Bisayan 10 Bisayan-Bikol
7	Ata Manobo	Ata	atd	Manobo	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
8	Atta	Atta	azt, att, atp	Cagayan Valley	04 Northern Luzon 13 Eastern Luzon
9	Ayta Abellen	—	abp	Central Luzon	02 Southern Luzon
10	Ayta Mag-indi	—	blx	Central Luzon	02 Southern Luzon
11	Baao Rinconada	—	—	Southern Bikol	01 North Bisayan
12	Bagobo Klata	—	bgi	Southeast Mindanao	08 Southern Mindanao

## The Archive

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
13	Balangaw	Blw	blw	Central Cordilleran	05 Central Luzon 13 Eastern Luzon
14	Bambang Isinay	BamIsi	inn	Central Cordilleran	12 Western Luzon
15	Batad Ifugao	Btd	ifb	Central Cordilleran	05 Central Luzon
16	Batak	Btk	bya	Palawanic	06 Palawan-Kalamian 07 Palawan-Mindoro 15 *R > y
17	Bayninan Ifugao	Byn	ify	Central Cordilleran	05 Central Luzon
18	Bikol	—	bik	Bikol	02 Southern Luzon
19	Binukid	—	bkd	Manobo	08 Southern Mindanao
20	Boholano	Boh	—	Cebuan	10 Bisayan-Bikol
21	Bolinao	Bol	smk	Central Luzon	02 Southern Luzon 12 Western Luzon 15 *R > y
22	Bontok	—	bnc	Central Cordilleran	05 Central Luzon
23	Boso	—	—	Mansakan	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
24	Botolan	Bot	sbl	Central Luzon	02 Southern Luzon 05 Central Luzon 12 Western Luzon 15 *R > y
25	Buhid	Buh	—	South Mangyan	07 Palawan-Mindoro 15 *R > y
26	Buhi-non	Buhi	ubl	Southern Bikol	01 North Bisayan 02 Southern Luzon 10 Bisayan-Bikol
27	Bulalakawnon	Blk	hnn	West Bisayan	01 North Bisayan 02 Southern Luzon 10 Bisayan-Bikol
28	Butuanon	But	btw	South Bisayan	03 Eastern Mindanao 10 Bisayan-Bikol
29	Capiznon	—	cps	Central Bisayan	01 North Bisayan
30	Caraga	Car	—	Mansakan	03 Eastern Mindanao 09 Central Mindanao

## Axis Relationships in the Philippines

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
31	Casiguran Dumagat Agta	CDAgta	—	Northeast Luzon	02 Southern Luzon 04 Northern Luzon 05 Central Luzon 13 Eastern Luzon
32	Cebuano	Ceb	ceb	Cebuan	10 Bisayan-Bikol
33	Central Mindanao Manobo	—	—	Manobo	08 Southern Mindanao
34	Central Sorsoganon	CSor	—	Central Bisayan	01 North Bisayan 02 Southern Luzon 10 Bisayan-Bikol
35	Central Subanen	CSub	syb	Subanen	09 Central Mindanao
36	Central Tagbanwa	—	tgt	Palawanic	06 Palawan-Kalamian
37	Datagnon	Dtg	—	West Bisayan	01 North Bisayan
38	Dibabawon Manobo	Dbw	mbd	Manobo	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
39	Dispoholnon	Dsp	—	West Bisayan	01 North Bisayan
40	Gaddang	—	gad	Cagayan Valley	04 Northern Luzon 13 Eastern Luzon
41	Hanunoo	Han	hnn	South Mangyan	01 North Bisayan 02 Southern Luzon 07 Palawan-Mindoro 15 *R > y
42	Ibaloi	Ibl	ibl	Southern Cordilleran	05 Central Luzon 12 Western Luzon
43	Ibanag	Ibg	ibg	Cagayan Valley	04 Northern Luzon
44	Ibatan	Ibt	ivb	Bashiic/Batanic	14 Bashiic-Ilokano
45	Ifugao	Ifg	ifb, ify, ifu, ifk	Central Cordilleran	12 Western Luzon
46	Ilianen Manobo	Iln	mbi	Manobo	08 Southern Mindanao 09 Central Mindanao
47	Ilokano	Ilk	ilo	Ilokan	04 Northern Luzon 12 Western Luzon 14 Bashiic-Ilokano
48	Ilonggo/ Hiligaynon	Hil	hil	Central Bisayan	01 North Bisayan

## The Archive

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
49	Ilongot	Ilt	ilk	South Cordilleran	12 Western Luzon
50	Iranun	Ira	ilm	Danao	08 Southern Mindanao
51	Iraya	Iry	iry	North Mangyan	02 Southern Luzon 07 Palawan-Mindoro 15 *R > y
52	Isamal	—	kqe	Mansakan	03 Eastern Mindanao 09 Central Mindanao
53	Isinay	Isi	inn	Central Cordilleran	02 Southern Luzon 05 Central Luzon 12 Western Luzon
54	Isnag	Isg	isd	Cagayan Valley	04 Northern Luzon 05 Central Luzon
55	Itawit	Itw	itv	Cagayan Valley	13 Eastern Luzon
56	Itbayaten	Itb	ivv	Bashiic/Batanic	12 Western Luzon 14 Bashiic-Ilokano 15 *R > y
57	Itneg	Itg	bjx, itb, iti	Central Cordilleran	04 Northern Luzon 05 Central Luzon 12 Western Luzon
58	Ivatan	Ivt	ivv	Bashiic/Batanic	12 Western Luzon 14 Bashiic-Ilokano 15 *R > y
59	Jaun-Jaun	—	—	South Bisayan	03 Eastern Mindanao
60	Kabasagan	Kbs	—	Mansakan	03 Eastern Mindanao
61	Kagayanen	Kgy	cgc	Manobo	01 North Bisayan
62	Kalagan	Klg	klk	Mansakan	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
63	Kalamansig Cotabato Manobo	K-C	mta	Manobo	08 Southern Mindanao
64	Kalamian Tagbanwa	Kal	tbk	Kalamianic	06 Palawan-Kalamian 07 Palawan-Mindoro 15 *R > y
65	Kalinga	Kla	kkk, kmd, kmk, kml, knb	Central Cordilleran	04 Northern Luzon 13 Eastern Luzon

## Axis Relationships in the Philippines

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
66	Kamayo	Kam	kyk	Mansakan	03 Eastern Mindanao 08 Southern Mindanao
67	Kankanaey	Knk	kne	Central Cordilleran	05 Central Luzon 12 Western Luzon
68	Kankanaey-N	KnkN	xnn	Central Cordilleran	04 Northern Luzon 05 Central Luzon 12 Western Luzon
69	Kankanaey-S	KnkS	—	Central Cordilleran	04 Northern Luzon 05 Central Luzon 12 Western Luzon
70	Kapampangan	Kpm	pam	Central Luzon	02 Southern Luzon 12 Western Luzon 15 *R > y
71	Karamiananen	Krm	—	Kalamianic	06 Palawan-Kalamian 07 Palawan-Mindoro 15 *R > y
72	Kayapa Kallahan	Kyp	ify	Southern Cordilleran	05 Central Luzon 12 Western Luzon
73	Keley-i Kallahan	Kly	ify	Southern Cordilleran	05 Central Luzon
74	Kiangan Ifugao	Kia	ifk	Central Cordilleran	04 Northern Luzon 05 Central Luzon 12 Western Luzon 13 Eastern Luzon
75	Kinaray-a	Kin	krj	West Bisayan	01 North Bisayan 10 Bisayan-Bikol
76	Koronadal Bilaan	KorBl	bpr	Southwest Mindanao	08 Southern Mindanao
77	Kuyonon	Kuy	cyo	West Bisayan	01 North Bisayan 07 Palawan-Mindoro
78	Legaspi	Leg	—	Northern Bikol	02 Southern Luzon 10 Bisayan-Bikol
79	Libon	Lib	—	Southern Bikol	02 Southern Luzon 10 Bisayan-Bikol
80	Looknon	Lok	—	West Bisayan	01 North Bisayan
81	Luba	—	xnn	Central Cordilleran	04 Northern Luzon 05 Central Luzon 12 Western Luzon
82	Maguindanaon	Mgd	mdh	Danao	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao

## The Archive

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
83	Malaweg	Mlw	itv	Cagayan Valley	04 Northern Luzon 12 Western Luzon 13 Eastern Luzon
84	Mamanwa	Mmw	mmn	Mamanwa	03 Eastern Mindanao
85	Manabo	—	—	Central Cordilleran	04 Northern Luzon 12 Western Luzon
86	Mandaya	—	mry	Mansakan	03 Eastern Mindanao
87	Manila Tagalog	MlaTag	tgl	Tagalic	02 Southern Luzon
88	Mansaka	Msk	msk	Mansakan	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
89	Maranao	Mar	mrw	Danao	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
90	Masbatenyo	Mas	msb	Central Bisayan	01 North Bisayan 10 Bisayan-Bikol
91	Miraya	Mir	—	Southern Bikol	02 Southern Luzon 10 Bisayan-Bikol
92	Molbog	Mlb	pwm	Palawanic	06 Palawan-Kalamian
93	Naga	Naga	—	Northern Bikol	02 Southern Luzon 10 Bisayan-Bikol
94	Northern Bikol	NBik	—	Northern Bikol	01 North Bisayan
95	Northern Catanduanes	NCat	—	Northern Catanduanes	10 Bisayan-Bikol 11 Catanduanes
96	Palawano	Pal	plw	Palawanic	06 Palawan-Kalamian 07 Palawan-Mindoro
97	Pamplona Ibanag	Ibg-P	ibg	Cagayan Valley	04 Northern Luzon 13 Eastern Luzon
98	Pandan	Pan	—	West Bisayan	01 North Bisayan 10 Bisayan-Bikol
99	Pangasinan	Png	pag	Southern Cordilleran	02 Southern Luzon 05 Central Luzon 12 Western Luzon
100	Quezon	—	plc	Palawanic	06 Palawan-Kalamianic
101	Remontado/ Hatang-Kayi	—	agv	Central Luzon	02 Southern Luzon 15 *R >y
102	Rinconada	Rin	bto	Southern Bikol	01 North Bisayan 02 Southern Luzon 10 Bisayan-Bikol

## Axis Relationships in the Philippines

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
103	Romblomanon	Rom	rol	Central Bisayan	01 North Bisayan 10 Bisayan-Bikol
104	Sambal	Sbl	sbl	Central Luzon	02 Southern Luzon 05 Central Luzon 12 Western Luzon 15 *R > y
105	Sangil	—	snl	Sangiric	08 Southern Mindanao
106	Sangir	—	sxn	Sangiric	08 Southern Mindanao
107	Sarangani Bilaan	SarBl	bps	Southwest Mindanao	08 Southern Mindanao
108	Sarangani Manobo	SarMb	mbs	Manobo	03 Eastern Mindanao 08 Southern Mindanao 09 Central Mindanao
109	Semirara/ Kaluyanen	Sem	—	West Bisayan	01 North Bisayan 10 Bisayan-Bikol
110	Southern Bikol	SBik	—	Southern Bikol	01 North Bisayan
111	Southern Sorsoganon	SSor	srv	Central Bisayan	01 North Bisayan 10 Bisayan-Bikol
112	Subanen	—	laa	Subanen	03 Eastern Mindanao
113	Surigaonon	Sur	sgd	South Bisayan	03 Eastern Mindanao 10 Bisayan-Bikol
114	Tadyawan	Tdy	tdy	North Mangyan	02 Southern Luzon 07 Palawan-Mindoro
115	Tagakaolo	—	klg	South Bisayan	03 Eastern Mindanao
116	Tagalog	Tag	tgl	Tagalic	02 Southern Luzon 08 Southern Mindanao
117	Tandaganon	Tdg	tgn	South Bisayan	03 Eastern Mindanao
118	Tausug	Tsg	tsg	South Bisayan	10 Bisayan-Bikol
119	Tau't Bato	—	plw	Palawanic	06 Palawan-Kalamianic
120	Tboli	—	tbl	Southwest Mindanao	08 Southern Mindanao
121	Tigwa Manobo	Tig	mbt	Manobo	08 Southern Mindanao 09 Central Mindanao
122	Tiruray	—	tiy	Southwest Mindanao	08 Southern Mindanao
123	Tuguegarao Ibanag	Ibg-T	ibg	Cagayan Valley	04 Northern Luzon 13 Eastern Luzon

## The Archive

	Language(s)/ Dialect	Abbreviation Used in this Paper	ISO 639-3 Code	Subgroup/ Branch	Axis Group
124	Viracnon	Vir	—	Northern Bikol	01 North Bisayan 02 Southern Luzon 10 Bisayan-Bikol 11 Catanduanes
125	Waray	—	war	Central Bisayan	10 Bisayan-Bikol
126	West Albay Bikol	WABik	—	Southern Bikol	02 Southern Luzon 10 Bisayan-Bikol
127	Western Bukidnon Manobo	WBM	mbb	Manobo	08 Southern Mindanao
128	Western Subanon	WSub	suc	Subanen	03 Eastern Mindanao 09 Central Mindanao
129	Yami	—	tao	Bashiic/Batanic	14 Bashiic-Ilokano
130	Yami (Imorod)	—	tao	Bashiic/Batanic	14 Bashiic-Ilokano
131	Yogad	Yog	yog	Cagayan Valley	04 Northern Luzon 13 Eastern Luzon