

KANKANAY AND THE PROBLEM *R AND */ REFLEXES¹

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1. INTRODUCTION. Kankanay is a member of a putative subgroup of Philippine languages which may be labelled Igorot. This subgroup, labelled by Llamzon (1969: 124) the 'Ifugao subgroup'² has as its members at least the following languages: Kankanay (Knk.), Bontoc (Bon.), Ifugao (Ifg.), Balangaw (Blw.), Kalinga (Kla.), and Itneg (Itg.) (also known as Tingguian). It probably also includes Isinay, but available data on this language are sparse, and the evidence for its inclusion is incomplete.

Within the Igorot subgroup, there is evidence for postulating a closer relationship between some languages than others. Kankanay has Bontoc as its closest genetic relative, and Kalinga and Itneg are also more closely related to each other than either is to the other members of the subfamily. One of the phonological innovations shared by the various members of the Igorot subgroup is the falling together of the reflexes of *R, *r, and */.³ The reflex of each of these protophonemes in Kankanay seems at first glance to be not entirely regular, with some forms showing *g* as the *R reflex, while others show apparent phonemic loss, or other reflexes such as *ʔ* or *w*. This situation has been noted by various earlier writers, although no systematic attempt has been made to account for this variation. Conant writes, 'In Kalamian (North Palawan), Pangasinan, and the related Igorot dialects Inibaloi, Kankanai, and Bontok, the RGH consonant [Dyen's *R] appears regularly as *l*, exceptionally as *g*, which sometimes becomes the surd *k*' (1911:78). In his discussion of the development of 'Indonesian *l* in Philippine languages', he noted that both Bontoc and Kankanay sometimes show loss of intervocalic *l*. He stated,

Bontok shows loss of intervocalic *l* in a number of words . . . In Bontok, 'ten' is generally pronounst

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²Llamzon only compared two of the languages of this subgroup, Ifugao and Kankanay. His conclusion (1969:126) that Kankanay and Ifugao are perhaps dialects of the same language tends to overstate the case. The phonological structure of the two languages are not identical, as he suggests. Ifugao has a five vowel system, in which *pepet* has generally become *o*. Kankanay retains a four vowel system with *pepet* reflected as a central vowel. Various differences also exist in the consonant system, not the least of which is the *h* of Ifugao corresponding to Kankanay *s*. Llamzon has invariably changed the Kankanay *s* to *h* in all the examples quoted from Vanoverbergh 1933. Other differences in the phonologies of these languages will appear through the course of this paper.

³This is not an exclusively shared innovation. It is found in other languages of Northern Luzon, such as Kallahan, Inibaloi, and Pangasinan. A forthcoming publication will deal with the problems of the subgrouping of these languages, and will present evidence for the relationships claimed above for languages in the Igorot subgroup.

póo, but *pōlo* is also heard [*sic et passim*]. The loss is, however, less common in Bontok than in Tagalog. The *l* is retained in Bontok *čálan*: Tag. *dá'an*; Sulu *dān* < Philip. *dalan* 'way'; *tólo* 'three'; *ólo* 'hed'; *ili*: Iloko *ili* 'town'; *pili* 'choose'; *wálo* 'eight'; *čila*: Tag. *dila* 'tung'; *pilai* < IN *pilai* 'lame.' . . . The language of the Kankanai Igorots of the sub-province of Benguet, North Luzón, drops intervocalic *l* in Kankanai (*sim*)*pó* < IN *pulu* 'ten'; *búwan*: IN *bulan* 'moon'; *waó* < IN *walu* 'eight'; but retains it in *dila* 'tung,' and in *toló* 'three.' The RGH consonant regularly becomes *l* in Kankanai. This *l* is lost in Kankanai *uwat*: IN *urat*, *ugat*, *uhat* 'vein,' which, like Kankanai *búwan*, has the labial glide *w*' (1916:184-5).

Verstraelen likewise noted the sound change as follows: 'In the central and southern parts of the Mountain-Province we have an *l* equivalent to the *r* or *g* (< *r*) in other dialects, except the few loanwords with the *g*-feature mentioned above' (1962:854). He also notes, 'There seems to have been a soundshift *l* > *y* or *l* > ϕ in this dialect [Bontoc] . . .' (1962:854).

Llamzon (1969) made a systematic analysis of the reflexes of **R* in Kankanay as part of his study subgrouping nine Philippine languages. He attempted to correlate the exceptional *g* reflexes of **R* in Kankanay with Dyen's various **R* proto-phonemes (Dyen 1953). The loss of *l* in some Kankanay forms he footnoted as unexplained.

This paper has two purposes: a. to show that the apparent *g* reflexes of **R* in Kankanay cannot be accounted for by including a fragmented **R* in the proto-Philippine sound system; b. to show that the various reflexes of proto-Igorot **l* (< proto-Philippines **l*, **R*, **r*) in Kankanay are the results of phonological rules which are synchronically operative in several Igorot languages, but have been lost in Kankanay, and subsequently obscured by heavy borrowing.

2. THE *g* REFLEX OF **R*. As indicated above, the regular reflex of **R* in Kankanay, as in the other Igorot languages, is *l*; e.g. Knk. *bibil*⁴ 'labia majora' < **bibil*⁵ 'lips'; *bila* 'elephant ear' < **biR*₁*aq*⁶ 'kind of plant'; *labi* < **Rabi*?(*i*?*h*) 'night'; *lákit* < **R*₃*akit*⁶ 'raft'; *lamut* < **Ramut*⁷ 'root'; *kali* < **kaRi* 'speak, language'. According to Llamzon (1969:17), however, Kankanay shows *g* reflexes for **R*₁ in medial and final positions⁸ (Knk. *tágu* < **taR*₁*uq* 'hide', ?*ápug* < **apuR*₁ 'lime'), **R*₂ in all positions⁹

⁴Kankanay data have been taken from various sources - Vanoverbergh 1933, Scott 1957, and Reid 1971. The latter two sources document the Northern Kankanay dialect as spoken respectively in Sagada town and in Balugan (Bugang), a barrio of Sagada municipality. The former source is of the dialect spoken in Bauko, south of Sagada. The dialects are not phonologically differentiated. All Kankanay forms are rewritten phonemically, with *e* representing a mid to high central vowel, and representing length on an open penultimate syllable. Hyphen is used to indicate a morphological boundary within the word.

⁵Asterisked forms unless otherwise indicated are proto-Austronesian reconstructions taken from Dyen and McFarland 1970. However, when citing examples used by Llamzon to support his reflexes of the various **R* protophonemes, the reconstructions given by Llamzon will be used. I have not attempted to verify whether the reconstructions used by Llamzon containing a **R* with subscript which have not appeared elsewhere in the published literature are in fact valid reconstructions. Llamzon does not include the evidence for such reconstructions.

⁶From Dyen 1953.

⁷From Zorc 1971.

⁸Llamzon lists *l* as the Kankanay reflex for medial and final **R*₁ in his chart of correspondences, but gives forms with *g* reflexes in his examples (1969:21).

⁹The example given for -*R*₂- by Llamzon (1969:21) shows a *w* although he gives *g* as the reflex

(Knk. *gasut* < **R*₂*atus* 'hundred', *busug* < **besuR*₂ 'satisfied'), **R*₃ in medial and final positions (Knk. *peges* 'sharp, acute', *pegsen* 'strain oneself, exert' < **peR*₃*es* 'squeeze out', *?ulug* < **huluR*₃ 'fall, meaning'), and **R*₄ in all positions (Knk. *gúwan* < **R*₄*uqan* 'gap', *bágu* < **baR*₄*u[h]* 'hibiscus', *dápug* < **DapuR*₄ 'hearth').

Since Llamzon thought it necessary to postulate **R*₁ - **R*₄ for proto-Philippines only on the basis of Northern Luzon evidence¹⁰, and primarily on the evidence appearing in Ifugao and Kankanay, it is essential that the evidence be examined critically, and other possible hypotheses of the origin of the *g* forms be given serious consideration.

(a) The **R*₁ reflexes. Llamzon correctly showed an *l* reflex for initial **R*₁ reconstructions (Knk. *lamut* < **R*₁*amut*¹¹ 'root'). However examples can also be adduced in which initial **R*₁ appears as *g* in Kankanay – *gábut* < **R*₁*ábut* 'tear off; rip out'. Examples of **R*₁ in medial and final position can also be found in which the reflex was not *g* but *l* (in proto-Kankanay-Bontoc); e.g. *(*dD*)*áR*₁*áQ*₂*e* > Knk. *da-da?á*¹², Bon. *dála* 'blood'; **táR*₁*uq* > Knk. *tá?u* 'set in, insert'; **wáikuR*₁ > Knk. *?íku*, Bon. *?íkul* 'tail'; **DátaR*₁ > Knk. *data*, Bon. *datal* 'level'.

(b) The **R*₂ reflexes. As indicated above (see footnote 9), the example cited by Llamzon as a Kankanay reflex of medial **R*₂ does not show a *g* reflex in Kankanay, but *w*, a result of the loss of *l* following a back vowel. He could have cited **beR*₂*as*¹¹ 'husked rice' > Knk. *begas* 'kernel, substance, meat', as well as **baR*₂*qaŋ*⁶ 'molar' > Knk. *bagaŋ* 'neck'. There are no *l* reflexes of an unambiguous **R*₂ in final position in Kankanay.

(c) The **R*₃ reflexes. The Kankanay form given by Llamzon as a *g* reflex of medial **R*₃ is a doubtful reflex of **peR*₃*es*¹¹ because of the semantic distance of the forms – 'squeeze out' vs. 'sharp, acute, violent'. It is a possible borrowing of Ilocano *pegges* 'strong, vehement, violent'. Kankanay does however have a possible reflex of **peR*₃*es*, indicating an *l* reflex and having the requisite meaning – Knk. *pét-an* 'to squeeze out', Bon. *pelet* 'to copulate, of birds and chickens'. The final *t* in these forms is unexplained¹³. Medial **R*₃ has both *g* and *l* in the doublet reflexes of **buR*₃*ew*⁶ 'chase away' > Knk., Bon. *búgaw* 'shout', and Knk. *béwew*, with Bon. *bélew* 'chase birds from the rice fields'.

(d) The **R*₄ reflexes. There is an apparent doublet in Kankanay reflecting in his chart of correspondences, Knk. *?úwas* < **huR*₂*as* 'wash'. (His chart should also show *g* reflexes – not *l* – of **-j-* in Ifugao and Kankanay, to agree with his examples.)

¹⁰The languages in the Central Philippines regularly have *g* reflexes for the various **R* phonemes.

¹¹A Llamzon reconstruction.

¹²Where it is apparent that *l* has undergone a further sound change in Kankanay, the corresponding Bontoc form is also cited, if it occurs. All Bontoc data are from Reid 1972. The dialect represented is that of Guinaang barrio, in which *l* has not undergone additional sound change. Instances cited in other literature to show loss of *l* in Bontoc, are from the dialect spoken in the town of Bontoc where the dialect has been heavily influenced by Ilocano and Kankanay. For a phonological statement of Bontoc, see Reid 1963.

¹³Note however Inseg *paggat* 'express, squeeze out' in which *t* is a regular reflex of **s*.

**DapuR*₄¹¹ 'hearth'. Llamzon cited *dápug* 'hearth'. Its doublet is Knk. *dápu*, Bon. *dápul* 'ashes'.

The examples cited above show that it is unlikely that the *g* forms in Kankanay can be considered as evidence for distinct **R* phonemes in the Philippines. There is no correlation between the postulated **R* phonemes and the apparent *l* and *g* reflexes in Kankanay. On the other hand the data strongly support the view that **R* was an undifferentiated phoneme in proto-Philippines and was regularly reflected as *l* in proto-Kankanay-Bontoc, as in the other languages of the Igorot subgroup. Further examples of the reflexes of **R* in Kankanay will appear below. How then is one to account for the *g* forms in Kankanay?

Of several explanations, the most obvious is borrowing. In the last fifty years, Kankanay has been strongly influenced by incoming speakers of extra-montane languages. This is especially true of the Lepanto area, where the mining industry has attracted laborers from as far away as the Tagalog area, as well as from the northern provinces of Apayao and Cagayan, where the languages all show **R* > *g*. Whereas the linguistic and cultural change in situations such as this is often hard to document, Vanoverbergh (1954:15) showed its great extent in Bauko. Referring to the large body of songs, tales and prayers which he collected around 1912, forty years later he wrote, '. . . here in Bauko, almost no one understands them any more, with the exception of a few old people' (1954:15).

It is doubtful however that it has been the incoming Tagalog and Ibanag speakers who have affected the language to this degree. The primary influence has been from Ilocano (Ilk.), which is the lingua franca throughout all the area where the Igorot languages are spoken, so that the great majority of men are bilingual to some degree. But in most environments **R* became Ilk. *r*, which if borrowed would have become *l* in Kankanay, not *g*. Such borrowing has undoubtedly occurred, probably accounting for many of the forms in Kankanay with *l*, where according to the rules described below one would expect a different reflex. For example, Knk. *balu* 'new' is probably a borrowing of Ilk. *baru* 'new'. The inherited form in Kankanay should be *ba?u*.

When one examines Ilocano, however, he finds that many of the forms with aberrant *g* reflexes in Kankanay occur also with *g* reflexes in Ilocano. It is probably borrowing of these forms rather than from Tagalog or Ibanag which accounts for many of the cases where doublets occur in Kankanay. In fact borrowing has been mutual. It is likely that Knk. *dapug* 'hearth' was borrowed from the Ilocano form with the same shape and meaning, whereas Ilk. *dapu* 'ashes' was borrowed from the corresponding Kankanay form, after the final *l* became ϕ (note Bon. *dapul* 'ashes').

The origin of the aberrant Ilocano *g* reflexes of **R* was fairly thoroughly discussed by Conant (1911). He gave three explanations for these forms, the first of which was borrowing. He noted the large number of doublets which occur of forms having both

g and *r* reflexes of *R in Ilocano. Although he did not account for the origin of the doublets, he was aware that borrowing had taken place. He said,

It appears from a study of all the material for Ilk. that the original representation of the RGH series in that language was *r* unless disturbed by secondary laws. This *r* has been preserved in a large number of the most common words . . . In other cases the *r* and *g* forms exist side by side, sometimes with different shades of meaning . . . while in some cases the new *g* has entirely replaced the older *r*. Furthermore some *g* words have crept in from pure *g* languages, chiefly Ibg. and Tag. (Conant 1911:76).

His second explanation was that *R became Ilk. *g* in two restricted environments: a. 'when preceded by original *pepet* and followed by a non-*pepet* vowel' (Conant 1911:76); b. in words containing an *l*. His rule is stated as follows, 'Iloko and Tirurai, like Toba and Dayak, do not admit both *l* and *r* in the same Grundwort' (Conant 1911:77).

His third explanation was that *R became a 'stereotyped Phil. *g*' (Conant 1911:82). In other words either in proto-Philippines or in the protolanguage of one of the major subgroups, some *R forms appeared to him to have changed idiosyncratically to *g*, with the result that all of the daughter languages show reflexes of **g* for those forms, and not *R.

The latter explanation of the origin of some Ilocano *g* words may account for most of the aberrant *g* reflexes in Kankanay for which no doublet occurs, and which do not have cognates in other Igorot languages with *l* reflexes¹⁴. The Kankanay forms which fall into this category include *busug* 'satiated', *bágu* 'hibiscus', *dágum* 'needle', *gábut* 'pull up, uproot', *begas*¹⁵ 'kernel, substance, meat', *?igup* 'to sip, drink broth', *gasut* 'hundred', *digus* 'bathe'. All of these forms show *g* wherever a cognate occurs in other Igorot languages and likewise have *g* in their Ilocano cognates. They are probably reflexes of forms occurring in the language ancestral to Ilocano and the Igorot languages, in which *R became *g*¹⁶. At present, it does not seem possible to isolate any phonological conditioning factor, although the majority of the forms contain a voiced stop as one of the other segments. Perhaps there was an assimilatory process involved which tended to change a velar fricative (the generally accepted phonological value of *R) to a velar stop in forms containing another stop or voiced stop.

3. THE *l* REFLEXES. Many Kankanay forms show evidence of secondary sound changes, by which *l* was either lost, or became *ʔ*, *ɣ*, or *w*¹⁷. Conant (1916:185)

¹⁴Thus excluding forms like Knk. *?ugsa* 'deer' which appears to be a borrowing from Ilocano because of cognate forms with an *l* in Ifugao and Inibaloi, e.g. Ifg. *?ulha*, Ibl. *?ulsa* 'deer'.

¹⁵Knk. *bagás* 'husked rice' is probably a borrowing from Ilocano *bagas* 'husked rice, etc.', because of the aberrant *a* first vowel instead of the expected *e*, occurring also in Kankanay.

¹⁶If Inibaloi is considered to be more closely related to the Ifugao subfamily than to Ilocano (as indeed much of the qualitative evidence points to) then the various forms meaning 'hundred' in the Igorot languages — Knk., Bon., Itg., Kla., *gasut*, Ifg. *gahut*, Blw. *gasut* — must be considered to be borrowings of Ilk. *gasut*, rather than reflexes of an innovated form, since Inibaloi *dasus* 'hundred' shows evidence of an *l* reflex of the initial *R. (Ini. *l* > *d* initially, see Conant 1916:190).

¹⁷The changes which affected the *l* reflex of *R, also operated on the *l* reflexes of **l* and **r*. In this section therefore evidence will be adduced using forms which are reflexes of any one of these

stated the environment for loss as 'intervocalic', e.g. Knk. *?uwat*, Bon. *?ulat* 'vein'; Knk. *búwan*, Bon. *búlan* 'moon'. He did not account for the many cases in which *l* is not lost intervocalically, e.g. Knk. *díla* 'tongue', *dúlig* 'spine', *?íli* 'village'. Nor did he account for loss of *l* which was not intervocalic, e.g. Knk. *?ágew*, Bon. *?algeu* 'sun, day', Knk. *?a??u*, Bon. *?al?u* 'pestle'; Knk. *deppag*, Bon. *deplag* 'cliff'. Loss of *l* finally in some words was also not accounted for by Conant, e.g. Knk. *buka*, Bon. *bukal* 'wild pig'; Knk. *?abe*, Bon. *?abel* 'weave'; Knk. *?ábu*, Bon. *?ábul* 'drive away'.

Evidence for the phonological rules which operated to bring about these changes can be found by examining the synchronic rules affecting *l* in Bontoc and other Igorot languages.

(a) The Bontoc *l*. With the exception of the dialect spoken in Bontoc town and the barrios south of Bontoc such as Talubin and Bayyo, all dialects of Bontoc have two variants for the *l* phoneme. This is true also of Samoki across the river from Bontoc, and less than 1 kilometer from the poblacion. A description of this variation first appeared in Reid 1963. The description given at that time outlined the environment in which the [1] variant occurred as follows:

(i) word initially, e.g. [láta] 'kerosene can', [liŋ?ag] 'life, spirit'.

(ii) adjacent to [i], but not [y], e.g. [ʔíla] 'see', [čálig] 'iron plough share', [papil] 'paper'.

(iii) as the second member of a consonant cluster which has for its first member any consonant occurring at the alveolar or interdental points of articulation, or any other consonant preceded by *i*, e.g. [naputlak] 'broken', [nakaslaŋ] 'mixed', [tinlek] 'hole made by boring', [figlá?in] 'to force', [ʔumiblay] 'to rest'.

(iv) preceding another alveolar lateral continuant, e.g. [fallíta] 'crowbar', [čállik] 'Dalikan (village name)'.

The other variant, [r], a retroflexed low central semi-vowel, was described as being in complementary distribution with [1].

Since it is clear that the rules which are currently operative to bring about this variation were added at a period in the history of the language when there was an undifferentiated *l* (the result of the falling together of **R*, **r*, and **l*), it seems more natural to state the environments in which the change took place, rather than those in which the change did not take place as in the above description.

The following rules are necessary.

Bon. 1. $l > r / [+grave]$ ($[+grave]$) _____

Bon. 2. $r > l / \text{_____} [-grave]$

Bon. 3. $r > l / \text{_____} l [-grave]$

Bon. 4. $l > r / r \text{_____}$

three protophonemes. As in the previous section, Bontoc (Guinaang dialect) or other Igorot languages which have retained the *l* reflex in all positions will be used to verify the Kankanay loss.

The first rule states that the change takes place following any non-front vowel (i.e. *a*, *e* ([i]), and *u*) whether or not there is an intervening labial or velar consonant. This accounts for the [r] in the following forms: [fara] 'lungs', [čira] 'outside', [čúraw] 'kind of basket', [fubrŋ] 'reeds', [saŋrag] 'roast in a pan; [saŋčar] 'vat', [ʔiŋir] 'nose', [čurčur] 'push', [kurpi] 'fold over', [kartib] 'scissors'.

However, Rule 1 also produces such non-occurring forms as the following: *[ʔári], *[farlig] and *[ʔarlan].

Rule 2 changes [r] back to [l] where the immediately following vowel is front, producing the correct form [ʔáli] 'come'.

Rule 3 is an [l] assimilation rule which operates only in the environment of a following front vowel, producing the form [fallig] 'Barlig town'.

Rule 4 is an [r] assimilation rule which operates on any [rl] sequence unaffected by Rule 3, i.e. in the environment of a following mid or back vowel, producing the form [ʔarran] 'a male spirit'.

The validity of this formulation of the rules is supported by the errors usually made by speakers of the dialect in Bontoc poblacion when imitating the speech of the dialects in which [r] occurs. They usually modify their own system by adding Rule 1, but rarely add Rule 2, with the result that [ʔinmálikayu] 'you (pl.) have come' is frequently imitated as [ʔinmárikayu]. A similar error probably accounts for the reason Barlig barrio is spelled as it is on all the maps. It is actually pronounced with a geminate *l* medially. In this instance Rule 3 has not been added. Likewise, Dalican barrio, pronounced [čallik], is sometimes called Darlik by speakers of the Bontoc poblacion dialect.

(b) The Kalinga *l*. Geiser (1958:16–17) describes two variants for Kalinga *l*. The description is similar to that given for Bontoc, with environments stated for the occurrence of the [l] variant, and [λ] occurring elsewhere. The [λ]¹⁸ variant is described as 'a central resonant oral, produced by relaxing the tongue and placing the tip either behind the lower front teeth, or behind the lower lip' (Geiser 1958:17).

There are two main differences between the distribution of the Kalinga variants of *l* and that of the Bontoc variants. One is that in Kalinga there are no geminate sequences of [λλ] corresponding to Bontoc [rr]¹⁹.

In Kalinga then, there is no rule equivalent to the Bontoc Rule 4, and Rule 3 is generalized so that an [λl] sequence becomes [ll] in all environments:

Kla. 3. λ > l / ____ l

The second difference is that [ll] does not become [λ] when it is part of a reduplicative sequence, even though its environment would otherwise result in a change,

¹⁸ Geiser uses the symbol [ɣ] in his published description of Kalinga phonemes (1958). The [λ] symbol appears in his grammatical sketch of Kalinga (Geiser 1961).

¹⁹ Geiser only cites one example where such a sequence occurs not adjacent to *i*. The form is [ʔallóŋ] 'animal's nose ring'. This is probably an adaptation of English *earring*, note Bon. [ʔallir] 'store-bought earring'. The *o* vowel in Kalinga is a regular reflex of a proto-Igorot high central vowel.

e.g. [ʔulʔullítom] 'You (sg.) tell a story.'. In Bontoc, Rule 1 applies in a reduplicative sequence as elsewhere, e.g. [ʔumarʔáli] < [ʔáli + C₁V₁C₂- + -um-] 'coming'. However if the initial consonant of the base is not a glottal stop, subsequent rules change the final consonant of the reduplicative prefix to glottal stop, and then metathesize the resulting cluster. This rule sequence also operates when the final consonant of the reduplicative prefix is *w* or *y*, e.g. *bali* + C₁V₁C₂- > [farfali] > [faʔfali] > [fabʔali]²⁰ 'deceive'; *dawat* + C₁V₁C₂- > [čawčawat] > [čaʔčawat] > [čadʔawat] 'receive'; *báyu* + C₁V₁C₂- > [fayfáyu] > [faʔfáyu] > [fabʔáyu] 'pound rice'.

(c) The Balangaw *l*. The variants of Balangaw *l* are described by Shetler. Her description is as follows:

The lateral consonant is voiced and has two allophones; *l* [l] a lateral continuant which occurs word initially and in alveolar environments. An alveolar environment is defined as: (1) contiguous to a front vowel; (2) a preceding alveolar consonant in a consonant cluster; (3) a front vowel preceding a non-alveolar consonant in a consonant cluster . . . [ɾ] a mid-central retroflexed vocoid which occurs word medially and finally and in non-alveolar environments . . . (Shetler 1966:5).

The examples given by Shetler indicate that [rr] clusters do not occur, as in Kalinga. Blw. *kallontay* 'rubber band' is pronounced with a medial sequence of [ll]. Balangaw then contains Rules 1 and 2 as in Bontoc and Kalinga. Rule 4 does not occur and Balangaw Rule 3 is equivalent to Kalinga Rule 3.

Blw. 3. r > l / _____ l

The data given by Shetler (1964:9) show the same processes operating in Balangaw reduplication as in Bontoc, e.g. Blw. *bawat* + C₁V₁C₂- > *babʔawet* 'play with a top'; *daya* + C₁V₁C₂- > *dadʔaya* 'a little bit above'; *ballat* + C₁V₁C₂- > *babʔallat* 'do some weeding'.

(d) The Ifugao *l*. Newell (1956:529) describes three variants of the Guhang Ifugao *l*. The distribution statements are somewhat different from those described above for Bontoc, Ifugao, and Balangaw. They are as follows:

^{Kalinga}
The allophone [l] occurs syllable initial followed by central and back vocoids /a/, /u/ and /o/. . . It occurs syllable final followed by [l] (i.e. as the first member of an identical cluster) . . . [ʔallán] /ʔallán/ 'giant, monster'.

[l̥] is a lateral flap . . . It occurs syllable initial preceding front vocoids /i/ and /e/ . . . [pʔalé] /balé/ 'house'.

The allophone [ɾ] occurs syllable final except preceding [l]. [ʔarkɔ̣] /ʔalgo/ 'sun'; [ʔatʂɔ̣ɾ] /ʔadól/ 'body' . . . [pángɾ] /pángel/ 'chin' (Newell 1956:529).

Although similarities do appear between the distribution of the Ifugao *l* variants and those already described for the other Igorot languages, it is not easy to formulate a set of rules which can adequately account for the data and still be shown to have developed from the rules already formulated for the other languages. No attempt will be made in this paper to propose such rules, since it should be fairly evident that they are probably the result of rule changes which took place after the separation of the Igorot languages.

²⁰Bon. [f] and [č] are syllable initial variants respectively of *b* and *d*;

Rules 1 and 2 were probably added before proto-Igorot split up, since they occur in almost identical form in three of the four Igorot languages which have *l* variants. The functional equivalent of Rule 2 is still present in Ifugao, producing a flapped *l* variant before front vowels. The general form of Rule 3 which is shared by Kalinga and Balangaw probably was not present in proto-Igorot, since Ifugao allows lateral sequences which are equivalent to the Bontoc [rr] sequences, i.e. the variant of *l* which occurs adjacent to grave vowels (Bon. [r], Ifg. [l]) also occurs in geminate clusters surrounded by grave vowels. This sequence in Bontoc is produced by Rule 4 (the [r] assimilation rule), which requires for its operation an [rl] sequence unaffected by the operation of Rule 3. The generalization of Rule 3 and resulting loss of Rule 4 probably occurred independently in Kalinga and Balangaw, unless it can be shown from other evidence that Balangaw and Kalinga shared a period of common development.

Having established the probable rules for *l* variation in proto-Igorot, it should be possible to discover whether the same or slightly different rules were at one time operative also in Kankanay, but have since been lost. A close examination of the Kankanay forms which are cognate with forms having *l* in other Igorot languages reveals that such is indeed the case.

For Kankanay²¹ it is necessary to postulate at least Rules 1 and 2. Rule 3 may have been present in its generalized form since there is no evidence that Rule 4 was present in Kankanay. In addition Kankanay added various additional rules:

$$\text{Knk. 5. } r \rightarrow \begin{bmatrix} ? \\ \gamma \\ w \end{bmatrix} / \begin{bmatrix} a \\ \{a\} \\ u \end{bmatrix} \quad \text{---} \quad \begin{bmatrix} \{u\} \\ e \\ a \\ v \end{bmatrix}$$

$$\text{Knk. 6. } r \rightarrow ? / \text{---} ?$$

$$\text{Knk. 7. } r \rightarrow [\alpha^V \text{ feature}] / [\alpha^V \text{ feature}] \text{---} C$$

$$\text{Knk. 8. } r \rightarrow [\alpha^C \text{ feature}] / [\alpha^C \text{ feature}] \text{---} V$$

$$\text{Knk. 9. } r \rightarrow \phi / \text{---} \#$$

Rule 5 accounts for such forms as Knk. *bá?us* 'call names', Bon. *báhus* 'scorn'; Knk. *da?us* 'sickle for cleaning', Bon. *dahus* 'clean'; Knk. *bayat*, Bon. *belat* 'fat'; Knk. *beyat*, Bon. *bálat* 'banana'; Knk. *dáyan*, Bon. *dálan* 'trail'; Knk. *beɣay*, Bon. *belay* 'tiredness'; Knk. *deɣa*, Bon. *dela* 'outside'; Knk. *keɣaŋ*, Bon. *kelan* 'earthworm'; Knk. *búweg*, Bon. *búleg* 'single file'; Knk. *guwun*, Bon. *gulun* 'cogon grass'; Knk. *?úwu*, Bon. *?úlu* 'head'.

²¹ It should be noted that these rules are not synchronically operative in Kankanay and therefore are not of the same kind as the rules given for Bontoc, Kalinga, and Balangaw. They are more correctly pre-Kankanay rules. Moreover there is no direct evidence that *l* became *r* in the stated environments in pre-Kankanay. However in that *r* is the variant presently occurring in Bontoc, as well as in Balangaw, it is suggestive that *r* may also have been the variant in pre-Kankanay.

Glottal stop before *pepet* did not change to γ . There is evidence that ? became ϕ between *pepet* vowels, e.g. Knk. *pe?et* > *peet* as in Knk. *pét-an* 'to squeeze out', Bon. *pelet* 'to copulate, of birds and chickens'. Contrary evidence may appear in Knk. *béwew* (Bon. *bélew*) 'to chase rice birds away'. But this form is probably a reflex of **buR₃ew* (Proto-Igorot **búlew* > **búwew*) by normal operation of Rule 5, and subsequent irregular change of the initial vowel to *e* in both Kankanay and Bontoc.

Scott (1957:xiv) and Hettick (1972:30) indicate that in modern Kankanay γ also may occur before *pepet*, if the preceding vowel is *a*. This is apparently the result of a rule which is only beginning to operate in Kankanay. Scott 1957 contains very few forms that have an *a γ e* sequence, and these are sometimes shown as variants of an *a?e* sequence, e.g. Knk. *da?et* or *da γ et* 'then, thereupon, etc.', *sa?e η* or *sa γ e η* 'resinous pine', *?adá γ em* 'deep' but *dá?em* 'below, bottom'. On the other hand, ? appears as the regular reflex of *l* in the following forms: Knk. *bá?eg*, Bon. *báleg* 'attic of house'; Knk. *bá?es*, Bon. *báles* 'revenge'; Knk. *ba?ey*, Bon. *baley* 'house'; Knk. *ga?es*, Bon. *gales* 'sprouted camote'.

Rule 6 accounts for the geminate glottal stop sequences in the following forms: Knk. *?a??u*, Bon. *?al?u* 'pestle'; Knk. *da??up*, Bon. *dal?up* 'wash face'; Knk. *du??uk*, Bon. *dul?uk* 'dry season'; Knk. *na??um*, Bon. *nal?um* 'ripe'.

Rule 7 accounts for the loss of *r* with accompanying vowel lengthening before consonants other than glottal stop, e.g. Knk. *?ágew*, Bon. *?algew* 'day, sun'; Knk. *?atéba*, Bon. *?atelba* 'kind of tree'; Knk. *?úpu*, Bon. *?ulpu* 'thigh'; Knk. *átey*, Ifg. *?olte* 'liver'.

Rule 8 accounts for loss of *r* with accompanying consonant gemination, e.g. Knk. *?appug*, Bon. *?aphug* 'cut off all hair'; Knk. *bakkag*, Bon. *baklag* 'kind of taro'; Knk. *deppas*, Bon. *deplas* 'cliff'; Knk. *?ukku η* 'greedy for food', Bon. *?uklung* 'to force feed'.

Rule 9 accounts for the following forms: Knk. *?ábu*, Bon. *?ábul* 'drive away'; Knk. *be η e*, Bon. *be η el* 'rice measure'; Knk. *bíka*, Bon. *bíkal* 'kind of vine'; Knk. *?úbe*, Bon. *?úbel* 'fish trap'; Knk. *buka*, Bon. *bukal* 'wild pig'.

Fairly recently (probably within the last two to three hundred years),²² all rules which affected the development of *l* in Kankanay were lost, with restructuring of forms previously subject to those rules. Subsequent heavy borrowing of forms containing *l* from surrounding languages, and of Ilocano forms with an *r* (which has become *l* in Kankanay) has tended to obscure the conditioning environments for *l* change. In the first 20 pages of Scott 1957, there are over 100 forms which have *l* in an environment which would have been affected by one or more of the above rules, had these forms been in the language at the time that the rules were operative.

Llamzon (1969:126) noted the possibility of a large number of loan words between

²²The barrio now called *búga η* was still pronounced with a medial *l* when map makers first recorded the name as Balugan. The same evidence exists for the Bontoc barrio called *túbe η* , which is recorded on the maps as Talubin.

Ilocano and Kankanay, citing the 52 apparent cognate sets shared by these languages. He was also puzzled by his failure to find any cognate sets exclusively shared by Ilocano and Ifugao verifying his hypothesis that Ilocano, Ifugao, and Kankanay formed a single subgroup. The degree of borrowing is probably far greater than Llamzon expected. It can be traced with certainty only in forms in which there is a reflex of *R, *r, or *l in Ilocano, and then only if the reflex occurs in those environments in which it was susceptible to change in Kankanay. Even so, the following exclusively shared sets involving Kankanay can now be eradicated as either resulting from borrowing or for the reason given alongside the form. (The following sets are cited directly from Llamzon 1969:95ff, using his orthography.)

- Il. V., Ib.B., If. C., Ka. V. ba:lud 'imprison' (expected Knk. *bá?ud)
 Il.V., If.C., Ka.V. ba:hul 'fault, sin' (expected Knk. *básu)
 Il.V., Ib.B., Ka.V. baluhbút 'buy' (incorrectly cited, *balusbús*; expected Knk. *ba?usbus or *busbus)
 Il.V., Ib.B., Ka.V. halqít 'lightning' (expected Knk. *sa??it)
 Il.V., Ib.B., Ka.V. balaybaláy 'hang' (incorrectly cited, *balaybáy*; expected Knk. *baγaybay or *baybay)
 If.B. tultúl 'hammer'
 Ka.V. tultúl 'peck' (expected Knk. *tútu. Also in Isneg (Isg.)²³ *toltol* 'first pounding of rice.')
- If.B. paldán 'beside'
 Ka.V. paldán 'put one's arm over someone's shoulder' (expected Knk. *pádan)
 If.B. lomlóm 'continuous rain'
 Ka.V. lemlém 'continuous rain' (expected Knk. *lemmem)
 If.C. halu:pe 'class of harassing deities'
 Ka.V. halu:pey 'invoke evil spirits' (expected Knk. *sa?úpey or *súpey)
 If.C. naluqlúq 'eaten by wood weevil'
 Ka.V. naleklék 'worm eaten (wood), (expected Knk. *na-lekke)
 If.C. to:ηel 'firewood'
 Ka.V. tuηí 'to fuel' (expected Knk. *túηil)
 Il.V., Ka.V. qa:pal 'envy' (expected Knk. *?ápa)
 Il.V., Ka.V. gulgúl 'wash (hands)' (expected Knk. *gugu)
 Il.V., Ka.V. kalu:lut 'ferrule' (expected Knk. *ka?úwut or kúwut)
 Il.V., Ka.V. la:lat 'hide, skin' (expected Knk. *láyat; Isg. *lalat* 'hide, skin')
 Il.V. pamláy 'simulate pretense of something'
 Ka.V. pamláy 'pretense, pretext' (expected Knk. *pammay)
 Il.V. saldét 'diligent'
 Ka.V. haldét 'diligent' (expected Knk. *sádet)
 Il.V. pula:kan 'variety of rice'

²³ Isneg data are taken from Vanoverbergh 1972, or Reid 1971.

- Ka.V. pula:kan 'variety of yellow corn' (expected Knk. **puwákan*)
 Il.V. qalupa:si 'dry sheath of banana leaf'
 Ka.V. qalupa:hi 'dry banana bark' (expected Knk. **a?upási* or **?upási*)
 Il.V. saklán 'sue'
 Ka.V. haklán 'indict' (expected Knk. **sakkan*)
 Il.V. dika:lut 'variety of palay'
 Ka.V. dikalut 'variety of palay' (expected Knk. **dika?ut*)
 Il.V. pandarás 'adze'
 Ka.V. pandaláh 'adze' (expected Knk. **pandaryas*)
 Il.V. turéd 'suffer'
 Ka.V. tuléd 'suffer' (expected Knk. **tuwed*)
 Il.V. turáy 'ruler'
 Ka.V. tuláy 'highest official (government)' (expected Knk. **tuway*)
 Ib.B. ga:mit 'cloth, rag'
 Ka.V. gamít 'kind of basket' (semantic distance too great)
 Il.V., Ka.V. qali:wid 'old friend' (An incorrect listing. It does not appear in Vanoverbergh's Ilocano Dictionary, and is not known by several Ilocano speakers with whom the form was checked. Note Bon. *?aliwid* 'relationship between parents of spouses')

A large number of other supposedly exclusively shared cognates between Ilocano and Kankanay can be shown to have Isneg cognates, and indicate that the Kankanay forms are probably borrowed, since Isneg and Ibanag are closely related and share a closer relationship with Ilocano than any of these languages does with Kankanay.

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