



## Arta, Another Philippine Negrito Language

Lawrence A. Reid

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# ARTA, ANOTHER PHILIPPINE NEGRITO LANGUAGE<sup>1</sup>

LAWRENCE A. REID

SOCIAL SCIENCE RESEARCH INSTITUTE  
UNIVERSITY OF HAWAII

**1. INTRODUCTION.** In Reid (1989) I discussed two previously undescribed Negrito languages, Northern and Southern Alta, on which I had gathered data during fieldwork in the summer of 1987. During the same field trip I was also able to gather data from a group of Negritos in Quirino Province, who call themselves Arta.<sup>2</sup> This paper will discuss the position of Arta with reference to the other languages of Northern Luzon. It will conclude that this previously undescribed language either constitutes a very early sister language of Ilokano, or else it is an isolate among the Cordilleran languages of the Northern Philippines. It will be shown to have been strongly influenced in relatively recent times by one of the Northern Cordilleran languages of the Cagayan River Valley.

**1.1 LOCATION.** Contacts that were made with Arta in the field trip described above were all in the townships of either Aglipay or Maddela. Because of the onset of the rainy season, travel in the mountains where Arta normally reside was very difficult. Consequently no firsthand observation could be made of either their dwelling sites or of the number of speakers of the language. Language assistants claimed to come from a place called Impuyan, Villa Gracia, in the mountains near Maddela, or else from the Addalem River Valley. They claimed that only 25–30 households still speak the language.

**1.2 PREVIOUS REFERENCES TO ARTA.** The only reference to Arta in a published work is in Fox and Flory's map of Philippine ethnolinguistic groups (1974), where their present location is fairly accurately marked. Information was provided for the map by Thomas Headland who collected a wordlist of 213 items from an Arta Negrito called Sesar Olanyu (Headland 1967), who was at that time living in Maddela, but who said he came

from a community of 20 Negrito families in a place called Disibu, Aglipay. Pabling Olanyu, who assisted me in the summer of 1987, claimed to be a nephew of Headland's language assistant. There appear to have been no other linguistic or anthropological studies done on this group.

**1.3 THE UNIQUENESS OF ARTA.** That Arta is a clearly distinct language from other Philippine languages is supported not only from statements made from speakers of geographically adjacent languages that they do not understand Arta when they hear it spoken, but also from a careful analysis of the lexical data that was collected. Approximately 29 percent (148/512) appear to be unique forms<sup>3</sup> not shared by any other Philippine language (see Table 1). An examination of the Arta reflexes of the Proto-Malayo-Polynesian reconstructions of 200 basic items using Blust's (1981) modified Hudson list, indicates that Arta retains only 26.9 percent (51/189), almost eight percent fewer than any other Philippine language for which similar scores have so far been calculated.

Blust developed his list of Proto-Malayo-Polynesian reconstructions in order to compare the retention rates among Austronesian languages. He

**TABLE 1**  
**UNIQUE FORMS IN ARTA**

English	Arta	English	Arta
afternoon	malutap	climb (mountain)	sumarangsang
all gone	noputdi <sup>7</sup>	cook	mandaságad
angry	mesubég	crush lice	laddisèn
animal	dapug <sup>9</sup>	crawl	makkabangkabang <sup>20</sup>
ankle	tumang <sup>10</sup>	dance	mattalipa
arrive	dumigidig	day	langit
back (of person)	sapáng <sup>11</sup>	deer	bidut <sup>23</sup>
bad	balángu	depart	guminan <sup>24</sup>
bait	kaluntayag	dirty	merignèt
big	káman <sup>12</sup>	dog	lápul <sup>25</sup>
black, yellow	meṽuding <sup>13</sup>	drink	mattim
body, self	abi <sup>14</sup>	drip	matatagdu
boil (v)	sumpud	drive away	bisigán
bolo	bisuruk	east	allud
bone	sagnit	escort	itugèn <sup>26</sup>
bright	damadmang	fast	mebbilag
bubble (v)	mansappu	fat (adj)	meddayag
burn	nasigí	fathom	tappa <sup>27</sup>
call	tagyan	female	bukágan
carry on shoulder	abbitèn	fetch water	malapa
catch (thief)	kabkaban	few, little, small	killak
chest	gusu <sup>16</sup>	finger nail	lusip
chicken	úrat/kúrak	fire	dut <sup>28</sup>

Table 1—*continued*

flood	medálèm	pretty	napeppe
flower	bininnit	pursue	gabwatan <sup>19</sup>
fracture	nagatlu	question	pebebudu
fragrant	messalub	rain	púnad
friend	ararapa	red	melatá <sup>21</sup>
g-string	pulut	redeem	sóli <sup>22</sup>
gills	salang	remember	nánában
gnat	bèringáw	revolve	mallegut
go home	maddima <sup>17</sup>	run	maggurugud
hair, feather	polog <sup>29</sup>	sad	pabbagal
hard	messibat <sup>30</sup>	say	ibud
hear	atingèn	scratch	gititán
heavy	nadadtun <sup>32</sup>	seed (fruit), testicle	garasit
heel	búnguan	send	sugnúdan
help	adupan	shadow	araruan
house	bunbun <sup>33</sup>	sharpen	pénas
house lizard	aruti?ít	shoulder	sabilí
hundred	lima arta	sick	mangapar
hunt game	mambugay	sit	tumuttud
incorrect	kabbáto	skinny	mereteg
industrious	mellagpat	sleep	médam
itchy	mekutél	smooth, soft	melaptit
lacking salt	medantak	space under house	luwab
ladle	likud	speak	mallagip <sup>15</sup>
land, soil	tapá	squat	terakad
lazy	mekayang	stab	dasunan
leave behind	itagí	stand	tumadyor
leech (mountain)	baling	suck	usu?usan
leftover	kagidna <sup>6</sup>	sun	langít
lie (v)	nangkatig <sup>8</sup>	surprised	numagtut
lie down	mógip	swim	tumpu
lightning	kilit	tasty, sweet	mebbungku
lime	nusú	think	nánában
look outside	irigit	thirsty	makatim
lose	minahhut	thorn	tubêl <sup>31</sup>
love	kabbata	throw	iber
male	gilangán	two	tallip
morning	damadmang	ugly	meddasa
mosquito	bungur	vagina	sabit
mud	tabug	voice	lagip <sup>15</sup>
naked	bules	walk	dumama <sup>17</sup>
narrow	minasaldit	wall	gisád
near	mebbiyén	waterfall	burubbub
night	binguét	water container (bamboo)	purunggu
noisy	mellágip <sup>15</sup>	weak	mellupul
old (person)	dupuh	weave (mat)	labba?
one	sipang	weep	masiadi
orphan	golang	west	allangan
outrigger	kantal	wet	minakkay
path, trail	diddiman <sup>17</sup>	wind	bagbag
person	agani <sup>18</sup>	wound	nasagbit

has calculated retention rates for various northern Philippine languages as follows (Blust pers. comm.): Ilokano 44.7 percent (74/184), Ibanag 41.8 percent (81/194), Itbayaten 40.2 percent (74/184), Pangasinan 37.2 percent (74/199), Bontok 36.9 percent (73/198), Ilongot 34.2 percent (68/199). Of the other Philippine languages, Tagalog has retained 46 percent (92/200), and Tboli in the southern Philippines has retained 37.4 percent (73/195). In Reid (1989) I presented figures for Southern Alta (35.1 percent 67/191) and Northern Alta (38.2 percent 50/191).

Some of the more interesting lexical innovations occurred within the numeral system. Apart from the innovations of *sipang* and *tallip* for 'one' and 'two' respectively, the terms for 20 and multiples of 20 are built on the term *arta* 'person'. Thus, *sipang a arta* 'twenty', *tallip a arta* 'forty', and *lima arta* 'one hundred'.

**2. SUBGROUPING ARTA.** The position of Arta vis-à-vis the other languages of the Northern Philippines is determined by examining the innovations in phonology, lexicon, and morphology that Arta uniquely shares with other languages. The limited amount of data that were collected means that the present results must be considered tentative. A thorough examination of all areas of the language awaits an extended field trip to the area.

**2.1 PHONOLOGY.** The segmental phonemes of Arta are similar to those found in other languages of the area. The consonants are *p, t, k, ʔ* (glottal stop), *b, d, g, m, n, ng* (velar nasal), *s, h, l, r, w*, and *y*. There are at least six vowels, *i, e, è* (schwa), *a, u*, and *o*. There may also be a contrast between the vowel *a* and caret, a slightly higher vowel, similar in pronunciation to the vowel in British English 'cup'. In the following sections I shall discuss the historical development of those phonemes which are significant for understanding the subgrouping of Arta.

**2.2 CONSONANT REFLEXES.** The historical development of three Proto-Austronesian consonants in Arta, specifically \*R, \*j, and \*k, is of considerable significance, not only in tracing the genetic relationships of this language, but also in separating out inherited vocabulary from the fairly large body of items that Arta has borrowed from languages with which it has been in contact.

**2.2.1 The reflexes of \*R.** Arta shows two reflexes of \*R, in forms either directly or indirectly inherited from Proto-Austronesian, Proto-Philippines,

and Proto-Cordilleran. Reconstructed forms are cited from Wurm and Wilson (1975) where appropriate.<sup>4</sup> The most common reflex is *r*. The 16 forms containing this reflex are given in Table 2. The only other language in Luzon which has an *r* reflex of \*R is Ilokano. Table 3 presents the forms which show a *g* reflex of \*R. This is the reflex found in all the Northern Cordilleran languages, specifically the non-Negrilo languages Isneg (Isg), Ibanag (Ibg), Itawis (Itw), Yogad (Yog), Gaddang (Gad), and the Negrilo

**TABLE 2**  
***r* REFLEXES OF \*R IN ARTA**

English	Arta	PAn, PPh, PCo
buy	maratáng	*Ratang (R) <sup>34</sup>
cough	mangiyer	*qikeR (R) <sup>35</sup>
debt	rasut	*Rasut (R) <sup>36</sup>
Negrilo	arta	*qaRtaq (R) <sup>37</sup>
new	búru	*baqeRu? (Dy)
pay	rattangan	*Ratang (R)
pity	pagarbián	*kaRbi (R) <sup>38</sup>
rib	tarang	*takaRang (Ch)
root	ramut	*Ramut (Z)
soup	diru	*diRu (R) <sup>39</sup>
stand	tumadyor	*takdeR (R) <sup>40</sup>
stove, hearth	dupuran	*dapuR (Z)
thunder	adúr	*duRduR (Z)
vein	urat	*uRat (D)
wash	mangurás	*quRas (D)
worm	arés	*eRes (R) <sup>41</sup>

**TABLE 3**  
***g* REFLEXES OF \*R IN ARTA**

English	Arta	PAn, PPh, PCo
banana	bagat	*baRat (H)
betel leaf	god	*Rawe(j) (Ch) <sup>64</sup>
bunch (bananas)	búlig	*buliR (D)
dream	tagtaginip	*taRa-qinep (Z)
dust	dupug	*dapuR (Z) <sup>42</sup>
egg	ilug	*qi-CeluR (Z)
left (hand)	wígi	*w <sub>i</sub> iRi (Dy)
lung	baga	*baRaQ (Bl)
mouth	bibig	*bibiR (D)
neck	lig	*liqeR (Dy)
sail	láyug	*layaR (D)
sand	dagat	*daRat (R) <sup>43</sup>
snake	ulag	*uleR (D)
wash hands	buggu	*beRu (R) <sup>44</sup>

languages Atta and Central Cagayan Agta (referred to below simply as Agta). It is also the reflex in the languages of the east coast of Luzon, both Negrito (commonly referred to as Dumagat or Agta) and non-Negrito. The former include the Dumagat of Casiguran (DgtC), Palanan, and Umiray;<sup>5</sup> the latter include Kasiguranin and Paranan. It is also a reflex of \*R in Ilokano.

It will become apparent below that there is a considerable substratum of Northern Cordilleran lexical items in Arta. I therefore assume that the forms given in Table 3 are not directly inherited, but are borrowings from one or more of the Northern Cordilleran languages. At least two of them show further evidence of being borrowings. The word for 'wash' shows gemination of the medial consonant following a reflex of \*e, a regular feature of Northern Cordilleran languages, but not of Arta. The word for 'dream' appears to be borrowed from a language in which \*e became i, however, Tagalog *panaginip* which has a different prefixal element is probably not the immediate source, but may be a cause for contamination.

**2.2.2 The reflex of \*j.** The main reflex of \*j in Arta appears to be *d* (see Table 4). Only two forms show *g* (also shown in Table 4), and these are both considered to be borrowings, probably from Ilokano. Segment *g* is the reflex of \*j in Ilokano and all the Northern Cordilleran languages, as well as all of the Central and Southern Cordilleran languages within the Meso-Cordilleran subfamily. The only languages in Northern Luzon which are presently known to have a *d* reflex of \*j, apart from Arta, are Northern and Southern Alta and Casiguran Dumagat. It is possible that Paranan and Palanan Dumagat may also show *d*, but insufficient data are available on these languages.

TABLE 4  
REFLEXES OF \*j IN ARTA

English	Arta	PAn, PPh, PCo
betel leaf . . . . .	god . . . . .	*Rawe(j) (Ch) <sup>64</sup>
charcoal, soot . . . . .	ʔuding . . . . .	*qujing (B)
gall . . . . .	apdu . . . . .	*qapeju(S) (B)
name . . . . .	ngadin . . . . .	*ng-ajan (Z)
navel . . . . .	pused . . . . .	*pusej (D)
nose . . . . .	adung . . . . .	*qajung (R) <sup>45</sup>
palm (of hand) . . . . .	palad . . . . .	*palaj (D)
sibling . . . . .	wadi . . . . .	*( )w-aji (R) <sup>46</sup>
rice (plant) . . . . .	pagáy . . . . .	*pa:jey (Ch)
stinging pain . . . . .	naʔappès . . . . .	*qapjes (R) <sup>47</sup>

**TABLE 5**  
**REFLEX OF \*k IN ARTA**

English	Arta	PAn, PPh, PCo
bad smelling	mebbuyu	*buyuk (R) <sup>48</sup>
bark of tree	ulit	*kulit (D)
bird	manu	*manuk (D)
brain	uta	*qutek (Dy)
chest	gusu	*gusuk (R) <sup>49</sup>
cough	mangiyer	*ikeR (R) <sup>35</sup>
father, uncle	lelle	*laki (D)
fire	dut	*dukut (R) <sup>50</sup>
fish	íyan	*ikan (Dy)
foot	tiyád	*tiked (R) <sup>51</sup>
laugh	malla	*kela (R) <sup>52</sup>
louse	utu	*kutu (D)
mat	aba	*qabek (R) <sup>53</sup>
offspring	anaʔanna	*anak (Dy)
rib	tarang	*takaRang (Ch)
ride	masay	*sakay (Z)
see	itta	*kiTa (Dy)
stand	tumadyor	*takdeR (R) <sup>39</sup>
tree, wood	ayú	*kaS <sub>2</sub> iw (Z)
unmarried girl	madit	*ma-dikit (R) <sup>54</sup>

**2.2.3 The reflex of \*k.** At least 20 reconstructed forms containing \*k appear in the data with a zero reflex (see Table 5). Although there are a number of Philippine languages in which \*k fell together with glottal stop (including several Kalinga and Ifugao dialects), this is the only Philippine language which, to my knowledge, lost \*k. There are, however, a considerable number of forms in the language in which the phoneme *k* appears. A large proportion of these forms give evidence of having been borrowed from a Northern Cordilleran language—or from Ilokano—although a few (see Table 1) appear to be unique to Arta and must, therefore, have been innovated subsequent to the loss of the \*k > 0 rule.

**2.2.4 The reflex of \*q.** Glottal stop is clearly part of the synchronic phonology of Arta. It occurs systematically in certain positions, for example, between the adjectival prefix *me-* and otherwise vowel initial roots. (See Table 16, items ‘black’, ‘far’, ‘odorous’, ‘salty’, and ‘sour’.) It also occurs in several forms (such as *binʔi* ‘seed’, *lingʔèt* ‘sweat’, and *linnaʔaw* ‘dew’), which are probably borrowed from Ilokano, and it also occurs optionally on the end of otherwise vowel-final words given as citation forms. However the evidence suggests that glottal stop was probably lost at some point in



the history of the language, possibly at the same time as \*k was lost, and has subsequently redeveloped.

Vowel sequences that resulted from loss of Proto-Cordilleran \*ʔ (glottal stop), whether from a Proto-Austronesian \*ʔ ('*drink*'), \*q ('*bitter*'), or \*h ('*leaf*'), or from a pre-Arta \*k ('*father*'), were reduced to single vowels in the same way that similar vowel sequences have been reduced in the Northern Cordilleran languages as well as in Casiguran Dumagat (see Table 6). In Arta, these changes took place within a number of roots, for example, '*betel leaf*', '*bitter*', '*father*', '*leaf*', '*neck*', '*winnow*'. This process is still present in the language, but while occurring across word-internal morpheme boundaries, both prefixes and suffixes (e.g. '*intoxicated*', '*left over*', '*dream*', '*cheat*') as well as across clitic boundaries (e.g. '*abaca*', '*sesame*'), it apparently no longer operates within a morpheme, as borrowed words, such as *linnarəw* '*dew*', retain the *VʔV* sequence.

**TABLE 6**  
**REDUCTION OF VOWEL SEQUENCES IN ARTA**

English	Arta	PAn, PPh, PCo
ai > e		
abaca .....	abake .....	*()abaka (Z) <sup>55</sup>
bitter .....	mapet .....	*paqit (Dy)
climb (tree) .....	umine <sup>56</sup> .....	*naSek (Bl)
father, uncle .....	lelle .....	*laki (D)
intoxicated .....	minakenum .....	*minaka-ʔinum (Dy) <sup>57</sup>
sesame .....	langge .....	*lenga[ ] (Z) <sup>54</sup>
au > 0		
all gone .....	noputdi .....	na-ʔuput-di <sup>7</sup>
leaf .....	don .....	*Dahun (D)
aa, ae > a		
leftover .....	kagidna .....	ka-qaged-na <sup>6</sup>
old (object) .....	siran .....	sira-an <sup>58</sup>
winnow .....	mantap .....	*tahep (H)
ii, ie > i		
dream .....	tagtaginip .....	tagtagi-ʔinip <sup>59</sup>
neck .....	lig .....	*liqeR (Dy)
kill .....	papatin .....	pati-en <sup>60</sup>
ue > a		
seek .....	birán .....	biruk-en <sup>61</sup>
ua > u		
cheat .....	ilukun .....	i-luku-an <sup>62</sup>
ay, ey > i		
kill .....	papati .....	*paCey (Z)
seashore .....	mebbian .....	*baybay (Z) <sup>63</sup>
awe > 0		
betel leaf .....	god .....	*Rawe(j) (Ch) <sup>64</sup>

The reduction of \*ay and \*ey to *e* in a penultimate syllable ('*sea*', '*bridge*') may indicate borrowing from Gaddang, which has forms identical to those given for Arta. The inherited reflex in Arta is probably *i* ('*die*', '*seashore*'), although several forms retain the diphthong unchanged ('*rice plant*', '*termite*'). (See Table 6 and endnote 63.)

If *i* is indeed the inherited reflex of \*ay, one would expect to find \*aw reflected as *u*. But no cases of this have been found. All such sequences (except for *god* '*betel leaf*') appear in the data as *aw* ('*float*', '*housefly*', '*white*'). (See Table 6 and endnotes 63 and 64.)

**2.3 VOWEL REFLEXES.** There is at least one phonological innovation affecting vowels which appears to be unique to Arta among the languages of Northern Luzon. There is a rule of vowel harmony in forms which had a voiced stop followed by \*a in penultimate syllables, and in which the vowel of the final syllable was either *u* or *a*. The vowel in such a syllable harmonized with the vowel in the ultimate syllable (see Table 7). This rule apparently did not affect forms in which the vowel of the penultimate syllable developed from \*e ('*bright*', '*carabao*'), suggesting that there is, in fact, a phonological difference between the two low central vowels, and providing support for a sixth vowel phoneme, caret. (See Table 7 and endnote 65.)

Table 8 shows the development of \*a as *i* in other syllables, both penultimate and final, in which the initial consonant was a voiced stop. This change also took place in Casiguran Dumagat (Headland and Headland 1974:xxiv).

There are two reflexes of \*e in Arta. The first is short *a* (in some forms caret was recorded, but the data has been regularized to *a*), which is also the reflex in Northern Cordilleran languages, and *è* (schwa), which is also

**TABLE 7**  
**VOWEL HARMONY IN ARTA**

English	Arta	PAn, PPh, PCo
new .....	búru .....	*baqeRu? (Dy)
pig .....	bubúy .....	*babuy (D)
widow .....	bulu .....	*ba:lu (Ch)
dust .....	dupug .....	*dapuR (Z)
far .....	me?aduyu .....	*Za( )uq (Z)
stove, hearth .....	dupuran .....	*dapuR (Z)
long (time) .....	mebbayag .....	*bayag (Hi)
sole (of foot) .....	dapan .....	*dapan (Ch) <sup>65</sup>

TABLE 8

**\*a > i IN ARTA**

English	Arta	PAn, PPh, PCo
answer . . . . .	singbit . . . . .	*sa(m)bat (Ch) <sup>66</sup>
body, self . . . . .	abi . . . . .	*ʔawak (Dy) <sup>67</sup>
name . . . . .	ngadín . . . . .	*(ng)-ajan (Z)
walk . . . . .	maddima . . . . .	dama <sup>68</sup>
eel . . . . .	igít . . . . .	*qigat (R)
light (weight) . . . . .	mellágin . . . . .	lagaqan

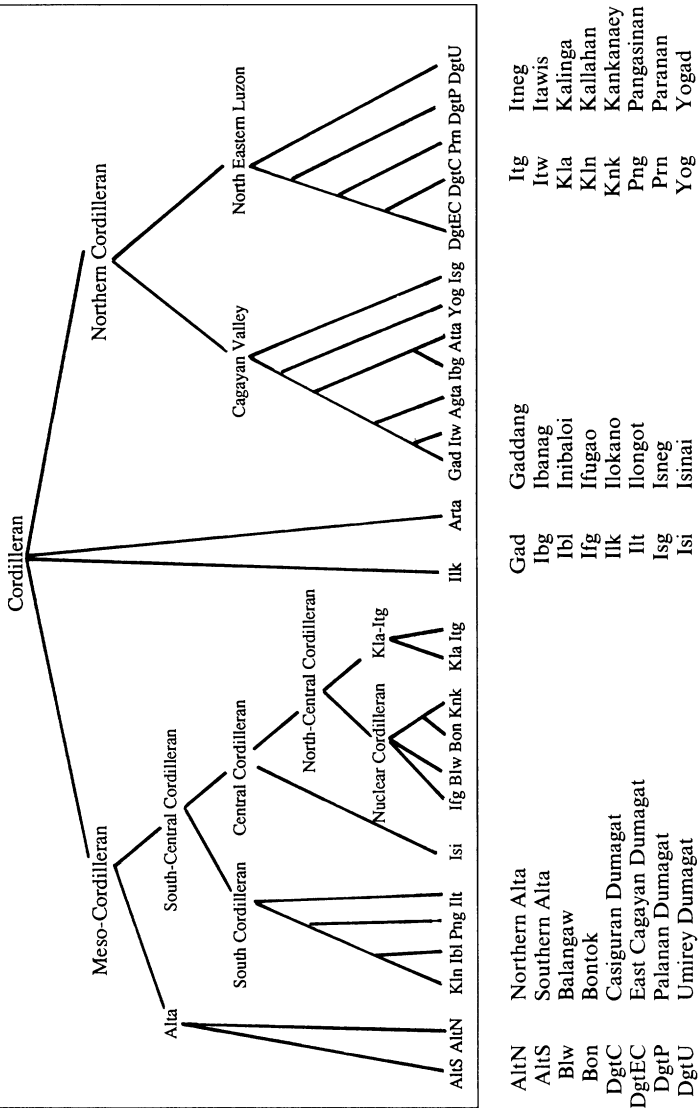
TABLE 9

**\*e REFLEXES IN ARTA**

English	Arta	PAn, PPh, PCo
blanket . . . . .	ulas . . . . .	*ules
breathe . . . . .	mangángas . . . . .	*ʔa:nges (R) <sup>69</sup>
cold (weather) . . . . .	medagnin . . . . .	*degnin (R)
fart . . . . .	atut . . . . .	*he(n)tut (D)
give . . . . .	iatad . . . . .	*ʔated (Hi)
pungent, spicy . . . . .	meddagas . . . . .	*deges
river, water, juice . . . . .	wagat . . . . .	*waget (R) <sup>70</sup>
roof . . . . .	atap . . . . .	*qatep (Dy)
slice . . . . .	galgalan . . . . .	*gelgel (R) <sup>71</sup>
squeeze . . . . .	pakran . . . . .	pekel <sup>72</sup>
English	Arta	Ilokano
brave . . . . .	maturéd . . . . .	tured
dull (not sharp) . . . . .	mengngudél . . . . .	ngudel
earthquake . . . . .	gingginéd . . . . .	ginggined
liver . . . . .	dálèm . . . . .	dalem
pull . . . . .	guyudèn . . . . .	guyúden
slave . . . . .	adipèn . . . . .	adipen
swallow . . . . .	tilmunèn . . . . .	tilmúnen
sweat . . . . .	lingʔèt . . . . .	lingʔet
throat . . . . .	tènggèd . . . . .	tengnged <sup>73</sup>
use . . . . .	usarèn . . . . .	usaren

the reflex in Ilokano and Casiguran Dumagat. It is probable that *a* is the reflex in directly inherited forms, since forms such as *'fart'* (Table 9) could not have been borrowed from a Northern Cordilleran language, all of which geminate a medial consonant when the penult contained \**e*. There are also a large number of borrowed forms from these languages which retain the gemination in Arta. The other reflex, *è*, occurs in a number of forms, the great majority of which are identical to Ilokano. These are assumed to be borrowings from that language.

FIGURE 1  
REVISED SUBGROUPING OF CORDILLERAN LANGUAGES



## 2.4 THE POSITION OF ARTA VIS-À-VIS OTHER LANGUAGES.

An examination of the various sound changes described above leads to several possible hypotheses regarding the subgrouping of Arta with other languages of the Northern Philippines. Considering that Ilokano is the only other language in the north of the Philippines that retains an *r* reflex of \*R, one hypothesis would be that Arta and Ilokano are immediate sisters. There is, however, very little further evidence to support this hypothesis. It is possible that some of the forms listed in Table 9 (such as 'earthquake') which are uniquely shared between Ilokano and Arta, are exclusively shared innovations within this little subgroup, rather than borrowings, as was suggested in the preceding paragraph. However most of these forms are not uniquely shared; they occur, probably as borrowings from Ilokano, in languages throughout the Cordilleran area, where Ilokano is the lingua franca. Neither does Arta share any innovations in morphology or syntax that are otherwise unique to Ilokano, such as PPh \*maR- appearing as *ag-*, rather than the expected *mar-*. Further counterevidence to this hypothesis is the different reflex of \*j in Ilokano and Arta.

The only languages that are presently known to have a *d* reflex of \*j in the Northern Philippines are Casiguran Dumagat and Northern and Southern Alta. It is improbable that Arta immediately subgroup with any of these languages because of their different reflexes of \*R. Casiguran Dumagat reflects it as *g*, whereas the Alta languages show *l*. Since \*r and \*l fell together in the parent of the Alta languages, as well as in the parent of the Southern and Central Cordilleran languages, it is possible that Arta could be related to these languages at a very remote time depth, prior to the change of \*r to \*l. There is, however, no further evidence to support such a subgrouping.

It seems then that Arta is probably a first order subgroup of Cordilleran (see Figure 1).

## 3. THE INFLUENCE OF OTHER LANGUAGES ON ARTA.

**3.1 LEXICON.** The presence of a large number of forms in Arta which show one or more of the phonological features typical of Northern Cordilleran languages, but which are not considered to be typical of Arta (such as gemination of a medial root consonant following \*e, a *g* reflex of \*R or \*j, a *k* reflex of \*k), or which are probably lexical innovations in Proto-Northern Cordilleran, indicate that Arta has been in contact with one or more of these languages for some time and has been influenced by them. In order to determine which language this might be, all such forms were checked against available dictionaries or word lists of Northern Cordilleran languages.

**TABLE 10**  
**BORROWED ITEMS, NONSPECIFIC AS TO SOURCE**

English	Arta	English	Arta
accompany .....	mangibulun	know how .....	malalaki
abaca .....	abaka	lacking .....	makuráng
ant .....	kutún	pestle .....	bayú
bamboo .....	kawáyan	pillar .....	arigi
bran .....	sisik	pound (rice) .....	mambayú
bury (dead) .....	ikutkut	sell .....	iláku
camote .....	kamuti	sesame .....	langnga
child, young .....	kanakának	sheath for bolo .....	kalúban
cover .....	abbugan	smoke .....	asuk
crow .....	wakwak	snake .....	ulag
dig .....	mangkutkut	study .....	malalaki
frog .....	tukák	tired .....	nalupuy
frying pan .....	parayuk	wing .....	payák
hit, strike .....	suntukan	work .....	mattarabahu
jackfruit .....	nangka		

One set of items was considered to be nonspecific as to their source, in that identical forms were found in several Northern Cordilleran languages, usually Ibanag, Itawis, Central Cagayan Agta, Gaddang, or Isneg. A considerable number were also found in Ilokano, which shows the same phonological developments as are mentioned in the previous paragraph.

Table 10 presents those forms that occur in one or more of the Northern Cordilleran languages as well as Ilokano. Table 11 presents the forms found in more than one Northern Cordilleran language, but not in Ilokano. A few of the latter (*'alive'*, *'liver'*, *'mountain'*) occur both in a Northern Cordilleran language and in Casiguran Dumagat.

Three languages were found to share sets of lexical items uniquely with Arta. These are Gaddang (Table 12), Ilokano (Table 13), and Casiguran Dumagat (Table 14). It may not be coincidental that of the languages spoken in the geographical area close to where the Arta live these three languages have the fullest dictionaries. Lexical sources that were available to me for Ibanag, Yogad, and Itawis were minimal.

Interaction between Arta and an Agta band speaking a language closely related to the Casiguran Dumagat who live on the western side of the Sierra Madre appears to be considerable. Headland (pers. comm.) refers to a group called Maddela Agta, whose language is said to be mutually intelligible with Casiguran Dumagat, and suggests that it is probably this group rather than the Negritos in Casiguran that has influenced Arta so strongly. Non-Negritos in Aglipay and Maddela are unaware that the two groups are linguistically distinct. Both are subsumed under the generic terms Dumagat or Agta. It is not surprising therefore that the two languages

**TABLE 11**  
**BORROWED ITEMS FROM A NORTHERN**  
**CORDILLERAN LANGUAGE**

English	Arta	English	Arta
alive .....	mangátólay	full .....	minapanno
all .....	attanan	grass .....	kaddat
areca nut .....	tabbi	husked rice .....	baggat
banana .....	bagat	intestines .....	sináy
betel chew .....	tabbi	liver .....	agtay
boat pole .....	takkan	mortar .....	attung
borrow, steal .....	takkawan	mountain .....	búkid
coconut .....	íyug	paddle .....	takkan
coconut (young) .....	kalud	sew .....	mandaget
cooked rice .....	mábaw	skin .....	gaddang
cotton .....	malakapat	stairway, ladder .....	addan
deaf .....	bangngag	stick (v) .....	malikkat <sup>74</sup>
deer .....	utta	true .....	kurúg
different .....	tanakuan	turtle .....	dagga
excrement .....	attay	year .....	dagun
forehead .....	kiráy		

**TABLE 12**  
**BORROWED ITEMS FROM GADDANG**

English	Arta	English	Arta
broken in pieces .....	nagúlak <sup>75</sup>	spider .....	akákawá <sup>76</sup>
cloud .....	dulam	spit .....	mattuppak
curly .....	kurlin <sup>77</sup>	tear (v) .....	pissayán
egg .....	ílug <sup>78</sup>	vegetable .....	natang
fever, hot .....	meppasu <sup>79</sup>	viand .....	yakkan
flesh .....	bálag	wash clothes .....	mambambal
lobster .....	payyan	wear clothes .....	mambaruwásig <sup>80</sup>
loss (business) .....	darugas <sup>81</sup>	weave cloth .....	mangabil
point .....	tukkél	wine .....	binarayán
push .....	itulay <sup>82</sup>	write .....	túrak
rice husk .....	sisik		

uniquely share a number of lexical items. In addition to the items listed in Table 14, there are at least two forms, probably uniquely shared between Arta and Casiguran Dumagat, which show an *r/h* correspondence. These are Arta *dépar* (Headland 1967), DgtC *dèpah* 'face' and Arta *apirit*, DgtC *apehit* 'small'.

There have been no studies done of Maddela Agta, so that all lexical comparisons for this paper have been made with the Casiguran dialect, for

**TABLE 13**  
**BORROWED ITEMS PROBABLY FROM ILOKANO**

English	Arta	English	Arta
bedbug	kitèb	eyelash	kimát
brave	maturèd	happy	naragsak
broken	naperdi	hold	iggaman
broom (sweep)	kaykay	kick	kugtalan
cheap	ménos	regret	babawì
cheat	ilúkun <sup>83</sup>	round	nabbukèl
clean	nadalus	saw	ragadi
collapse	nagsat <sup>84</sup>	stone	karagatan <sup>85</sup>
comb	sagaysay	swallow	tilmunèn
correct	ustu	thigh	luppu
crab	agatúl	wash face	agidamrus <sup>86</sup>
dew	melinna <sup>2</sup> aw	water jar	karamba
dirt in eye	napulíngan	wrap	balkútèn
eyebrow	kiday		

**TABLE 14**  
**BORROWED ITEMS PROBABLY FROM CASIGURAN DUMAGAT**

English	Arta	English	Arta
awaken	maluwág <sup>87</sup>	leech (field)	lipát
bat	payák	penis	gilang
bite	nguyutân	pregnant	butitán <sup>88</sup>
boat	abang	rat, mouse	bukèt
bow and arrow	pangal <sup>89</sup>	request	magída
cheek	padingil	ringworm	galis
crack (v)	bisagán	slow	memmayas
face	mata	strong	messibat
headcold	sipun	sugarcane	talad
hide	ilisu	throw away	ibut
how many	asèngan	warm by fire	maddingding <sup>90</sup>
island	puruk <sup>91</sup>	wide	mellawá
knee	bul <sup>92</sup>		

which considerable lexical information is available (Headland and Headland 1974).

Unlike Casiguran Dumagat (and presumably also Maddela Agta), Arta does not seem to have been influenced to any considerable degree by Tagalog. There are a few Tagalog forms ('ringworm', 'headcold') found in both Arta and Casiguran Dumagat (included in Table 14). These are assumed to have been borrowed from Casiguran Dumagat into Arta. At least one form ('weave cloth') found also in Gaddang (included in Table



12) is probably originally from Tagalog. A few other forms which probably have their source in Tagalog (*ipis* 'cockroach', *tagtaginip* 'dream', *magkanson* 'sing', *mekkapál* 'thick') but which are not found in Casiguran Dumagat or Gaddang, have also found their way into Arta.

**3.2 VERBAL MORPHOLOGY.** There was a phonological development in several of the Northern Cordilleran languages (Atta, Gaddang, Ibanag, Itawis, and Yogad) that has apparently resulted in an innovation in the verbal morphology of Arta. In Northern Cordilleran languages the first consonant of a cluster of heterorganic obstruents completely assimilates to the second consonant of the cluster (e.g. Gaddang *kókkot* < \*kutkut 'dig', *kukkúd* < \*kudkud 'scratch', *páppak* < \*pakpak 'wing', *tattád* < \*tadtad 'pressing down in order to pack in more'). This rule directly affected the final consonant of the actor focus prefix *mag-* (the reflex in these languages of \*maR-), which always assimilates to the initial consonant of the root to which it is attached creating a geminate cluster. Thus Gaddang *magbaggu* becomes *mabbaggu* 'to wash hands', *mag-turak* becomes *matturak* 'to write', *mag-kasal* becomes *makkasal* 'to get married'.

The assimilation rule is not part of the Arta phonological system. There are many instances in the data of heterorganic consonant clusters. In Table 1 alone, see for example, *digdig* 'arrive', *kabkab* 'catch', *tagdu* 'drip', *dadtun* 'heavy', *lagpat* 'industrious', *gitgit* 'scratch', *numagtut* 'surprised', *bagbag* 'wind', *sagbit* 'wound'. In Arta, the expected reflex of \*maR- would be *mar-*. Instead it is simply *ma-*. The initial consonant of the root to which this prefix is attached is sporadically geminated, apparently in imitation of the result of the assimilation rule in Northern Cordilleran. Table 15 lists all

**TABLE 15**  
**ma- ACTOR FOCUS PREFIX IN ARTA**

English	Arta	English	Arta
awaken .....	ma-luwág	run .....	ma-ggurugud
buy .....	ma-ratáng	speak .....	ma-llagip
dance .....	ma-ttalípa	spit .....	ma-ttuppak
die .....	ma-ppatid	steal .....	ma-ttakaw
drink .....	ma-ttim	stick .....	ma-likkat
drip .....	ma-tatagdu	study .....	ma-lalaki
fetch water .....	ma-lapa	turn .....	ma-ggírèng
go home .....	ma-ddimad	typhoon .....	ma-bbagyu
lean .....	ma-sanggir	warm by fire .....	ma-ddinding
plant .....	ma-mula	wash hands .....	ma-buggu
revolve .....	ma-llegut	weep .....	ma-siadi
ride .....	ma-say		

occurrences in the data of what appear to be *ma-* actor focus affixes in Arta. Although a number of forms (*'awaken'*, *'buy'*, *'drip'*, *'fetch water'*, *'lean'*, *'plant'*, *'ride'*, *'stick'*, *'study'*, *'wash'*, *'weep'*) simply prefix the root with *ma-*, the remainder also geminate the initial consonant of the root.

One unambiguous occurrence of *mag-* occurs on the root *kansong* *'to sing'*, which is clearly a Spanish borrowing, probably via Tagalog.

One of the adjectival prefixes in Proto-Cordilleran was *\*ma-*. It is generally reflected as *ma-* in Northern Cordilleran languages (e.g. Gad *maláppèt* *'industrious'*, *malannaw* *'fresh'*, *malinis* *'clean'*) and as *na-* on most adjectives in Ilokano (e.g. *naragsak* *'happy'*, *nagaget* *'industrious'*, *nadalus* *'clean'*), although a few frequently used adjectives (such as *mabisin* *'hungry'* and *matured* *'brave'*), still retain the older form. In Arta, this adjectival prefix is generally reflected as *me-*, again with sporadic gemination of the initial consonant of the root to which it is attached. Table 16 lists all occurrences of *me-* in the data. Casiguran Dumagat (Headland pers. comm.) also uses *me-* as an adjectival prefix, for example, *mesibèt* *'strong'*, *meinamas* *'excessive'*, *medibi* *'low, short'*. To what extent the similarity in the form of this adjectival affix is the result of mutual influence

**TABLE 16**  
**me- ADJECTIVAL PREFIX IN ARTA**

English	Arta	English	Arta
angry	me-subèg	lacking salt	me-dantak
bad smelling	me-bbuyu	lazy	me-kayang
black, yellow	me-ʔuding	light (weight)	me-llágin
carried by current	me-bulud	long (time)	me-bbayag
cold (weather)	me-dagnin	near	me-bbiyên
dark	me-ddèmèng	noisy	me-llágin
dew	me-linnaʔaw	odorous	me-ʔángut
dirty	me-rignèt	painful	me-ddagès
dry, hot	me-pasu	pungent, spicy	me-ddagas
dull (not sharp)	me-ngngudèl	red	me-latá
dusty	me-ddupug	salty	me-ʔasin
expensive	me-ngnginá	seashore	me-bbi-an
far	me-ʔaduyu	sharp	me-ttadèm
fat (adj)	me-ddayag	smooth, soft	me-laptin
flood	me-dálèm	sour	me-ʔapsut
fragrant	me-ssalub	straight	me-túnung
good	me-pépeyá	thick	me-kkapál
hard	me-ssibat	thin	me-lágpis
heavy	me-dadtun	ugly	me-ddasa
hungry	me-bbisin	weak	me-llupul
industrious	me-llagpat	white	me-pulaw
itchy	me-kutèl	wide	me-llawá

is at this point not known. It is probable though, considering the history of contact between the two languages, that the change from \*ma- to me- in Arta and Casiguran Dumagat is not simply a case of parallel development.

Arta (as well as Casiguran Dumagat and Northern Cordilleran languages such as Gaddang) also has adjectives that are prefixed with *na-* (e.g. *nadalus* 'clean', *nalupuy* 'tired', *naragsak* 'happy') and with *ma-* (e.g. *maturèd* 'brave', *mapet* 'bitter'). It is probable that most of these adjectives are either borrowed from Ilokano, with the Ilokano affixes appropriate to each form, or, in the case of the *ma-* forms, they are no longer treated as morphologically complex. This is particularly true for a word such as *madit* 'unmarried girl' (from \**madikit* 'beautiful, of unmarried girls') which is not found in Ilokano and which is no longer an adjective.

Adjectives are not inflected for tense-aspect. There is, however, a class of stative verbs in Philippine languages which are inflected for tense-aspect and which carry prefixes which are homophonous with the adjectival prefixes *ma-* and *na-*. The latter is the completed aspect form of the prefix in most Philippine languages and developed from Proto-Austronesian \**mina-*.

In many of the languages spoken by Negritos in the Northern Philippines (including the Ayta languages and Sinauna Tagalog of the Sambalic family, Casiguran Dumagat, and the Alta languages), the completed aspect of the stative prefix has both forms, *mina-* and *na-*, in free variation. Arta also has both affixes, but whether they are in free variation or are functionally distinct requires further research to determine. Table 17 lists the remaining *ma-*, *na-*, and *mina-* forms in the data, some of which may in fact be adjectives, and not stative verbs.

TABLE 17  
STATIVE VERB PREFIXES IN ARTA

English	Arta	English	Arta
hoarse .....	ma-paráw	broken .....	na-perdi
lacking .....	ma-kuráng	collapse .....	na-gsat
dry in sun .....	ma-bilag	dirt in eye .....	na-pulíngan
unripe, raw .....	ma-?áta	drown .....	na-limès
		forget .....	na-lipatan
full .....	mina-panno	stinging pain .....	na-?appès
lose .....	mina-hhut	wound .....	na-sagbit
narrow .....	mina-saldit		
sated .....	mina-battug		
wet .....	mina-kkay		

The actor focus prefix \*maN- characteristically is associated with two phonological processes in Philippine (and Indonesian) languages. The first is an assimilation process that changes the point of articulation of the final nasal to that of the initial consonant of the root to which it is attached. The prefix becomes *mam-* before bilabial consonants, *man-* before alveolar and dental consonants, and *mang-* (with a velar nasal) before velar and glottal consonants. The second is a deletion process which then deletes the initial consonant of the root under certain conditions, usually at least if that consonant is a voiceless obstruent, and in some languages, if it is any obstruent.

Ilokano is a language which appears to have lost both of these processes when *maN-* functions as a verbal prefix, for example, *mangpili* ‘to choose’ and *mangkalap* ‘to catch fish’ (*kalap* ‘fish’), although evidence of their earlier presence in the language remains in nominal forms such as *mangngalap* ‘fisherman’. Table 18 shows that Arta is similar to Ilokano in retaining verb-root-initial consonants when prefixed by *maN-*. Arta differs from Ilokano however in that assimilation still occurs. There is only one form in the data which loses its initial consonant under these conditions, and it is *mamangan* ‘to eat’, from Proto-Cordilleran \*mang- plus \*kan. Whether the loss of the consonant deletion rule in Arta is a result of contact between Ilokano and Arta, or a parallel development is uncertain.

The completed aspect form of this prefix directly reflects \*minaN- (e.g. *minambusali* ‘swelled up’), as in the Negrito languages mentioned above.

In Arta, the actor focus infix *-um-* has a variant *m-* occurring before vowel initial stems (see Table 19). This provides further evidence that the loss of glottal stop (described in Section 2 above) occurred in the initial positions

**TABLE 18**  
**maN- ACTOR FOCUS PREFIX IN ARTA**

English	Arta	English	Arta
breathe	mang-ángas	bathe	man-dimuy
cough	mang-iyeyer	broil	man-tunu
laugh	mang-alla	bubble (v)	man-sappu
lie (falsehood)	mang-katíg	cook	man-daságad
dig	mang-kutkut	fry rice	man-sanglag
play	mang-karuag	grow	man-tubu
tie	mang-gapèt	sew	man-daget
choose	mam-pili		
hunt (game)	mam-bugay		
pound (rice)	mam-bayú		
swell	mam-busali		

**TABLE 19**  
**-um- ACTOR FOCUS INFIX IN ARTA**

English	Arta	English	Arta
arrive .....	dumigdig	play .....	kumaruag
boil .....	sumpud	sit .....	tumuttud
climb (mountain) .....	sumarangsang	stand .....	tumadyor
depart .....	guminan	swim .....	tumpu
float .....	tumpaw	walk .....	dumama
laugh .....	m-alla		
urine .....	m-isbu		
vomit .....	m-uta		
wait .....	m-alagad		

of roots, as well as in medial positions, and that the glottal stop that appears between affixes such as adjectival *me-* and stative *ma-* and otherwise vowel-initial roots is, in fact, the result of a synchronically operative glottal stop insertion rule, rather than a reflex of a Proto-Cordilleran glottal stop in this position.

There are two forms in the data that are problematic with respect to this analysis. They are *um-bèr* 'to fly' and *um-ine* 'to climb a tree'. The former is possibly from an earlier \*ʔ-um-eber, with subsequent loss of the (unstressed) initial root vowel. I have no explanation for the latter form. Whether or not the *m-* variant of *-um-* occurs in any other language with which Arta may have had contact is still to be determined.

The completed aspect of this affix is *-inum-*, for example, *sinumpud* 'boiled', *tinumpaw* 'floated'.

**3.3 PRONOUNS.** Table 20 presents the Arta pronominal system. The loss of \*k in Arta had a considerable effect on the pronouns in the language, since six of the eight pronominal formatives include this phoneme in their reconstructed forms. The change was most noticeable in the first singular (1s) and second singular (2s) short, enclitic nominative forms. The Proto-Cordilleran reconstructed forms are respectively \*ak and \*ka. In order to maintain a distinction between first and second person after the loss of \*k, the free nominative first singular pronoun *tan* spread into the enclitic nominative set.

Ilokano and the Northern Cordilleran languages all have two variants of the genitive first singular (1s) and second singular (2s) pronouns. The first, a reflex of \*ku '1s' or \*mu '2s', occurs on roots that end in a consonant. The other, a reflex of \*k '1s' or \*m '2s', occurs on roots that end in a vowel, or it replaces the final consonant of the verbal focus suffixes

**TABLE 20**  
**ARTA PRONOUNS**

	Enclitic Genitive	Locative	Enclitic Nominative	Free Nominative	PCo Nominative <sup>93</sup>
1s	u . . . . .	dan . . . . .	tan . . . . .	tan <sup>94</sup> . . . . .	*siyaken
2s	mu . . . . .	daw . . . . .	a . . . . .	taw . . . . .	*siʔikaw
1,2s	ta . . . . .	dita . . . . .	ita . . . . .	tallipita <sup>95</sup> . . . . .	*siʔikita
3s	na . . . . .	dia . . . . .	o . . . . .	tawpadman <sup>96</sup> . . . . .	*siya
1p	mi . . . . .	dami . . . . .	ami . . . . .	meʔaduami <sup>97</sup> . . . . .	*siʔikami
2p	muyu . . . . .	dam . . . . .	am . . . . .	tam/tami . . . . .	*siʔikamuyu
1,2p	tam . . . . .	ditam . . . . .	itam . . . . .	kitam . . . . .	*siʔikitam
3p	di . . . . .	did . . . . .	tid . . . . .	tidu . . . . .	*siʔida

*-en* and *-an*. Arta does not have the single consonant variants. In this respect it is like Casiguran Dumagat. Since the *k* '1s' variant would have been lost when \**k* became zero in Arta, the *m* '2s' variant could have been lost at the same time.

Within the genitive set, it is of interest to note that it is only Arta among all of the Cordilleran languages that retains the full form of the reconstructed second plural (2p) pronoun \**muyu*. This form occurs elsewhere in the Sambalic languages of Northern Luzon.

Arta has replaced the initial case formative \**si-* on the free nominative pronouns with the singular, personal case marker *ti*, which also introduces nominative, singular, personal noun phrases in the language. In this respect it is also like Southern Alta. Casiguran Dumagat and Northern Alta, while using *ti* as the case marker for nominative, singular, personal noun phrases, have retained *si* as the formative on their free nominative pronouns.

Arta, Casiguran Dumagat, and the Alta languages are similar also in having retained what was probably the Proto-Cordilleran personal locative marker *di* (reduced to *d* on some pronouns) as the case formative on locative pronouns.

**4. CONCLUSION.** In several recent papers (Headland and Reid 1989a and 1989b; Reid 1987a and 1989), the question of the prehistoric relationship between Negritos and their non-Negrito neighbors has been explored. The evidence that has been presented in these papers suggests that interaction between Negritos and their neighbors has been an on-going state of affairs for literally thousands of years. This is based on the assumption that prior to the in-migration of the first speakers of an Austronesian language, probably by 3000 B.C., Negrito bands were the sole human occupants of the Philippines and that they did not speak Austronesian languages.

Today, all Negritos in the Philippines speak an Austronesian language, and the evidence continues to accumulate that in the north of the Philippines, especially, the switch from whatever language they originally spoke to an Austronesian language, took place well before most of the linguistic differentiation that we presently find in the Philippines developed.

In Reid (1989), I attempted to demonstrate that the Alta languages must have developed from contact with the Austronesian language which preceded the ancestor of all the Central and Southern Cordilleran languages. In this paper, I suggest that the Arta Negritos have been speaking an Austronesian language for at least as long, probably predating the dispersal of the Northern Cordilleran languages. The low percentage of shared inherited lexicon (the lowest by nearly eight percent from any other Philippine language so far examined), and the fact that it does not share certain phonological innovations found in all other Northern, Central, and Southern Cordilleran languages clearly indicate the long period of independent development that this language has undergone.

Independent development does not mean that the language has existed in isolation from its neighbors. On the contrary, this paper has attempted to show that there are large bodies of vocabulary in the language which are clearly borrowed from one or more of the languages in the area, providing evidence for continuing close social and economic relationships between these groups. The closest languages geographically to the areas where the Arta live are Gaddang and the Maddela dialect of Casiguran Dumagat. The paper has shown that much of the borrowed lexicon has come from these two languages.

Ilokano is the major trade language in all of Northern Luzon, and it has also affected the language in various ways. The possibility that Arta is more closely related genetically to Ilokano than to any other language in the north of the Philippines cannot be completely ignored. Early writers on the Negritos in the Philippines (e.g. Garvan 1963: 10) speak of Negritos as living in the mountain areas of both Ilocos Norte and Ilocos Sur. Today, these groups apparently no longer exist. Presumably though, if they learned their language from the ancestors of the Ilokanos, these Negrito groups would have reflected \*R as *r* (and probably *g*) in the same way as Ilokano does, and as Arta does. Perhaps the Arta originally lived in the Ilocos area, and in recent times have migrated east and south to their present homeland. Only an extended research period among this group by both linguists and anthropologists is likely to provide answers to such questions.

## Notes

1. This is a revised version of a paper presented to the Twelfth International Congress of Anthropological and Ethnological Sciences, Zagreb, Yugoslavia, July 24–31, 1988.

2. This research project was funded in part by a research initiation grant from the University of Hawaii Research Council. I wish to express my thanks to the Council for enabling me to begin this project. I also wish to extend my sincere gratitude to the many individuals who helped me to meet Arta speakers. They include numerous government officials, including Governor Nicolas de Liso and various municipal officials in the capital, Cabarroguis, all of whom were unfailingly courteous and helpful. I wish especially to thank Mr. Johnny Castillo, Senior Development and Management Officer of the then Office of Minority Affairs and Cultural Communities in Cabarroguis, and his wife Doming, who extended to me the hospitality of their home in Ligaya, Aglipay, and who enabled me to meet representatives of various Negrito communities in the area. My thanks go also to Mr. and Mrs. Abanico of Maddela for their kindness and assistance during my visits to that municipality. I am grateful also to the following native speakers of Arta, who provided me with information about their language: Pabling Olanyu, a young man about 25 years old, and Kuntawa Pantalion, a man about 60 years old, both from Impuyan, Villa Gracia, Maddela; Washington Bueno, Mrs. Dominga Sikmat Gaffud (both about 60), and Mrs. Salvacion Ramos (about 40), all from the Addalem River near Aglipay. Without their willing assistance, this project could not have proceeded. Arta equivalents for some 550 lexical items (McFarland's 1977 list) and several hundred sentences (based on Yamada and Tsuchida's 1983 set) were collected.
3. Unique forms are those forms for which no cognate has been found in any other language. The term thus includes forms which may appear similar to those in other languages but which have undergone some innovation, such as either a semantic shift or a sporadic phonological change, which is not shared with any other language.
4. Initials in parentheses following reconstructed forms refer to the authors of bibliographical citations in Wurm and Wilson (1975), primarily Dempwolff (D), Dyen (Dy), and Blust (Bl) for Proto-Austronesian; Zorc (Z), Charles (Ch), and Healey (H) for Proto-Philippines; and Himes (Hi) for Proto-Cordilleran. Arta provides evidence for a number of new reconstructions for Proto-Cordilleran, some of which may ultimately be shown to have an earlier provenance. These are marked as Reid (R). Additional evidence for each new reconstruction is provided in endnotes to the tables. Forms in the right-hand column without asterisks are either underlying forms in Arta (where the phonological rule being illustrated probably still operates synchronically) or are Proto-Arta forms, which are postulated on the basis of internal reconstruction. Sources of data are primarily Calimag (1965), Headland and Headland (1974), Himes (1988), Ibarbia (1969), Panganiban (1972), Reid (1971, 1976, 1987*b*, 1988), Vanoverbergh (1956, 1972), and Yap (1977). I have, in all cases, retained the transcription system of the source.
5. They do not include the Alta languages of the east coast of Luzon in which the reflex of \*R is 'l'. These languages belong to the Meso-Cordilleran subgroup of Cordilleran (Reid 1989).
6. Probably from a morphologically complex *ka-qagid-na*. Cf. DgtC *aged* 'beg, request'.
7. Probably a morphologically complex form, *na-?uput-di*. Cf. Ilk *naobos* 'alone'; PCo \**di* 'that'.
8. Cf. Bon *kotog* 'to lie'.



9. Cf. DgtC *dépog*; Gad *diffog*; IltK *dípug* ‘carabao’.
10. Cf. Ilk *túmeng* ‘knee’.
11. Cf. DgtC *sé pang* ‘spine, lower back of a person (at the back of the waist)’.
12. Apparently from an earlier *ka-qama-qan*.
13. Cf. Arta *uđing* ‘charcoal’.
14. Cf. \**ʔawak* (Dy) ‘body’.
15. Cf. DgtC *lagip* ‘story, tell a story’.
16. Cf. Gad *gutok* ‘pit of stomach’.
17. Cf. DgtC *dima, dumama* ‘go for a hike, take a walk’.
18. Cf. Ilk *agani* ‘to harvest rice, one who harvests rice’.
19. Cf. DgtC *géb wat* ‘source, origin, cause’.
20. Cf. Bk, Seb, Hil *kamang* ‘crawl’.
21. Cf. DgtC *latak* ‘white, light in color’.
22. Cf. DgtC *sol i* ‘to return, go back’.
23. Cf. DgtC *bidut* ‘buck (a large male deer)’.
24. Cf. DgtC *gum inan* ‘to flee, run away from, leave behind, desert, abandon’.
25. Cf. DgtC *lapol* ‘puppy’.
26. Cf. DgtC *tugén* ‘to deliver’.
27. Cf. Gad, Ibg *dappa* ‘fathom’.
28. Cf. DgtC *dukot* ‘build a fire’.
29. Cf. DgtC *pulog* ‘the long, twisted curls of hair left to grow on small children’.
30. Cf. DgtC *sibét* ‘strong (of a strong wind, swift river, strong man)’.
31. Cf. IltK *tubi* ‘thorn’.
32. Cf. Ilk *nadagsen* ‘heavy’.
33. Cf. DgtC *bunbun* ‘cloth head covering (as protection from sun)’.
34. Gad, Isg *ga: tang* ‘buy’.
35. AltS *ʔekol*; Gad, Ibg, Itw *qikag* ‘cough; Ilk *iker* ‘to become breathless, when suffering from a heavy cold, when coughing with difficulty’. Arta *e* (mid-front vowel) from \**e* (proto-schwa) is unexplained.
36. Gad *gatut*; Ibg *gatuq* ‘debt’.
37. See Blust 1972, Reid n.d.
38. AltS *kalbiʔ*; AltN *ʔalbi*; DgtC *kagbi* ‘pity’.
39. Isg *digu*; Ibg, Atta *zigu*; Gad *diyo* ‘soup’.
40. Ilk *takder*; Gad *mataqđig* ‘stand’. The palatalization of the medial consonant in Arta is unexplained. There are no other sequences of *dy* in my data.
41. Ilk *igges*, ItgB *qigis* ‘worm’.

42. Zorc cites the reconstruction as meaning ‘*stove*’. Possibly from PAN \*Dapuk (D) ‘*ash*’, with contamination of the final consonant.
43. Ilk *dárat*; Ibg *dága?*; Gad *dat*; Ibl *carat* (< Proto–Meso-Cordilleran \*dálat) ‘*sand*’.
44. Ilk *buggo*; Gad, Isg *baggu*; Bon *bulu*, Ibl *bolo* ‘*wash hands*’.
45. Ilk *agong*; Kapampangan ‘*árun*g’ ‘*nose*’.
46. Ivt *warig*; Tiruray *tewarey*; DgtC *patwadiq*; Hanunoo *patar’ari*’; Ibg, Isg, Atta *wagi*; Gad *wáyi* ‘*sibling*’. Reconstructed as PAN \*aji(h) ‘*younger sibling*’ by Dyen.
47. DgtC *apdés* ‘*to sting, to smart*’; Ilk *apgés* ‘*to smart, to cause a sharp, acute, smart, pungent pain*’.
48. Ilk, Gad, Han *buyók*; IltK, KlnKy *buyuk* ‘*foul odor, rotten*’. Possibly an early borrowing from a Sambalic language in which PAN \*buRuk (D) ‘*rotten*’ was reflected as *buyuk*.
49. Gad *gutok* ‘*pit of stomach*’. Possibly a borrowing from an early Northern Cordilleran language prior to the change of \*s to *t* in those languages.
50. DgtC *dukot* ‘*to build a fire*’.
51. DgtC *tikéd* ‘*foot, leg, footprint*’; AltN *ti?id* ‘*foot, leg*’ (Reid 1989).
52. Maranao *kila* ‘*laugh*’.
53. Isg *qabaq*; Itw ‘*abák*’; DgtC *abék*; KlnKl *qabek*; IfgBy *qa:boq*; IltK *qabik* ‘*mat*’.
54. AltS *madi:pit* ‘*unmarried girl*’; IfgK *dikit* ‘*girl’s beauty, prettiness*’; Bon *magmaggit* ‘*unmarried girl*’.
55. Citation forms commonly have an enclitic *i* or *e* attached, functioning as either a determiner or demonstrative, e.g. *duyani* ‘*It’s a hammock*’, *ulasi* ‘*It’s a blanket*’, *bibigmue* ‘*It’s your mouth*’. The form *abake* is from *abakai* ‘*It’s abaca*’.
56. Cf. DgtC *umunek* ‘*to climb up a tree, in playing, or just for fun*’.
57. The presence of prefixes in Arta containing the phoneme *k* suggests that either the *k > 0* rule did not affect affixes, or that intimate contact with a language that contained these affixes resulted in the subsequent restoration of their full forms. The form *minaka-* is the past tense, abilitative prefix in Casiguran Dumagat (Headland and Headland 1974: xxxix).
58. Probably a borrowing of Tag *sirà* ‘*defect, deterioration*’.
59. From \*taRa-qinep (Z). Vowels following voiced stops in Arta (in this case *g < \*R*) harmonize with the vowel of the following syllable.
60. From \*paCey-en (Z).
61. Cf. Ilk *birok-en* ‘*look for, seek, search for*’. But note Arta *biton* ‘*star*’ from \*bituqen (Dy) which is probably a borrowing of DgtC *biton* ‘*star*’, in which *o* is the regular reflex of \*u in a final syllable not preceded by a voiced stop (Headland and Headland 1974: xxi).
62. The root probably borrowed from Ilokano *lokoen* ‘*to cheat*’, from Spanish *loco* ‘*mad*’.

63. But note *bebay* 'sea' from \*baybay (Z), and *taletay* 'bridge' from \*teyey (Z). Compare also *pagáy* 'rice (plant)' from \*pa:jey (Ch), *anáy* 'termite', *tumpaw* 'float', *lángaw* 'housefly', and *mepulaw* 'white', in which the diphthongs were not reduced.
64. The development of the medial \*awe sequence in Arta parallels exactly the development of this sequence in Gaddang. Since *god* 'betel leaf' has a *g* reflex of the initial segment, rather than the expected *r*, the form is probably a borrowing from that language. Both Casiguran Dumagat and Ilokano retain the original \*awe sequence unchanged. The only language that has a *g* reflex of the final segment is Itawis *gawag*. All other Cordilleran languages, in which *g* would be the expected reflex, also show *d*, e.g. Isg *gawad*, Ilt *gawid*, Blw *lawig*, K1aG *lawod*.
65. But note *damadmang* 'bright' from \*demang; *dapúg* 'carabao' from \*depug.
66. This form suggests that vowel harmony operated when the initial consonant of the penultimate syllable was an obstruent, not just a voiced stop.
67. The change from \*w to *b* is unexplained.
68. Cf. Arta *dumama* 'walk', suggesting that this rule may be still synchronically operative in the language.
69. Ilk, Bon *anges*; DgtC *angés* 'breath, to breathe'. Cf. \*hangus (Dy) 'breathe heavily'.
70. AltS *wagot*; AltN *wagit* 'water, river'.
71. Agta *galgal*; DgtC *gélgél* 'slice meat'.
72. Cf. Ilk *pekkelen* 'to wring, knead'.
73. Ilk 'neck'.
74. Cf. Gad *dikkat*; Itw *mazzikkat* 'to stick'.
75. Gad *gullak* 'cracked, split'.
76. Gad *kokawa*.
77. Gad *kurilan*. Possibly from English 'curling'.
78. Also Itawis.
79. Gad *patu* 'hot'. In Gaddang (as well as in other Northern languages) \*s > *t* in this environment.
80. Gad *barwasi*.
81. Gad *darogat*.
82. Gad *tullay*.
83. Ilk *lokoen*.
84. Ilk 'snap'.
85. Ilk 'stony place'.
86. Ilk *agdiram-us*.
87. DgtC *lukag*.

88. DgtC *buktet*.
89. DgtC 'a kind of arrow'. Palanan 'arrow (general term)'.
90. DgtC *dengdeng*.
91. DgtC *puduk*.
92. Also Manobo languages.
93. From Reid (1979).
94. From \*ti-aken, with regular loss of \*k, regular reduction of *ae* to *a*, and loss of *i*.
95. From *tallip-kita* 'two of us' with regular loss of \*k.
96. A morphologically complex form of uncertain origin. The sequence *padman* also optionally occurs following other pronouns, e.g. *kitam padman* '1,2p'; *tidu padman* '3p'.
97. From *me?adu-kami* 'many of us (exclusive)', with regular loss of \*k.

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