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Retroflex vowels? Phonetics, phonology, and history of unusual sounds in Kalasha and other languages of the Hindu Kush region

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Parole chiave: Fonologia storica, Lingue indoarie, Lingue nuristane, Pakistan, Afghanistan, sociolinguistica storica.

Riassunto — Prima attraverso una disamina dello statuto fonologico delle vocali retroflesse del kalasha sulla base di dati raccolti sul campo, poi grazie alla loro considerazione in prospettiva areale e storico-linguistica, questo articolo mira ad aggiungere un piccolo tassello alla complessa storia delle relazioni tra le culture preislamiche del Hindu Kush e delle loro lingue. Il risultato è la delineazione di una possibile traiettoria di convergenza tra alcune di queste lingue relativamente allo sviluppo dell'articolazione vocalica retroflessa. I tentativi storico-linguistici vengono infine accompagnati da alcune riflessioni sociolinguistiche, nell'intento di dare profondità antropologica a processi che spesso la linguistica storica di ispirazione neogrammatica ricostruisce asetticamente come interni alla lingua, sottovalutando il problema delle motivazioni che i parlanti possano avere (avuto) nel facilitare o contrastare processi di mutamento linguistico.

Key words: Historical phonology, Indo-Aryan languages, Nuristani languages, Pakistan, Afghanistan, historical sociolinguistics.

Summary — First through an analysis of the phonological status of retroflex vowels in today's Kalasha based on fieldwork-based research, then through areal and historical comparative lenses, this article aims to add a small token to the complex history of the relations between the pre-Islamic cultures of the Hindu-Kush and of their languages. It is suggested that the development of the retroflex articulation of vowels may be seen to add to other, however not uniform, evidence pointing to processes of convergence among some of these languages. A sociolinguistic critical perspective is finally added in response to the problem of the speakers' motivation for language change, often neglected by mainstream historical linguistics.

Mots-clés: Phonologie historique, langues Indo-Aryennes, langues Nuristanes, Pakistan, Afghanistan, sociolinguistique historique.

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Resumé — Tout d'abord, à travers une analyse du statut phonologique synchronique des voyelles rétroflexes de la langue kalasha basée sur des recherches de terrain, puis à travers une analyse comparatives régionale et historique, cet article vise à ajouter un petit témoin à l'histoire complexe des relations entre les cultures pré-islamiques de l'Hindu-Kush et de leurs langues. Il est suggéré que le développement de l'articulation rétroflexe des voyelles peut être vu comme ajoutant à d'autres, pas uniformes, preuves indiquant des processus de convergence entre certaines de ces langues. Une perspective sociolinguistique critique est enfin ajoutée en réponse au problème de la motivation des parlants pour le changement linguistique, souvent négligé par la linguistique historique dominante.

Introduction

Kalasha [kls] (also called Kalashamon or Kalashamun) is a Dardic or Northwestern Indo-Aryan language spoken today as a first language by about 5.000 people residing in the Chitral District, the northernmost district of the Khyber Pakhtunkhwa province of Pakistan (Fig. 1). Most of the speakers live in three narrow valleys – Birir, Rumbur, and Bumburet – while some few speakers have probably remained further to the South, in the valleys of Urtsun and Jinjeret Kuh[1]. Linguistically, as well as culturally, the three northern valleys can be understood as forming two groups: Rumbur and Bumburet (henceforth KalRB), on the one hand, and Birir (henceforth KalBi), on the other. The differences between these two varieties are mostly phonological, KalBi being more conservative than KalRB of Old Indo-Aryan (henceforth OIA) phonology. For instance, at the syntagmatic level, KalBi preserves Old Indo-Aryan /-tr-/ clusters whereas KalRB has lost them: e.g. KalBi *m'atrik* ~ KalRB *m'aik* "to say" (see Di Carlo, 2010, 12-14). As for the paradigmatic level, there is a key difference between KalBi and KalRB that is clearly salient also to the speakers themselves: retroflex vowels.

On the very first evening of my fieldwork in Birir (September 2006), upon learning that I was planning to stay there for some months in order to study the local variety of Kalasha (i.e. KalBi), a jovial, moustachioed man of fatherly attitudes called Unat Bek introduced me to what he felt were the main differences between KalBi and KalRB. He began by offering two minimal pairs[2], namely [gawaɽ'iak] / [gæ˞wæ˞'i˞ak] and [peʂgangaɽ'iak] / [peʂgængæ˞'i˞ak], with the effect of a generalized hilariousness among those present. The first element of each pair was the KalBi variant, the second the KalRB variant. The first pair refers to English "rabbit" and the second, as I later discovered, to "goats' excrements": a humorous climax indeed.

The differences between KalBi and KalRB Unat Bek stressed in his performance all pointed to the fact that KalRB has retroflex vowels – which I transcribe here with the addition of the modifier {˞}, i.e. the IPA diacritic for rhoticity – in environments where KalBi has not (see Sections 2.2 and 2.3). In this article, I will try to show that they represent a tiny yet potentially very informative part of Kalasha phonology (§2) that can shed light on the language history of Kalasha as well as of that of the languages of the surrounding area (§3), and provide matter for some general theoretical and sociohistorical considerations (§4).

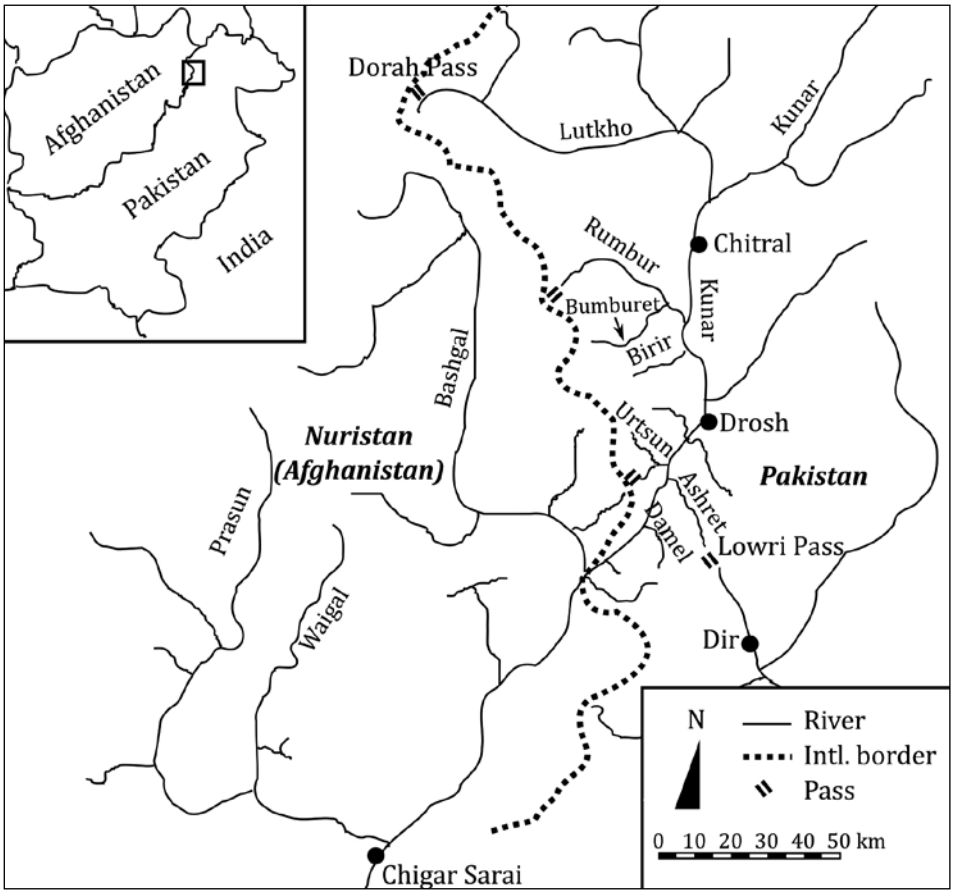

Fig. 1. *The research target area: the Chitral District (Pakistan) and Central and Eastern Nuristan (Afghanistan).*

Retroflex vowels in Kalasha phonology

The trait of vowel retroflexion

The trait of vowel retroflexion, better known in its acoustic definition of "rhoticity", is very rare in the world's languages: these phonemes or, better, one centralized retroflex vowel is documented in 0,89% of the 451 languages present in the UCLA Phonological Segment Inventory Database (UPSID, http://web.phonetik.uni-frankfurt.de/upsid.html).

Probably the first scholar who coined the term "retroflex vowel" (henceforth RV) was Murray B. Emeneau in his 1939 essay on the Badaga language ([bfq], Southern Dravidian) spoken in Tamil Nadu, where two different degrees of retroflexion were found for all the vowel qualities. One of the other few cases of a whole set of RVs was signaled by Ian Maddieson in Eggon [ego], a Benue-Congo language spoken in Nigeria (Maddieson, 1972).

Trail and Cooper (1985) were the first to identify RVs in Kalasha (not present in UPSID), a proposal that has not been challenged since then (see discussions in Mørch and Heegård, 1997; Heegård and Mørch, 2004, 67-73; Heegård, 2006, 28-9). Minimal pairs exist that would seem to ensure that these are phonemes (see Table 1). However, it is important to recall that this "category of resonance" – following Emeneau's definition – had never been hypothesized before and that, at a closer look, the actual phonological status of these sounds is not as transparent as one would gather from recent literature. The first part of this article is devoted to shedding more light on this issue.

Table 1. *Minimal pairs involving plain, nasal, retroflex, and retroflex nasal vowels in Kalasha (from Di Carlo, 2010, 42)*

Vowel contrast	Non-retroflex vowel	Retroflex vowel
/a/ ~ /a˞/	[ʻangu] "grape"	[ʻa˞ngu] "finger"
/a/ ~ /ã˞/	[ma'jak] "rising agent"	[ʻmã˞jak] "niche in wall"
/i/ ~ /i˞/	[ʻabi] "1P:NOM"	[a'bi˞] "cover:CP"
/u/ ~ /u˞/	[ugu'ik] "to feel pain"	[u˞'guik] "to polish stone"
/u/ ~ /ũ˞/	[su'a#i] "heal-CP"	[ʻsũ˞a] "gold"
/e/ ~ /e˞/	[be] "good, well"	[be˞] "bullet"
/e/ ~ /ẽ˞/	[pe] "if"	[pẽ˞] "hand's palm"
/o/ ~ /o˞/	[pon] "pleasure"	[po˞#n] "hop:PST.A-3P"
/o/ ~ /õ˞/	[po] "footprint"	[põ˞] "leaf"

Early and modern understanding of RVs in Kalasha

In the words where we currently identify RVs, Georg Morgenstierne, the first professional linguist dealing with Kalasha in detail, recognized sequences of "palatal fricative" (Morgenstierne, 1973a, 191), transcribed {ř} or {ŕ}, followed by a vowel or vice versa (see Table 2)[3]. It is highly likely that this sound would correspond to IPA "retroflex approximant" [ɻ]. It is impossible for us to evaluate whether this transcription was only adhering to real linguistic facts (the data have been collected in 1929), or if the then young Norwegian linguist, exposed for little time to Kalasha, lacked the necessary readiness to identify conceivably unexpected sounds[4].

Table 2. *Examples of different transcriptions of RVs by Morgenstierne (1973a) and Trail & Cooper (1985). Note that Morgenstierne uses ř / ŕ for the "fricative palatal" sound he heard (1973a, 191), and Trail & Cooper adopt the underwritten dot to signal vowel retroflexion*

Morgenstierne 1973a	Trail & Cooper 1985	English gloss
kil'ăř	*kil̩ą*	thickened cheese
nəř	*nọ*	below, underside
k'uřak (kř-?)	*kɻ̣ak*	child, offspring
přẽ	*pɻ̣̃*	palm of hand

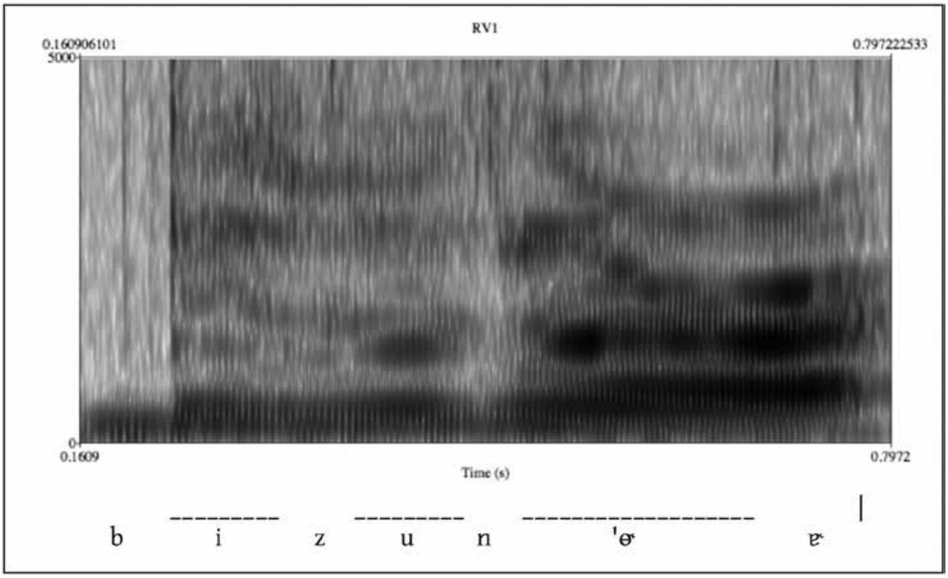

Fig. 2. *Spectrogram RV1. Only instance of a clear RV realisation by FK (adult-aged male, muslim, Mirbasénawau lineage resident in Jauguru, probably speaks also Khowar, Kam-Kataviri and some Arabic).*

The first question I aim to answer here is: is there such a "fricative palatal" or, probably better, "retroflex approximant" sound in Kalasha? For the time being I will consider Kalasha as a coherent whole, although, as we shall see, this probably leads to an inadequate approach to the problem.

Phonetics and phonology of RVs

In the data collected during the 2006-2007 fieldwork in Birir by Augusto Cacopardo and myself, a sound probably approaching the retroflex approximant [ɻ] posited by Morgenstierne can be heard only in few cases, all of which seem to be predictable on the basis of context, i.e. in prevocalic position and after a stop or an affricate as in *ud'ụ~* "dust cloud" often pronounced [u'dɹũ˞], or *paC(h)'ĩ˞ek* "bird" often heard as [pa'ʈʂɹĩek]. Moreover, there are cases in which I find it very difficult to posit that vowels are realized in a retroflex mood because of the inclusion of an approximant: e.g. the many cases of /r+V˞/, like in *krO* [kro˞] «breast» or *barU'ek* [baru˞›ek] "to defeat an enemy".

Compare also the spectrograms in Figs. 2-6, obtained from the elaboration in PRAAT of selected chunks of natural discourse performances Augusto Cacopardo and myself recorded in Birir in 2006 and 2007[5]. The following are some short remarks on the spectrograms.

In both Fig. 2 and Fig. 5 there is a progressive lowering of *F*3 at the onset of the central mid-high labialized vowel [ɵ], a common feature of *r*-coloured vowels (cf. Ladefoged & Maddieson, 1996, 234-236). In both these spectra I find no traces of

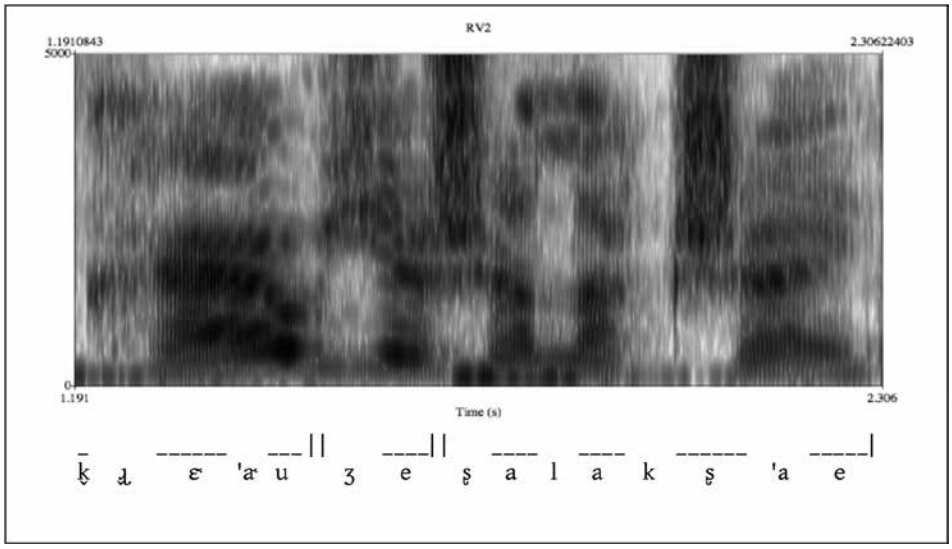

Fig. 3. *Spectrogram RV2. Speaker: G, adult male, traditional religion, Latharuknawau lineage, resident in Guru, speaks also Khowar.*

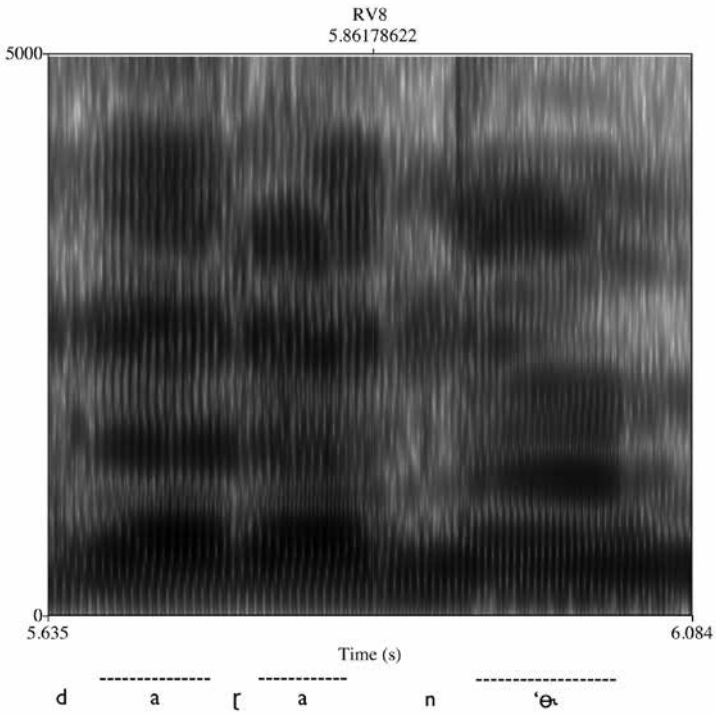

Fig. 4. *Spectrogram RV8. Speaker: E, adult male, traditional religion, Latharuknawau lineage, resident in Guru, speaks also Khowar and some English.*

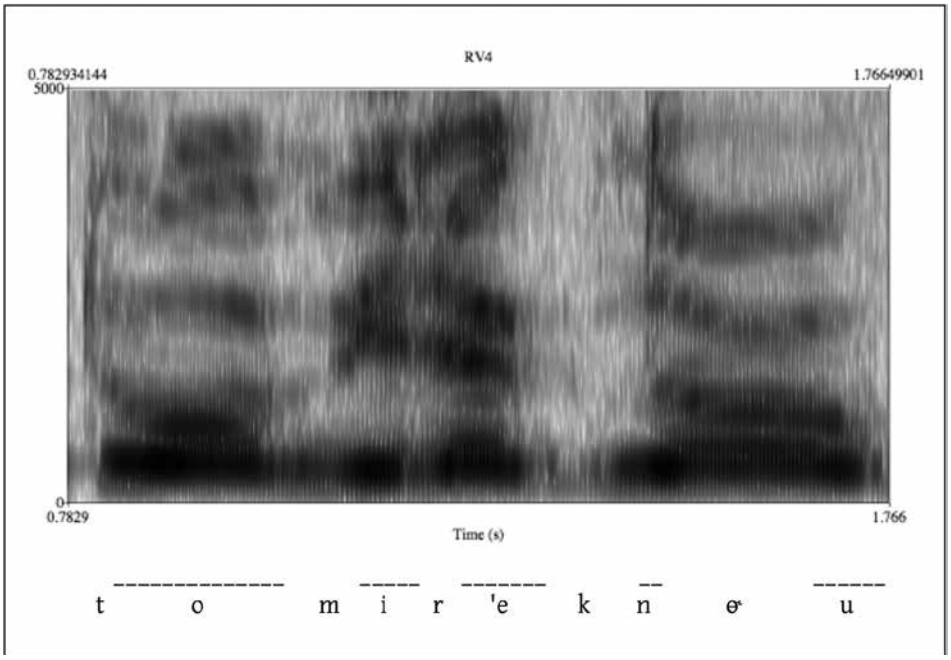

Fig. 5. *Spectrogram RV4. Speaker: S, aged man, traditional religion, Latharuknawau lineage, village elder of Guru, lives in Sandik, speaks also Khowar, Urdu and probably Panjabi.*

any independent approximant sound. Moreover, the rhotic trait seems to affect the following [a] in Fig. 2 (*nó*-a "underside-LOC = under, below"; cf. also Heegård & Mørch, 2004, 67). In other words, retroflexion appears as one of the vowel segment features.

Note, in Fig, 5, the opposition between [o] and the supposed [o˞]: as expected, the latter is more centralised (higher value of *F*2).

In Fig. 6 as well, I find no trace of any approximant sound: we should conclude, then, that here we can see one of the rare instances of [i˞] (see Di Carlo, 2010, 41ff.).

In Fig. 3 we see, on the contrary, that between the initial [k] and the (retroflex) vowel there is another sound, probably a retroflex approximant segment [ɻ]. This is an instance of the conditional distribution of this sound recalled above: sequence of velar stop (voiced and unvoiced) and (supposedly) retroflex vowel often give rise to such an independent segment.

Fig. 4 is unfortunately not clear enough. I would be inclined to identify a retroflex articulation of the vowel, since the vowel segment is centralised and the modulations observed in its realization show no relevant discontinuities. That is why I represent it as [ɵ˞].

If we consider the conditional distribution of [ɻ], the existence of sequences in which retroflexion can hardly be other than one of the simultaneous traits compo-

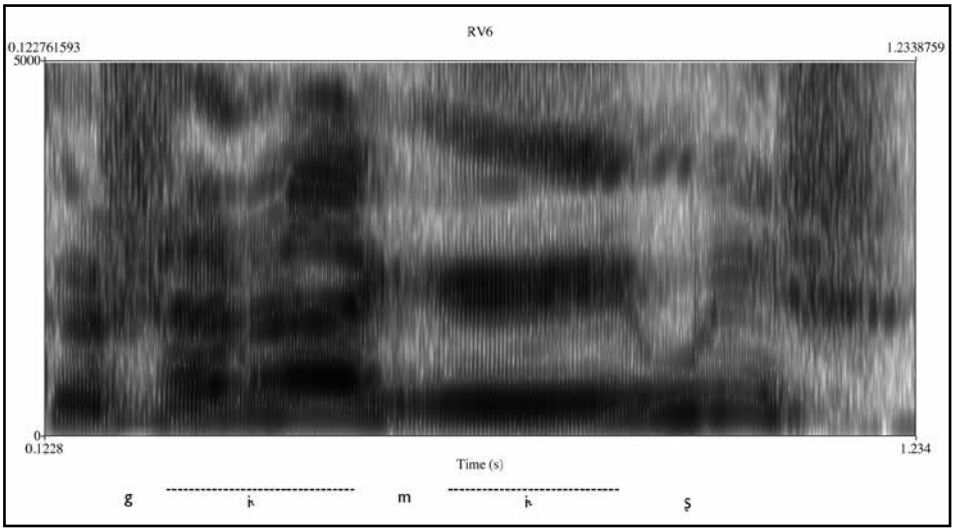

Fig. 6. *Spectrogram RV6. Speaker: S, aged man, traditional religion, Latharuknawau lineage, village elder of Guru, lives in Sandik, speaks also Khowar, Urdu and probably Panjabi.*

sing the vowel, and the minimal pairs summarised in Table 1, then we seem to be enabled to rule out the possibility that the retroflex approximant has phonological status in Kalasha. This seems to also confirm that retroflex vowels have phonological status in both KalRB and KalBi varieties, although in the latter they are not generalised to all environments. All transcriptions based on Morgenstierne's data should then be updated on the basis of this clarification. It is unfortunate that this *rarissimum* has not been addressed with due emphasis in existing literature. But how did these sounds come about in Kalasha? And, how important are dialectal differences within Kalasha in this regard?

RVs in areal and historical perspective

Being so rare, i.e. typologically marked, it is self-evident that the areal distribution of RVs would certainly bear some significance for areal and historical considerations. The first step in this direction has already been taken by Jan Heegård and Ida Mørch (2004) who have shown, on the one hand, that RVs are apparently absent in Eastern Kalasha dialects (viz. Lawi, a village located some 7 km north of today's Drosh; Kalkatak and Suwir, two villages located some few km to the southwest of Drosh) and, on the other, that RVs are found in some Nuristani languages like Kati (ISO code [bsh], spoken in few villages in the Chitral district but mainly in the Bashgal valley, in Afghanistan's Nuristan) and Waigali (ISO code [wbk], spoken mostly in the Waigal valley, Nuristan). It goes without saying that such proposal implies to consider the possibility that RVs exist in Kalasha as well as in Kati and Waigali

because of possible contact-induced changes between these languages (Heegård and Mørch, 2004, 73).

Heegård and Mørch have also laid the foundations of the reconstruction of the RV historical development, recognizing that "a single intervocalic retroflex consonant in OIA, according to Turner (1966), is lost in Kalasha, and the feature of retroflexion is transferred to the preceding vowel" (*ibid.*, 69). In the following pages I shall try to further their suggestions.

Areal comparison

Phonetically retroflex vowels are very common in Kamviri (ISO code [xvi], spoken in the lower Bashgal valley, Nuristan) and Kati (spoken in the higher Bashgal valley): in the opinion of both Grjunberg (1980, 166-67) and Strand (email 1.10.2008), these sounds are produced due to assimilation with an adjacent retroflex (sometimes nasalised) approximant. An alveolar approximant (IPA [ɹ], both acoustically and articulatorily very similar to the retroflex approximant, IPA [ɻ]) has been found in Waigali, where it seems to be in complementary distribution with the retroflex flap and to trigger contextual vowel retroflexion (cf. Strand, 1999, 237-38). The sound transcribed by Morgenstierne and others as ř or ŕ, no doubt a retroflex or alveolar approximant, is also found in Ashkun (ISO code [ask], spoken in Afghanistan's Nuristan) and Dameli (ISO code [dml], spoken in southern Chitral district): Perder (pers.comm.) signals, for Dameli, the existence of phonetic RVs, while for Ashkun we have only an indirect evidence, which I shall try to resume as follows.

To complement what I said in Section 2.2 above, it is important to recall that Morgenstierne has often noted a centralized vowel (transcribed with a dieresis) in the vicinity of ř, ŕ, and sometimes of ṛ : after what we have seen in Figs. 2-6 there can be little, if any doubt, that these centralized vowels correspond to our RVs. In fact, we know that the feature of retroflexion normally propagates within the word, typically towards its beginning and including also the vowels (cf, Strand, 1999, 238; Heegård & Mørch, 2004, 67-8; Evans, 1995 for Australian languages). We also know (Lindau, 1978, 554-55; Ladefoged & Maddieson, 1996, 234-36; see also Figs. 2 and 5) that the retraction of the tongue root, the 'prerequisite' for vowel retroflexion, produces the lowering of F3, so determining a centralized realization of the vowels. So, on this basis, it is not surprising that Morgenstierne noted, for instance, both *yäkäi* and *yäkäři* for the oblique plural of the Ashkun proximal demonstrative: this suggests that he heard a very weak retroflex approximant, and that both vowels (for anticipatory assimilation) were retroflexed.

Thus, for the time being and until new research is done, I assume that wherever Morgenstierne has noted a centralized vowel (mostly ä and ö) adjacent to ř, the vowel had a retroflex articulation. This assumption would allow us to take a first step, and see that many languages of our area (for sure Kamviri, Kati, Ashkun, Waigali, Dameli, let alone Kalasha) share at least the characteristic of assimilating the retroflex feature on vowels, i.e. there is a retroflex approximant in their phonological repertoires. But it could be even more significant than that.

On the historical development of RV

Heegård & Mørch (2004), as mentioned above, have explored the origin, but not the stages of the development of RVs. Between the Old Indo Aryan (henceforth OIA) full retroflex consonants and the Kalasha RVs there must have been some intermediate steps. The evidence provided by Khowar (henceforth Kh.) is helpful in these respects.

As we can see in Table 3, OIA intervocalic retroflex stops have regularly changed into Kh. velarized lateral ɭ[6], while OIA intervocalic retroflex nasal has simply lost the feature of retroflexion, resulting in Kh. *n* . In Kh. the process has come to a halt at this stage of weakening, while Kalasha has evidently taken another path.

Table 3. *OIA antecedents to some Khowar and Kalasha words, the latter differentiated in the two Northern varieties spoken in Rumbur/Bumburet (Kal*RB.*) and Birir (Kal*Bi.*)*

OIA (Turner, 1966)	**Kh.**	**KalRB. / KalBi.**
ātí- > āḍi "an aquatic bird" (T1127)	aḷi "duck"	*ại* / *aṛi*
cūḍa- "topknot on the head" (T4883.1)	*cuɭ* "braid"	*cụi* / *cuṛi*
dāḍima- «pomegranate tree» (T6254.1)	*daɭum* "pomegranate"	*dạim* / *daṛim*
gáḍa- "ditch" (T3967, T4070.2)	*goɭ* «small ravine, throat"	*gạ*
khēṭa- "shield" (T3915)	*kheɭi*	*kạạ* / *(kř.A)*
kilāṭa- "inspissated milk" (T3181)	*kiɭaɭ*	*kiɭạ*
**aḍin-* "millet" (T195)	*oɭin*	*ạin* / *aṛin*
**angūḍi-*"finger" (T135.2)	*angul*	*ạngu*
kāṇá- "one-eyed" (T3019)	*kanu* "blind"	

Since an entire set of RVs (for those who consider RVs as full phonemes) could have reasonably arisen *only* through a process of assimilation, and that in order to do so we must posit that the OIA intervocalic retroflex consonants have undergone a process of weakening, we are left with two options besides the Kh. ɭ : either /ɻ / (Morgenstierne's ř), or /ɽ / (the retroflex flap graphically represented by ṛ, often realized as a tap). As shown in Table 3, in today's Kalasha ṛ does exist, namely only in KalBi, and this fact should induce us to assume that the first stage of weakening of OIA intervocalic stops in Kalasha was represented by ṛ. At the same time, however, we observe that KalBi ṛ never triggers vowel retroflexion: e.g. KalRB. ['da·im], KalBi. ['daṛim] "pomegranate". Thus, ṛ seems to be the best candidate as the Kal. first stage of weakening of the OIA intervocalic retroflex consonants: yet, it does not explain the vowel retroflexion we see nowadays.

Table 4. *Some examples of the developments of OIA intervocalic retroflex consonants in Khowar (Kh.), Kalasha (KalRB/KalBi), Kamviri, Kati, Waigali (Waig.), Ashkun (Ashk.), Prasun (Pras.), and Dameli (Dm.). Note that Kamviri and Kati words have been conflated under K.Ktv due to identity of the forms considered*

OIA (Turner)	**Kh.**	**KalRB./ KalBi.**	**K.Ktv.**	**Waig.**	**Ashk.**	**Pras.**	**Dm.**
khēṭa- "shield" (T3915)	*kheḷi*	*kaą* / *(kř̆ą)*	*kiř̆a* / *kira*		*kaṛä~*	*kiṛa*	
kilāṭa- "inspissated milk" (T3181)	*kiḷaḷ*	*kilą*	*kilař̆*		*tsila*	*kili*	*kilär̆i*
**aḍin-* "millet" (T195)	*oḷin*	*ąin* / *aṛin*	*awř̆i~*				är̆'in
**kuḍa-* "boy, son"(T3245)		*kụak*	*kř̆u*	*kör̆*	*kūṛə*	*kyürü*	
gōṇî- "sack" (T4275)		*ghū̆i*		*gř̆oi* / *gř̆e~*	*go~*		*gūni*
**angūḍi-* «finger"(T135.2)	*angul*	*ąngu*	*anyuř̆*	*a~ř̆u*	*anuř̆*	ügü	ānguř̆i

Morgenstierne (1973b) has shown that numerous Dardic and Nuristani languages (but only marginally Khowar) have passed through a rather recent stage of metathesis of liquids: being *ṛ* a liquid, it could have been exposed to such a process, then determining new environments where its articulation could be plausibly further weakened towards an approximant realization, thus giving rise to RVs. Nevertheless, there are several other facts that probably deserve our attention: we know (Strand, email 1.10.2008) that metathetic processes, concerning liquids as well as retroflex approximants, have been and are still effective in Kamviri and Kati (and probably also in other Nuristani languages). Furthermore, in K.Ktv, and probably also in Waig., the OIA intervocalic retroflex consonants seem to have often changed into *ř* (and *wř*) or its nasal counterpart *ň* (following Strand's transcription). Finally it is also noteworthy that *ř* "predominates" in Kati speech (cf. also Grjunberg 1980: 169), being the outcome of, e.g., many cases of OIA initial *r* (e.g. Kati *ř*otr < OIA *rātrī-* "night", T10702) and OIA postconsonantal *r* after non-apicals (e.g. Kati *bř̆a* < OIA *bhrātṛ-* "brother", T9661). As for Waigali, OIA initial *r-* has changed into *nř-* (e.g. Waig. *nř̆uk* "salt" < OIA *rucaka-* "acid, sochal salt", T10761).

Thus, since it is the retroflex approximants that clearly promote retroflexion on adjacent vowel(s), they would seem to better fit both the requirements we sought above, i.e. to be a weakened form of OIA retroflex consonants, and to accommodate the development of RVs. On this basis it seems reasonable to think that the language from where the retroflex approximant (and consequently also the possibility of RV) could spread out was Kamviri and/or Kati. Hence, we face two possible reconstructions of the process leading to Kalasha RV (Table 5):

OIA intervocalic retroflex consonants first became *ṛ* (and, conceivably, the nasal

ṇ was maintained); these sounds took part to the metathesis of liquids; then, both co-articulatory constraints and influences from Kati (and/or Waigali) have promoted the passage from *ṛ*/*ṇ* to *ř*/*ň*; at this stage the feature of retroflexion could be assimilated by adjacent vowels, and ultimately give rise to the RV (let alone their phonological status, as always in this paper!).

Table 5. *Two hypothetical developments of Kalasha retroflex vowels through the example of Kal. k'ṇak "child, offspring"*

Hypothesis A	OIA *kuḍa-	Kal. weakening *kuṛa	Metathesis liquids *kṛua	Contacts with K.Ktv + co-articulatory constraints *kř̆ua	RV can develop *kř̆u̯a	Loss of the retroflex approx. kṷak
Hypothesis B	OIA *kuḍa-	Weakening is achieved only through contacts with K.Ktv *kuř̆a		Metathesis (K.Ktv) *kř̆ua	RV can develop *kř̆u̯a	Loss of the retroflex approx. kṷak

OIA intervocalic retroflex consonants have first become *ř*/*ň* because of influences from Kati (and/or Waigali); these sounds, as it still happens today in Kati, were exposed to metathesis; this produced the ideal phonetic environments for assimilating the feature of retroflexion on vowels, and ultimately gave rise to the RV.

It is also possible not to mutually exclude these hypotheses, since they could explain the evident differences we observe between the two Northern varieties of Kalasha. We know that the Birir variety regularly has [-*Vɽi#*] (-*Vṛi* in simplified transcription) where the Rumbur one has [–V·*i#*] (see examples in Table 3); moreover, I have recorded several examples indicating that sometimes, at least in the speech of some elders, *ṛ* re-emerges also in other, unexpected environments (e.g. [ˈnoɽa] for [ˈno·a] "above"). In this conjectural perspective, Birir could have followed the process outlined in A above, while Rumbur/Bumburet could have gone through the one outlined in B.

One last consideration seems to further corroborate the idea that the two hypothetical reconstructions could fit the differences between KalBi and KalRB varieties, explaining them on historical basis. The few data provided by (Heegård & Mørch, 2004) show that:

1. Suwir and Kalkatak varieties are more similar to the Birir variety in that they retain *ṛ* in pre-*i* environments[7];

2. Lawi seems to have altogether lost any trace of OIA intervocalic retroflex consonants, so showing to have gone through a peculiar development;

3. in Urtsun, RVs seem to be well documented.

This similarity between Urtsun and KalRB varieties evidently contrasts with the geographical setting, since between Rumbur and Bumburet valleys to the North, and Urtsun to the South, there is the valley of Birir, which was probably occupied by Kalasha people before the beginning of at least some of the phonological processes we are analysing here (cf. Morgenstierne, 1947, 237-38). Thus, in this case, it is not geographical, but rather historical data that are able to give us a reasonable explanation of such linguistic situation: in fact, we know that in the last centuries Urtsun has been characterized by intense contacts with the Kom communities inhabiting the lower Bashgal Valley (cf. Cacopardo & Cacopardo, 2001, 261-62).

The whole picture, though hypothetical, seems to be rather clear: the development of retroflex vowels in Kalasha can be probably better understood in terms of contact-induced changes from Kamviri and Kati. The two hypotheses I outlined above (A, B) could further help to understand the present internal differentiation between the two varieties of Northern Kalasha.

Concluding remarks: sounds and emblems

In concluding this article, I would like to offer some more matter to be considered for future research, hoping the political situation of the whole Afghanistan – Pakistan borderland will soon allow new fieldwork activities.

The overall rarity of retroflex vowels has brought me to deal with their phonological status, areal distribution, and history in a way that linguists would consider acceptable. However, to my eyes there is one major lack in this approach and, consequently, in the kind of questions that it raises: speakers' motivations. What follows comes from observations made in areas that have on the surface nothing in common with the Hindu-Kush region. As I will try to show in the final paragraphs of this section, I think they can help us develop a more nuanced and complex perspective on retroflex vowels in Kalasha and adjacent languages.

After my doctoral studies on Kalasha language and culture, I radically changed research area: over the past seven years my research has been focused on the languages and societies of Lower Fungom, a linguistically highly diverse micro-area of western Cameroon (Di Carlo, 2011a; Di Carlo & Pizziolo, 2012; Di Carlo & Good, 2014; Di Carlo, 2016). In my first fieldwork in the area in 2010, I started my survey from a village called Mundabli: the local language is called Mundabli (ISO code [boe]) although this appears to be a variety within the so-called "Ji cluster", composed also by the lects spoken in the villages of Mufu and, probably, Buu (cf. Good et al., 2011). In the variety spoken in the village of Mundabli there is a whole set of pharyngealized vowels, a typologically rare trait in the world's languages (found in only 1,33% of the 451 languages present in UPSID; see Ladefoged and Maddieson, 1996, 306). I was more than surprised: as with what happened in Birir, my first direct contact with the languages of

Lower Fungom was with one of them that possessed a very rare phonological feature of vowel articulation.

None of the other languages of the area has such vowels, nor do the other Ji varieties. However, it is well-known to locals and self-evident for a foreign ear that "when Mundabli stems contain pharyngealized vowels, their Mufu cognates usually end in a velar or glottal stop" (Voll, fortch., § 2.3.2.3): e.g. the word for "banana" is *tsU* in Mundabli and *tʃuk* in Mufu (where Mundabli "*U*" here represents the pharyngealized vowel).

Due to their distinctiveness, pharyngeal vowels are highly distinctive of the Mundabli variety as opposed to the other Ji varieties, let alone the other languages of the area. Like in Birir for the retroflex vowels in distinguishing KalBi from KalRB (see Section 1), also in Mundabli speakers have "discursive consciousness" (Giddens, 1984) or "metapragmatic awareness" (Silverstein, 1981) of the social indexical value of pharyngeal vowels: they distinguish Mundabli from Mufu speakers. Otherwise stated, from a social psychological perspective, one could say that these sounds are salient emblems indexing "Mundabli-ness" of the speaker.

Can this in any way inform our perspective on the retroflex vowels in Kalasha and surrounding languages?

While it is premature to propose anything concrete in this regard and, no doubt, the areal distribution of the rhotic trait in the area (see Section 3) does not allow for straight generalizations, I would nonetheless propose here a historical sociolinguistic perspective on their presence in these languages. It will be evident to the reader that this is a working hypothesis and, probably to some, a provocative one.

I concur with James Milroy (Milroy, 2003, 143) when he says that, "in what might be called the dominant tradition in historical linguistics, it has been assumed that languages change within themselves as part of their nature as languages. The 'external' agency of speaker/listeners and the influence of 'society' in language change have tended to be seen as secondary and, sometimes, as not relevant at all". Lass (1997, 377n.) has aptly captured this dichotomy proposing to recognize "two complementary kinds of historical linguistics: 'structural' and 'psychosocial' ", the former being overwhelmingly privileged over the latter within historical linguistics as a whole. The psycho-social approach aims to identify the extent to which language changes are due to speakers' agency, i.e. more or less conscious efforts interacting with language-internal dynamics. While it is admittedly difficult, if not utterly impossible, to offer a view of the factors that may have co-occurred in order for the Hindu Kush languages to converge (cf. Tikkanen, 2008; Di Carlo, 2011b), it is probably less problematic to start from a high-level distinction following Eckert's (2003, 395) emphasis on the fact that "not all changes are equal".

Although the scholarly debate on this topic has mostly focused on contemporary dynamics – especially on cases in which languages appear to change due to influence of the media (Milroy, 2007; Eckert, 2003; Sayers, 2014) – in my view it points out a fundamental distinction between "off the shelf changes", on the one hand, and "un-

der the counter" changes, on the other (Milroy, 2003, 151-152). What distinguishes the two types of change is the amount of exposure to a given linguistic feature that a certain community (or individual speaker, for that matter) must have in order to include that feature in its linguistic behavior: "off the shelf" changes are those that do not require the continued exposure provided by regular social interaction but, rather, are always accessible due to their prominence in the minds of the speakers.

Of course, there has never been anything comparable to mass media in the history of the communities living in the Hindu Kush area at large. Moreover, regular interactions between communities or individual families of different communities may have clearly reached a degree of intensity (e.g. extent of cross-community intermarriages, cf. e.g. Robertson, 1974, 4) so that they would lend themselves more to the "under the counter" rather than to the "off the shelf" type of change. However, there are features that may gain a certain prominence within the repertoire of forms available to speakers more for their intrinsic qualities rather than for the frequency at which people are exposed to them: I think that retroflex vowels might be a case in point[8].

It is likely that these sounds as well as the retroflex approximants so common in Kati (cf. Section 3.2) were acoustically marked for people, like the Kalasha, who have for centuries occupied a sort of buffer zone between "core Kafiristan" communities to the west (i.e. Kom, Kati, Waigali and, to a certain extent, Prasun, in whose languages retroflex vowels would seem to have been more firmly established) and non-Kafir communities to the east and southeast, especially from the 16TH century onwards when Muslim presence in Chitral became more significant. It is also important to keep in mind that Kalasha were probably subdued (but not converted) during the reign of the Rais dynasty in Chitral, most likely at the end of the 17TH century (see Cacopardo and Cacopardo, 2001, 45-54 on this complex historiographical conundrum). The loss of political independence and the fact that, amongst other things, this also materialized in Kalasha people being often sold into slavery by Rais and Katur rulers (see Cacopardo and Cacopardo, 2001, 59) would seem to offer ground to contextualise Robertson's prejudice for which the "Kalasha Kafirs ... are not the true independent Kafirs of the Hindu-Kush, but an idolatrous tribe of slaves subject to the Mehtar of Chitral" which, for this very reason and compared with the fierce "true" Kafirs, appeared to him as "a most servile and degraded race" (Robertson, 1974, 4).

From this perspective, it seems not too much of a speculation to say that among the post-subjugation Kalasha there might have been ideological pressures towards the display of anything that could resemble the "true" Kafirs (i.e. mainly Kom and Kati): what Klimburg has showed for Kalasha social hierarchies and their symbolization in material culture (Klimburg, 2008) may be a trace of this very process. Kalasha retroflex vowels may be emergences of the same ideology: Kalasha speakers may have been especially receptive in integrating these unusual sounds in their language from a source language like Kati – where retroflex approximants (absent in the spectrograms

reviewed in Figs. 2-6 above) and retroflex vowels dominate (cf. Section 3.2) – so as to emphasize similarity with the "true" Kafirs using an "off the shelf", acoustically prominent feature like that of vowel retroflexion. This does not change anything in the historical reconstructions I attempted in Section 3.2: it only provides them with a *motive* for Kalasha speakers to change their language. But this, as I said at the beginning of this section, is only a working hypothesis and, at most, can hope to become a possible topic for future sociolinguistic and historical sociolinguistic research in the area.

Notes

[1] Kalasha varieties were spoken throughout today's Chitral District until at least the 16TH century AD (see Cacopardo A.M., 1991; 1996; Cacopardo A.S., 1991; 1996; Cacopardo & Cacopardo, 1992; 1996; 2001, 74-76). On the status of Kalasha in Muslim communities see also (Decker, 1992, 96-7 and 111-114). See (Di Carlo, 2010, 6-14) for an overview.

[2] See the note on transcriptions at the end of the present article.

[3] It is self-evident that the identification of a "palatal fricative" (transcribed as {x} in IPA) somewhat conflicts with the graphemes {ř} and {ŕ}. It is more likely that he heard a continuous mood of articulation which we would now define "approximant" but, having analytically rather inadequate tolls for noting it (his notes are from 1929-30), he called it "fricative".

[4] It must be recalled here that Morgenstierne collected most of his data in Rumbur, while he had only little knowledge of the variety spoken in Birir: he was only barely aware that Birir variety "has r̥ in *aŋg'u:r̥yak* finger and [in] other words [where] in R[umbur] -*řyak*" (1973a, 191).

[5] Phoneticians and phonologists will raise their brows at this point as, contrary to descriptive best practices, I will deal with sounds recorded in natural discourse. While the following section will be hardly relevant for a specialist, nonetheless it will be to my knowledge one of the very few works in which Kalasha retroflex vowels are dealt with specifically. I believe this is a promising start of a process of discovery in which it is hoped also other scholars will participate in the near future.

[6] I owe to Prof. E. Bashir (email 6.3.2009) the recommendation to adopt the current definition of this phoneme, and not the traditional one (i.e. retroflex lateral) which was not based on articulatory observations.

[7] It is also interesting to note that during the numerous songs and praise-songs performed throughout the course of the Prun festival of the Birir Valley, which I recorded extensively, no toponyms of Rumbur nor of Bumburet Valleys were mentioned: instead, the place names recalled in those performances referred only to Shishi Kui, Urtsun, Jinjeret, and Kalkatak (cf. Di Carlo, 2007, 88)

[8] The pathways that other unusual sounds like clicks, most likely original to Khoisan languages, followed to be integrated in Southern Bantu languages seem to offer a particularly interesting parallel case (cf. Herbert, 2004).

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Note on the transcriptions

The following Table shows the correspondences between transcription of Kalasha phonemes and phons (the latter are between square brackets), phonological transcription (in italic), and simplified transcription (used for names of people and places). In the phonological transcription, uniformed to usages in (Heegård, 2006), capital letters represent retroflex sounds. In the non-IPA transcriptions (i.e. when letters are not between parentheses of any kind) stress, if any, is signaled by the IPA grapheme " ˈ " preceding the stressed vowel.

Phoneme (IPA)	Kalasha (*italic*)	Simplified transcr.	Phoneme (IPA)	Kalasha (*italic*)	Simplified transcr.
/a/	*a*	a /ʃ/		*sh*	sh
/ã/	*a~*	an	/ʒ/	*zh*	zh
/aɻ/	*A*	(r)a	/ʈ/	*t*	t
/ãɻ/	*A~*	(r)a(n)	/ɖ/	*d*	d
/e/	*e*	e	[ɳ]	*n*	n
/ẽ/	*e~*	en	/r/	*r*	r
/eɻ/	*E*	(r)e	/l/ ([l̪])	*l (L)*	l
/ẽɻ/	*E~*	(r)e(n)	/lʲ/	*ly*	ly
/i/	*i*	i	/ʂ/	*S*	sh
/ĩ/	*i~*	in	/ʐ/	*Z*	zh
/iɻ/	*I*	(r)i	/ʈʂ/	*C*	ch
/o/	*o*	o	/ɖʐ/	*J*	j
/õ/	*o~*	on	/t/	*t*	t
/oɻ/	*O*	(r)o	/d/	*d*	d
/õɻ/	*O~*	(r)o(n)	/n/	*n*	n
/u/	*u*	u	/ɾ/	*r*	r
/ũ/	*u~*	un	/s/	*s*	s
/uɻ/	*U*	(r)u	/z/	*z*	z
/ũɻ/	*U~*	(r)u(n)	/ts/	*ts*	ts
/h/	*h*	h	/dz/	*dz*	(d)z
/k/	*k*	k	/f/	*f*	f
/g/	*g*	g	/p/	*p*	p
[ɣ]	*gh*	gh	/b/	*b*	b
/tʃ/	*c*	ch	/m/	*m*	m
/dʒ/	*j*	j	/w/	*w*	w
[ɲ]	*ny*	ny	/j/	*y*	y (i)