

HISTORICAL SOUND LAWS IN HAUSA AND IN DERA (KANAKURU)

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The proof of genetic relationship does not depend on the demonstration of historical sound laws. Rather, the discovery of sound laws and the reconstruction of linguistic history normally emerge from the careful comparison of languages already presumed to be related. This is especially true in the case of languages whose similarity in lexicon and grammar is such that the fact of relationship is not open to question.

In this paper, I propose to describe historical sound laws in Hausa and in Dera¹, two closely related members of the Platel branch of the Chadic language family.² The sound laws to be described in each case are not shared by the other language and thus constitute relatively recent historical developments (in terms of linguistic time). Working within a shallower time-period, it is possible not only to reconstruct sound laws with greater confidence, but it is also possible to perceive structural and temporal inter-relationships among various developments. In short, sound laws can be seen as dynamic processes rather than as static abbreviations for observed correspondences.

Part I describes the historical development of liquids in Hausa. Part II describes weakening as a historical process in Dera. Though necessarily presented in sequence, the two parts are structurally interrelated since the sound laws occurring in one language must be assumed in order to provide evidence in support of a sound law in the other.

I. HAUSA

*r > y

In Newman and Ma, the change of syllable final *r to y in Hausa was described as a 'less regular [than the change of syllable final stops] but nonetheless recurring change'.³ This change was also noted in intervocalic position but no statement was made regarding its generality. It was assumed at the time, although never explicitly stated, that *r > y had taken place under limited conditions (not yet understood) and that present-day Hausa r⁴ was a normal reflex of the earlier Chadic *r. This assumption now appears unfounded.

¹ Dera is spoken in the Northeast State of Nigeria along the Rivers Hawal and Gongola. The two most important Dera villages are Shani, in Biu Division, and Shellen, in Numan Division. 'Dera' is the peoples' own name for themselves and is much preferred to the more well-known designation 'Kanakuru'.

² I take the Chadic family to consist of two co-ordinate branches: 'Platel' (formerly 'Plateau-Sahel'), which includes Greenberg's subgroups 1, 2, 9, and 7, 8 (?), and 'Biman' (formerly 'Biu-Mandara'), which includes his subgroups 3, 4, 5, 6. (See Newman and Ma, 'Comparative Chadic: phonology and lexicon', *JOURNAL OF AFRICAN LANGUAGES*, vol. v (1966), pp. 218-51, and J. Greenberg, *THE LANGUAGES OF AFRICA* (Bloomington, 1963), p. 46.) Subgroup 1, to which Hausa and Dera belong, contains Ngizim, Bolewa, Tangale, Seiyawa, Angas, and Ron, among others.

³ 'Comparative Chadic...', p. 226.

⁴ In discussions of Hausa the symbol r refers specifically to the flap r, as in *riga* 'gown', and not to the rolled consonant, as in *Rubutu* 'writing', that I am representing by cap R.

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In the first place, recent research has disclosed many additional Chadic cognates in which Hausa *y* corresponds to **r* elsewhere. Secondly, a careful re-examination of the Newman and Ma Chadic word-list shows that all of the items in which non-initial **r* is represented by Hausa *r* are of doubtful validity, either because the likelihood of borrowing is high or because the supporting evidence is inadequate. I suggest therefore that **r* > *y* was a regular sound law affecting ALL intervocalic and syllable final **r*'s.

	Hausa <i>y</i> ⁵	* <i>r</i> ⁶	
bark (of tree)	baawoo	bara	Hona
fish	kiifi	kerwo	B.
foot	sau < *saawuu	sar	Ter.
friend (fem.)	ƙawaa ⁷	shero	D.
to fry	sooy-	zuri	Ter.
grass	ciyaawa	shwari	D.
herding	kiiwoo	ƙeran	D.
knee	gwiiwa	kufurum	Sura
neck	wuya	wura	Ngz.
red earth	kooya	kuri	D.
oil	mai	mor	B.
root	saiwaa	sorom	Maha
to sell/buy	say-	sarap (pl.)	C.
to stop/stand	'say-	yire	D.
		ɗar	Ga'anda

The weakening of a liquid to a semivowel in non-initial position also extended to some **l*'s although this was not a regular, systematic change for that consonant. Considering the closeness of *l* and *r* in Hausa, it is possible that the *l*'s now evidenced by *y* had already altered to *r* before the **r* > *y* change and thus fell under the same rule.

	Hausa <i>y</i>	* <i>l</i>	
to burn	tooy-	tile	D.
edge	geefe < *gaife	galba	D.
egg	ƙwai	wolu	B.
grain (of corn)	ƙwaayaa	yila	D.
smoke	ha-yaaƙii	oloki	B.
to swallow	ha-ɗiy-	ɗeli	D.
two	biyuu	vəl	C.

The proposed sound law **r* > *y* applied only to intervocalic and syllable final **r*. Investigations into the history of initial **r* have disclosed the following facts. (a) Although **r* is one of the most common and best attested Proto-Chadic consonants, it occurs

⁵ Before back vowels, *y* is realized as *w*; in syllable final position, it is represented by *i*. In the examples, long vowels are only marked for the primary language under consideration. They are indicated by double letters. Tone does not enter into the discussion and is not marked. Hausa verbs are presented in root form, without the stem final vowel.

⁶ The more commonly cited languages are abbreviated as follows: B. = Bolewa, C. = Chip, D. = Dera, H. = Hausa, Ngz. = Ngizim, P. = Pero, T. = Tangale, Ter. = Tera.

⁷ The historical origin of Hausa ƙ is still a mystery. The consonant does, however, occur quite commonly in Chadic cognates where it corresponds either to a non-glotalized *k*, or to initial *w/y/ø*. The corresponding ejective 's (orthographic ts) rarely appears in cognate forms.

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initially in only one reconstruction, *r-y- 'bow', which is probably a widespread borrowing rather than a true cognate. (b) In Dera, r normally does not occur in initial position, having been found in only six words out of a vocabulary of 1,000.⁸ In Bolewa and Chip, initial r is also uncommon. (c) Even when Hausa is carefully compared with closely related languages, no cognates can be found which point to the modern Hausa reflex of an earlier initial *r. These facts lead to the hypothesis that r did not occur in initial position in early Hausa, a distributional deficiency it would have inherited from the common Hausa-Dera ancestor. If this is correct, then after the *r > y change, Hausa would have had no r!

PRESENT HAUSA r

The high incidence of r in present-day Hausa is probably due to its having developed from a number of different internal sources plus its presence in a large number of loan-words.⁹ Undoubtedly the most important single source for the new r in all positions was the systematic change of *l > r.¹⁰

	Hausa r	*l	
to accompany	rak-	loi	D.
to break	kary-	kəfə	Ngz.
to chase off	koor-	kəɟə	Margi ¹¹
child	yaaroo	wuli	Kuri
cold	ɗaarii	ɗwal	D.
to cover	ruf-	lipe	D.
dew	raaɓaa	ɟəɓi	Ter.
dust	kuuraa	shelele	D.
to extract	cir-	tole	D.
to forge	keer-	kolom	C.
to lessen	rag-	jili	D. ¹²
to push	tuur-	dəle	D.
small	karamii	kalla	D.
stinginess	roowa	lombon	D.
tongue	ha-rshe	lisi	B.
to wait for	jir-	kəla	Hona
white	farii	popolok	D.

An independent source of present-day intervocalic r was the regular change of *ɗ > r following a long vowel.¹³

⁸ rəha 'bow', ruwo 'liver', romi 'mongoose', rupo 'scabies', rereu 'thunder', rap 'two'.

⁹ For example, fure 'flower', kore 'green', raɗumi 'camel', rai 'life', and perhaps rana 'sun', and ruwa 'water'.

¹⁰ Double l's reinforced each other and did not change, e.g. ɓalle 'to break' cf. Margi ɓəl, and kulle 'to lock' cf. Margi bɗəl. Especially note the following Hausa doublet which illustrates both the functioning of *l > r and its blockage: kulla = kudura 'to knot'.

¹¹ In the Biman branch, the lateral fricative ɟ is the normal reflex of *l in nonfinal position.

¹² This suggested cognate presumes metathesis on the part of Hausa.

¹³ The conditioning environment is evidenced by present-day Hausa only. We cannot be certain that these vowels were phonemically long at the time of *ɗ > r but they must have been distinct from the present short vowels in some way. Vowel length in cognate forms, even where reliably known, throws no light on the issue.

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	Hausa r	*d	
to beat/slap	maar-	mwat	Angas
		wāfi	Ter.
to finish	kaar-	kudə	Margi
to pare	feer-	pede	D.
to sweep	shaar-	jedi	Ter.
tooth	ha-koori	wufo	T.

It should be noted that *d > r was a strictly conditioned sound change and did not affect *d in initial position or following a short vowel.

	Hausa d	*d	
to awaken	faRka	pire	D. ¹⁴
cold	daarii	dwal	D.
four	fudu	fudo	Ngz.
room	daakii	dəhi 'to build'	D.

A third source for r, which I can only suggest as a possibility, may have been the addition of an intrusive or epenthetic syllable final r not present in the original form.

	Hausa r	Ø	
mortar	turmi	tuma	B.
to pound (corn)	surf-	sopa	Ter.
to receive	karɓ-	gəpe	D.
to rip open	ɓark-	ɓyaxi	Ter.

Also note these doublets currently found within Hausa itself.

	Hausa r	Hausa Ø
embers	garwaashi	gawaashi
money	kurɗii	kudii

PRESENT HAUSA l AND R

If we assume that *l > r was a systematic sound law, then *l cannot also be the source for present-day l. The high frequency of l in loanwords in Hausa is strong evidence of the foreign origin of this consonant.¹⁵ This would account for the inability to establish a regular phonological correspondence between Hausa l and any other Chadic consonant. What probably happened was that after *r > y, the one remaining liquid phonetically altered in the direction of [r], occupying a more central position in the available phonological space. At the time of the heavy influx of Arabic loans with l, the single Hausa liquid was sufficiently r-like phonetically as not to be identified with the Arabic l. The quantity of new words with l also must have contributed to their being borrowed with

¹⁴ The pair faRka/pire shows how misleading surface comparisons can be. The correspondence is not between the two r's, but between two d's which have been independently altered in the two languages.

¹⁵ Obviously, not all present-day Hausa words with l are loanwords. Doublets within Hausa indicate the existence of internal sources as well. For example, some l's seem to have developed by the reduction of double l's (which, as will be recalled, did not change to r), e.g. kwaala = kwalla 'to throw to the ground', kaalaa = kalli 'fishing float', faali = falle 'to get tax early by duress'. Other l's possibly represent a secondary non-systematic shift from r, e.g., laɓa = raɓa 'to conceal', laima = rima 'dampness', laushii = raushii 'finesness', lakii = rakii 'overlapping'.

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the original *l* rather than being assimilated. The result was the redevelopment of a two-liquid system, with **l* having switched positions.

Finally, Hausa developed a third liquid *R*, in initial position from loanwords (e.g. *Riba* 'profit', *Rubuta* 'to write', *Rafani* 'maternal uncle'), and internally from the automatic change of syllable final dentals to *R* (e.g. *faRke* < **fatke* 'trader', *faRka* < **fadka* 'to awaken', *aRne* < *azne* 'pagan'). As in the case of borrowed *l*, borrowed *R* was sufficiently distinct phonetically and sufficiently common as to be adopted as a separate phoneme rather than be identified with the pre-existing *r*. The various stages in the development of the present Hausa liquid system can be summarized as follows:

Stage (1). Two liquids **r* and **l*, with **r* distributionally defective.

Stage (2). One liquid due to the complete merger **r* > *ɣ*. The remaining liquid **l* developed phonetic properties intermediate to those of [*r*] and [*l*].

Stage (3). Two liquids due to the borrowing of a contrasting lateral. The older [*r*]-like lateral survived as the Hausa flap *r*. The independent development of *r* < **ɖ* added to the incidence of *r* without affecting the phonemic system.

Stage (4). Three liquids due to the development of *R*.

II. DERA

Historical linguistics has its own third law of thermodynamics, so to speak. Linguists generally operate under the assumption that there is some type of hierarchy among linguistic sounds and that historical sound changes normally proceed downhill. For example, if one speaks of Hausa *r* 'weakening' to *ɣ* or *ɖ* 'weakening' to *r*, one is in effect claiming that these changes are natural and inherently more likely to have taken place than the corresponding changes *ɣ* > *r* and *r* > *ɖ*. Obviously, other historical processes must also be at work for otherwise all the languages of the world would by now consist only of weak sounds. Dera provides a case in point where the effects of massive historical weakening are still very much evident. It is of special interest, moreover, because it also illustrates hardening processes at work, historically, dialectally, and morphologically.

The quantitatively most important weakening rule in Dera was the regular change of intervocalic non-nasal obstruents to corresponding resonants, except in certain specified environments. This general rule had different phonetic outputs in the three different positions of articulation (labial, dental, velar) but the process was the same in all cases and the conditioning environments identical. First I will describe the three manifestations of the rule in turn, after which I will specify the exact intervocalic environments in which the rule did not apply.

**T* > *r*

Intervocalic dental stops—voiceless, voiced and glottalized—historically weakened to *r* and merged with the pre-existing *r*. The result of this four-way merger is an extremely high lexical occurrence in Dera of intervocalic *r*. The examples listed below are thus drawn from a considerably longer cognate list. I have purposely illustrated the sound change by citations from languages closely related to Dera in order to show that the weakening **T* > *r* (like the weakening in the other positions) was a historically recent sound law postdating the differentiation of the Hausa–Dera–Bolewa subgroup.

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	Dera r ¹⁶	*t/d/ɗ	
to die	muri	mutu	H.
to go out	pори	pete	B.
to seize	shaare	kwace < *kwate	H.
sun	pори	fishi	T. ¹⁷
beans	worom	wodo	B.
crocodile	karam	kadam	B.
eye	yero	ido	H.
four	parau	fudu	H.
neck	duri	dido	B.
night	biri	bodi	B.
tooth	wuro	wudo	T.

Running exactly counter to the intervocalic weakening rule has been a change of *r > t in final position.

	Dera t	*r	
he-goat	buhut	bokəra	Ter.
hot	gərgət	gərgər	Ter. ¹⁸
oil	mot	mor	B.

Note that the result of these contradictory rules is a comparative criss-cross, in which intervocalic r in Dera corresponds to t in related languages, while Dera final t is matched elsewhere by r. Interestingly, root-final t's automatically alternate with r when anything follows, whether within the same word or not.

	t, pre #		r, not pre #
he-goat	buhut	he-goats	bukurin
hot	gərgət	not hot	woi gərgər u
oil	mot	this oil	mori me

One possible way to account for the synchronic alternation between final t and non-final r would be to postulate r as the underlying form in all cases and have a late phonetic rule of the form: r > [t]/—#. Final [t] would then have no structural status but rather would simply be an allophone of r. Under such an analysis, the change *r > t would not qualify as a bona fide historical sound law. Alternately, one could treat *r > t as an accomplished historical fact and postulate t as the underlying form in all cases. The internal change of t back to r would then represent a synchronic survival of the general *T > r law. My preference is for the second description since it more adequately takes into account the dynamics involved in diachronic change, but the first is admittedly the simpler way to correctly generate the data in a purely descriptive grammar.

*P > w

As part of the general weakening rule, the labials *p, *b and *ɓ changed to w and merged with the pre-existing semivowel.

¹⁶ In the examples in Part II, vowel length is marked for Dera while orthographic representation without vowel length is used for the other languages including Hausa. For the key to the language abbreviations, see footnote 6 above.

¹⁷ Tangale has undergone its own intervocalic weakening of t > c > sh.

¹⁸ This is probably a loanword, but it illustrates the same point.

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	Dera w	*p/b/ɓ	
fish	shiruwo	kifi	H.
to go	tai < *tawi	tafi	H.
to spit	tuwi	tofa	H.
room	gaawi	gabi	B.
cloud	awe	yeɓe	P.
to mix	duwi	dzaɓə	Margi

Some Dera dialects have since reversed the weakening process and now use ɓ in place of the intervocalic w¹⁹. There is no question but that this is a later secondary shift since the substitution of ɓ for w operates equally on all w's, regardless of their historical origin.

	Dera w/ɓ		
to spit	tuwi = tuɓi	tofa	H.
room	gaawi = gaabi	gabi	B.
cloud	awe = aɓe	yeɓe	P.
fly (n)	diwin = diɓin	juwək	Ngz.

K* > h

The Dera consonant that I am representing by the symbol h is phonetically a voiced velar fricative. Structurally, however, it behaves like a third member of the resonant series w-r-h, having historically developed from intervocalic *K by the same weakening law that affected *P and *T.²⁰ Unlike the changes *P > w and *T > r, where the resulting resonant merged with a pre-existing resonant, *K > h resulted in the development of a new phoneme. The change *K > h must have begun as a subphonemic alternation, h simply being a weak allophonic variant of the k phoneme. The contrast between k and h (and the resultant phonemic split) would have been coincident with a later introduction of intervocalic k's not obeying the weakening rule.²¹

Comparative data documenting the *K > h change are ample although the cognate forms in Dera are somewhat disguised due to further weakening of h to Ø and w.

	Dera h	*K	
to accompany	loi < *lohi	raka	H.
all	dai < *dahi	duka	H.
to cry	kui < *kuhi	kuka	H.
to exceed	tai < *tahi	doke	H.
to put	wui < *wuhi	saka	H.
to beat	duhi [duwi]	duka	H.
blind	buhum [buum]	mbukum	B.
to build	dəhi	daki 'room'	H.

¹⁹ My major Shani informant was a [ɓ] speaker; my major Shellen informant was a [w] speaker. I was not able to ascertain the exact distribution of this variation.

²⁰ The symbol K, like the parallel symbols P and T, is used to indicate that the phonation of the underlying stop has no bearing on the operation of the weakening rule. In fact, only k occurs in the examples of *K > h. Presumably, early Dera had no glottalized velar. The absence of ɓ, on the other hand, is probably accidental.

²¹ For example, intervocalic possessive pronouns weaken as expected while verb suffix pronouns retain hard consonants in comparable phonological environments, e.g. kumo-ro 'her ear', kumo-ho 'your ear', but a təmo-to 'she knelt', kə təmo-ko 'you knelt'.

	Dera h	*K	
to hang	loohe [loohe]	loki	Ter.
he-goat	buhut [buut]	bokəra	Ter.
horse	doohi [doowi]	doki	H.

The missing *h* in the CVV examples above has been postulated on the basis of the comparative evidence itself plus the fact that CVCV is the more common canonical word pattern in the Hausa-Dera-Bolewa group. It is not synchronically recoverable. The interpretation of the forms with [w] as containing an underlying *h*, although first suggested by the comparative data, is based on internal considerations. The underlying forms and their surface realizations are connected by the automatic phonological rule *h* > *w* when immediately preceded or followed by a back vowel. This can be seen in the following alternations.

	h		w
he built (it)	a dəhi	building	đuwo
he sharpened (it)	a ahi	sharpen (imp.)	awu
the okra	garahii	not okra	woi garaw u
he helped you	a aye he	your sister	molo-wo

The distinctiveness of *h* and *w* at a deep level is further supported by the fact that verbs with an underlying *h* govern velar assimilation of a following *ma* suffix while verbs with a phonetically identical *w* do not.

he beat (it)	a duhi [duwi]	he is beating (it)	shi duŋ-ŋai
he hung (it)	a loohe [loohe]	(it is) hung	loŋ-ŋani
he smithed (it)	a guwi	he is smithing (it)	shi gum-mai
he tied (it)	a dowe	(it is) tied	dom-mani

As in the case of the *t/r* alternation described earlier, the weakening **K* > *h* continues to function as a synchronic rule. Because of the secondary *h* > *w* shift, the observed alternation is often between *k* and *w*.

stick	ambak	the stick	ambahii	not a stick	woi ambaw u
okra	garak	the okra	garahii	not okra	woi garaw u
sewing	dadək	the sewing	dadəhii	not sewing	woi daduw u ²²
goose	kuyuk	the goose	kuyuwii ²³	not a goose	woi kuyuw u

Weakening in Dera, both historical and synchronic, is a strictly phonological phenomenon. By contrast, hardening now functions in the language as an overt morphological process in plural formation. In a small subset of nouns, plurality is marked by intervocalic consonant hardening in addition to one of the regular suffixes, while all of the verbs that form plural stems (albeit a small number) undergo consonant hardening.

	singular	plural		
hen	yaawe	yaapiyen	yawi	B.
to shoot	boi < *buwi	bupe	basa	B.
to tie	dowe	dope	damre	H.
goat	kwaara	kwadīn	aku	Ngz.
to go out	pори	pode	fita	H.

²² The assimilation of ə > u before *w* is a late rule that applies after *k* > *h* and *h* > *w*.

²³ Note that *h* > *w* is conditioned by a preceding as well as by a following back vowel. In such as this, *h* will never phonetically appear as such.

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	singular	plural		
he-goat	buhut	bukurin	bokəra	Ter.
hoe (n.)	dihil	dikilin		
shoe	taha	takin	takalmi	H.

Note that the hardening is not a mirror image of the historical weakening and thus does not necessarily result in the reappearance of the historically earlier form. None of the examples illustrating $w > p$ are derived from earlier forms with $*p$, nor does the hardening to f recover an earlier form. The hardening of $h > k$, however, does reverse the historical change and in so doing destroys the nearly complete complementarity of h and k , putting them in direct contrast.

At the very beginning, it was stated that the sound law stop $>$ resonant in intervocalic position did not apply in certain specific environments. These environments are easy to describe but not so easy to explain. That is to say, while I can specify exactly the environments that block the weakening rule, in one case I can offer no reason why such an environment should have that effect. The major (and inexplicable) environment in which intervocalic stops systematically remained stops and did not weaken was preceding e AND following a short vowel.

	stop		resonant
to eat (meat)	ade	cf. to awaken	piri
to sow	kape	cf. to spit	tuwi
to hide	tuke	cf. to beat	duhi
to pick out	dite	cf. to seize	shaare
to knot	wuʃe	cf. to cover	tiiwe
to untie	lake	cf. to hang	loohe

Secondly, the weakening rule did not apply to stops occurring in the middle $Cə$ syllable of trisyllabic words. This is not surprising since weak schwa is so short that the middle consonant can barely be regarded as intervocalic.

to draw lines	titəre	worm	təbərək
bird	yidəyo	to scatter (seeds)	wushəle
to tumble	jupəle	large calabash	gwakərak

*S $>$ y

Perhaps the most remarkable manifestation of the weakening tendency that has characterized historical developments in Dera phonology was the change of the sibilants $*s$ and $*z$ to y .²⁴ Unlike the general stop $>$ resonant sound law, which was a conditioned sound change, the historical change of $*S$ to y operated ruthlessly in all phonological environments, initial as well as intervocalic, before front vowels as well as before back vowels.²⁵ The change resulted in the total loss of two phonemes (s and z) and left Dera as a language completely without a fricative.

²⁴ Under S , I naturally include the palatalized variants sh and zh .

²⁵ One notable exception, for which I can offer no explanation, is the Dera third person masculine pronoun shi , presumably derived from $na *s-$.

	Dera y ²⁶	*S	
to arrive at	ya	isa	H.
bone	ween < *wuyen	řashi	H.
excrement	kuyuk ²⁷	kashi	H.
foot	yo	sau	H.
friend	maawo	məzep	C.
		mətəpi	Margi
to fry	wuri	soya	H. ²⁸
melon	yanggu	sənji	Ngamo
name	yim	sum	Maha
to put	wui < *wuhi	saka	H.
to rub	wumi	shafa	H.
to shoot	bui < *buwi	basa	B.
spear	gai	ɲgus	Ngz.
they	wəni	sun	H. ²⁹
thirst	kiyim	řishi	H.
		kushəm	P.
tongue	yilik	lisi	B.
body	yik	ziwo	B.
laughter	wuru	zuru	D.
rope	woori	zori	B.
to wet	yeke	jiřa	H.
wind	yiwet	zuwək	Ngz.
yesterday	wono	nzono	B.

It would be tempting to treat *S > y as a palatal variant of the general obstruent > resonant rule, thus completing the series *P-T-S-K > w-r-y-h. The two rules cannot be collapsed into one, but rather must be regarded as distinct historical events for the following reasons: (1) *S > y occurs in all environments, not just in intervocalic position; (2) more significantly, the unusual *S > y shift, but not the stop > resonant shift, also took place in a sister language, Tangale. From this latter fact, we can deduce furthermore that *S > y was the older sound law, pre-dating the differentiation of the Dera-Tangale ancestor into the present-day languages. Surprisingly, Pero,³⁰ a language more closely related to Tangale than either is to Dera, did not undergo the *S > y shift!

²⁶ y is sometimes realized as w, usually in the environment of a back vowel, cf. Hausa sawo 'to buy and bring' < saya 'to buy', alongside the now more common sayo.

²⁷ The final k is a non-productive 'body part' suffix, cf. bok 'mouth', ləshik 'vomit', mələk 'scar', yik 'body', yilik 'tongue', yilek 'saliva'. This suffix survives in Hausa only in the words baki 'mouth' and jiki 'body'.

²⁸ This is a lovely example of the importance of phonological correspondences rather than mere phonetic similarity in establishing cognates. Although the two words are dissimilar on the surface, they can both be shown to derive from *s-r- by regular sound laws.

²⁹ I consider the nasals to be integral parts of the pronoun root and not tense markers or some such.

³⁰ Pero is spoken some 25 miles to the west of the Tangale area. The close relationship between the two languages is clearly evident even on the most casual inspection.

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	Dera/Tangale y		Pero/other $*S$	
body	yik	T.	shik	P.
	yik	D.	ziwo	B.
to drink	ye-k	T.	sho	P.
			sha	H.
hair	wok	T.	shoko	P.
	wakai	D.		
hunger/thirst	kuum	T.	kushəm	P.
	kiyim	D.	kishi	H.
laughter	wuro	T.	zuru	B.
	wuru	D.		
leg	yo	T.	sho	P.
	yo	D.	sawu	H.
to roast	kawe	T.	gasa	H.
root	yara	T.	saiwa	H.
sand	wuyaka	T.	wishiy	P.
			yashi	H.
thorn	ariyo	D.	alisho	P.
yesterday	wono	T.	shono	P.
	wono	D.	nzono	B.

Given the structure of the usual family-tree diagram and the fact that $*S > y$ did not take place in Pero, we are forced to choose between two equally unattractive analyses. We must conclude either that Dera and Tangale historically formed a subgroup as opposed to Pero, or else that the change $*S > y$ was not a feature of the ancestor language but rather occurred independently in Dera and in Tangale (see Figs. 1a, b).

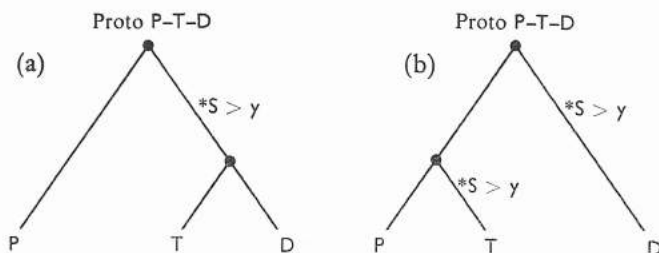


Fig 1

If, on the other hand, we conceptualize a proto-language as a speech community with a spatial dimension (rather than as a spaceless dot) then we can account for the fact that an innovation might date from the period of a common ancestor yet not be found in all the present-day descendants. I suggest that $*S > y$ did indeed occur during Proto P-T-D times but that it affected only the eastern parts of what must have been a scattered, loosely jointed speech community. Subsequently, Dera (which fell within the $*S > y$ zone) split off while Tangale (which also fell within the $*S > y$ zone) and Pero (which did not) continued as a single speech community until some later date (see Fig. 2).

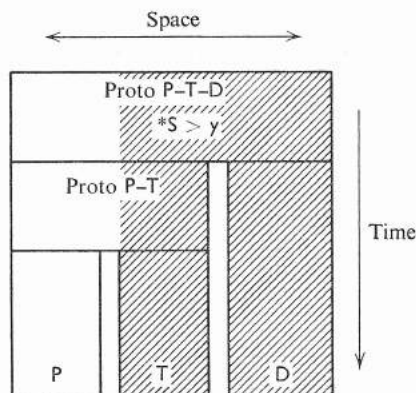


Fig 2

c > sh

After the operation of $*S > y$, Dera was left without any sibilants. The reappearance of the sibilant sh resulted from the phonetic shift of c in the direction of the empty phonological space. In many cases, sh now corresponds comparatively to t or k, these consonants having previously palatalized to c on a non-systematic basis.

	Dera sh	c/k/t	
fish	shiruwo	kifi	H.
grass	shwari	ciyawa	H.
to pound	dushe	daka	H.
pronoun 2 f (you)	shi	ki	H.
pronoun 3 f (she)	she	ta	H.
to remember	sheni	tuna	H.
to seize	shaare	kwace	H.
to steal	shiri	kura	Ngz.

It should be pointed out that the change c > sh was strictly phonetic in nature and (as yet) of no structural import, involving neither a split nor a merger. The present Dera consonant inventory is identical to that before the sound change, sh simply occupying the c slot in the stop series p-t-sh-k, b-d-j-g.

SUMMARY

In this paper, historical sound laws are described for Hausa and Dera, two closely related languages of the Platel branch of the Chadic language family. The present Hausa inventory of three liquids is shown to have resulted from the loss of original $*r$, the development of modern r from $*l$ and $*d$, and the addition of l and R from external sources. The Dera changes $*T > r$, $*P > w$, and $*K > h$ are shown to be manifestations of a single stop > resonant rule. Only in the case of $*K > h$ did a new phoneme result. The law $*S > y$, which resulted in the disappearance of all Dera sibilants, is shown to have pre-dated the stop > resonant rule, having occurred in Proto Dera-Tangale-Pero times. Finally, the recent development of sh < c is shown to be strictly phonetic in nature and of no systematic import.³¹

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