

Hausa Final Vowel Shortening: Phrasal Allomorphy or Inflectional Category?

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1. Introduction

In this paper, I will address the phenomenon of final vowel shortening (FVS) in Hausa¹. Based on detailed morphological evidence, I shall argue that FVS is but one exponent of a systematic morphosyntactic distinction in the language. Given the systematicity of the distinction together with the diversity of exponence, I shall conclude that a treatment in terms of inflectional morphology is to be preferred over Hayes (1990)'s analysis as Precompiled Phrasal Phonology (PPP). The morphological view will furthermore enable us to connect the Hausa data to a typologically well-established inflectional category, namely marking of the mode of argument realisation, a perspective that will deepen our understanding of Hausa syntax and morphology.

The paper is organised as follows: after a brief introduction to the basic pattern and a discussion of Hayes' account in terms of phrasal allomorphy, I shall present additional data to the extent that FVS cannot be singled out as an isolated allomorphic process. Rather, we shall see that vowel length alternation is subject to close interaction with Hausa stem morphology. Moreover, under a broader empirical perspective, the twofold length distinction will turn out to be only one of many patterns in which an underlyingly tripartite distinction is morphologically neutralised.

Next, I shall submit Hayes's surface-oriented adjacency requirement – a necessary criterion for precompiled phonologies – to some further scrutiny and show that Hausa provides a body of evidence against such a surface-oriented view, supporting instead an analysis in terms of argument structure and lexicalised traceless extraction. In section 4, I shall connect Hausa to strikingly similar phenomena in Chamorro and French, all displaying morphological sensitivity to extraction contexts (Bouma *et al.*, 2001). Furthermore, we shall see that Hausa already provides independent evidence for its membership in the typological class of extraction-marking languages.

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¹ Hausa is a Chadic language spoken by some 30 million speakers in Northern Nigeria and bordering areas of Niger. Hausa is a tone language, featuring 3 distinct surface tones: H, L, HL (=falling). Throughout this paper I will only mark L, using a grave accent, and falling tone, indicated by a circumflex. All syllables not marked with any diacritic are high. Vowel length, which is also distinctive, is marked by means of a colon.

The data in sections 2 and 3 of this paper are almost entirely taken from Newman's reference grammar of Hausa (Newman 2000), with glosses added by me. The Hausa data in section 4 are mainly reproduced from Davis (1986).

1.1 Hausa Final Vowel Shortening (FVS): The Basic Pattern

It is a well-known fact about Hausa that verb forms in certain lexical classes (traditionally called grades; see Parsons, 1960; Newman, 2000) undergo shortening of the final vowel, when followed by a full NP direct object: “A verb-final long vowel is shortened immediately before an object NP” (Hayes 1990: 87).

- (1) a. Na: ka:mà ki:fi:
1.S.CMPL.ABS catch fish
‘I caught fish’
- b. Na: ka:mà:
1.S.CMPL.ABS catch
‘I caught’
- c. Na: ka:mà: shi.
1.S.CMPL.ABS catch him
‘I caught it’
- d. Na: ka:mà: wà Mu:sa: ki:fi:
1.S.CMPL.ABS catch for Musa fish
‘I caught fish for Musa’
- e. ki:fɪn dà na ka:mà:
fish.DEF COMP 1.S.CMPL.ABS catch
‘The fish I caught’

The data in (1) illustrate the basic pattern with the regular grade 1 verb *ka:mà(:)* ‘to catch’: if the direct object NP is right-adjacent to the verb, as in (1a), the verb’s final vowel is short. If the direct object is unexpressed (1b) or realised as a pronominal clitic (or affix²) (1c), no shortening can be observed. The same holds, if an indirect object intervenes (1d), or if the direct object is extracted (1e).

In spite of the apparent sensitivity to phrase-structural context, Hayes (1990), however, argues that the rule of Final Vowel Shortening must apply in the lexicon, since it interacts with other lexical-phonological rules of the language, such as low-tone raising (Leben 1971).³ Low Tone Raising applies to heavy final syllables, realising an

² Although it is clearly beyond the scope of this article to engage into a full-fledged discussion of the clitic vs. affix status of Hausa direct object pronominals, there is, however, initial evidence in favour of an affixal analysis: first, they show a high degree of selection towards their host (Zwicky & Pullum 1983’s Criterion A), nothing can intervene between a direct object pronominal and its host, not even modal particles (Newman 2000:331), nor can they get fronted. Furthermore, these elements are segmentally and tonally weak, consisting of a single light (CV) syllable to which a polar tone is assigned. Choice of tone, however, does not depend on the preceding surface tone, but on the underlying tone, as detailed in the discussion of Low Tone Raising below. For the sake of this article, I conclude that an analysis of direct object pronominals as inflectional affixes is defensible on empirical grounds.

³ Besides word-boundedness, the main reason for regarding Low Tone Raising as a lexical rule is the existence of lexical exceptions. On the basis of these exceptions, Newman (2000:241f) even contests the status of Low Tone Raising as a productive synchronic rule of Hausa. See Newman & Jaggard (1989a,b); Schuh (1989) for detailed discussion.

underlying L as H, if preceded by another L. FVS can bleed Low Tone Raising, as witnessed by the following trisyllabic grade 1 verb:

- (2) a. Na: karànta:
1.S.CMPL.ABS read
'I read.'
- b. Na: karànta: littafi
1.S.CMPL.ABS read book
'I read the book.'
- c. Na: karànta: shi.
1.S.CMPL.ABS read it
'I read it.'

Besides interaction with other lexical-phonological rules, the shape of the pre-NP direct object form (or C-form) is not always fully predictable: some verbs, e.g., *gani*: 'see' or *bari*: 'leave', feature idiosyncratic C-forms, viz. *ga* or *bar*, respectively.

With a large number of stems, i.e. those in grade 2, shortening is accompanied by segmental change of the final vowel, which is *-i* in the C-form, *-e*: in the B-form, preceding pronominal direct objects, and *-a*: elsewhere (A-form).

- (3) a. Na: sàya:
1.S.CMPL.ABS buy
'I bought.'
- b. Na: sàye: shi
1.S.CMPL.ABS buy him
'I bought it.'
- c. Na: sàyi àbinci
1.S.CMPL.ABS buy food
'I bought food.'

Finally, in grade 2 one can find a few irregular A-forms (Newman 2000: 637), characterised by an exceptional tonal pattern (H-L instead of L-H) and/or segmental changes, e.g. *dî:bà*: (A), *dê:be*: (B), *dê:bi* (C) 'dip out, take'.

1.2 Precompiled Phrasal Phonology (PPP; Hayes 1990)

In order to reconcile the apparent sensitivity of the FVS phonological rule to phrase-structural contexts with basic tenets of both Prosodic Hierarchy Theory (Selkirk 1986; Nespor & Vogel 1982, 1986; Hayes 1989) and the *Principle of Phonology-free Syntax* (Pullum & Zwicky 1988), he suggests to preserve the restrictiveness of the indirect approach to phonology-syntax interaction offered by the theory of prosodic domains and complement it with what he calls Precompilation Theory (or Precompiled Phrasal Phonology; PPP), a kind of "phrasal allomorphy" (Hayes 1989: 92) reminiscent of Zwicky (1985)'s *Shape Conditions*.

He suggests that alternations such as Hausa FVS are allomorphic in nature, and should be derived in the lexicon. Sensitivity to syntactic context, however, is captured by means of “phonological instantiation frames”: in essence, the allomorphic variant is diacritically marked for a specific insertion context, and selection of a particular allomorph is handled by lexical insertion, subject to the Elsewhere Condition (Anderson, 1969; Kiparsky, 1973).

- (4) *Hausa shortening*:
 $V: \rightarrow V / [\dots _]_{[FrameI]}$
- (5) *Frame I*:
 $/ [_{VP} _ NP \dots]$
- (6) *Hausa raising*:
 $a \rightarrow i / [\dots _]_{[GradeII \& FrameI]}$

In the concrete case at hand, a (lexical) shortening rule (4) derives the C-form allomorph and diacritically annotates it with a reference to a particular phonological instantiation frame, as given in (5) above. Other morphophonological rules can make reference to this insertion frame as well, e.g., the grade 2 vowel raising rule in (6).

It should be clear from this very brief description that rules of allomorphy, under this approach, can make wild reference to heterogeneous types of information, namely morphological class, phonological shape and surface-syntactic and phrase-phonological environment. Furthermore, reference to surface context does not appear to be constrained by structural configurations, such as functor-argument relations, or even tree locality.

Although I have no reason to doubt, at least at this point, that Hayes’s proposal can successfully account for the empirical patterns encountered so far, there are nevertheless theoretical and methodological issues lurking here encouraging us to explore an alternative perspective on the data: first, the instantiation frames invoked by Hayes resemble very much the subcategorisation frames of Aspects-style lexical entries. However, as we have seen above, FVS only applies in the context of direct objects *in situ*. We are thus forced to assume that these instantiation frames are not meant to be reducible to ordinary subcategorisation. Under this perspective, we are confronted with a massive duplication problem: why should a language invoke two distinct, though strikingly similar, systems of subcategorisation? Moreover, if phonological instantiation frames are considered a mode of subcategorisation in its own right, PPP blurs the distinction between lexical and prosodic phonology, in that morphophonological idiosyncrasies, which were hitherto considered unambiguous evidence in favour of lexical status, do now receive an alternative interpretation as instances of PPP, a possibility that has already been exploited by Vigário (1999) to discuss away some of the evidence pointing towards a morphological analysis of European Portuguese clitics (see Crysmann, 2003 and Luís & Spencer, to appear for a detailed criticism). As a net effect, the scope of Zwicky & Pullum (1983)’s Criterion C will be severely limited.

There is, however, a theoretically less harmful interpretation of Hayes’s proposal, namely to assume that morphophonological alternations can (only) make reference to lexicalised syntactic context. Under this perspective, PPP will be reducible to standard notions of subcategorisation in lexicalist theories of syntax, e.g., HPSG or

LFG, essentially regarding phonological alternations as an exponent of morphosyntactic distinctions, or, in other words, as exponents of an inflectional category. It is of note that Selkirk has once proposed, in response to Hayes's proposal, to analyse all instances of precompiled phonologies as inflection (Hayes 1990: 106). I will argue, in the subsequent sections, that an interpretation along these lines will not only provide a theoretically cleaner solution to the paradox, but that it will also provide for a better understanding of Hausa morphosyntax, both language-internally and in a broader cross-linguistic, typological context.

2. Hausa FVS: Extending the Empirical Base

2.1 Neutral Paradigms

The perspective on Hausa FVS assumed by Hayes is essentially that of a syntactically conditioned allomorphy, described by means of a phonological rule, i.e. as a fossilised or lexicalised version of a phrase-phonological rule. This characterisation of precompiled phonology appears to me somewhat instrumental for setting apart this new device from standard notions of inflectional morphology, placing PPP halfway between true phrasal phonology and morphology. Yet, on closer inspection, this picture of a phonologically determined allomorphy seems to obscure the fact how tightly FVS is integrated with the morphological paradigms of the language.

A first piece of evidence pointing in this direction is the fact that entire classes of verbs are exempt from the application of the shortening rule. Among the 7 Hausa grades, "grade 6 is [...] very productive and commonly used" (Newman 2000: 663) indicating orientation towards the speaker. Also phonologically, verbs in this grade are highly regular, characterised by all H syllables and a final long theme vowel *-o:*.

Given Hayes's shortening rule, one would expect a short final vowel in the C-form. Yet, despite the fact that grade-6 verbs do match the structural description of the rule, the contrast is fully neutralised.

- (7)
- | | | | |
|----|--------------------|--------|--------|
| a. | ya: | sa:to: | |
| | 3.S.M.CMPL.ABS | steal | |
| | 'He stole (it)' | | |
| b. | ya: | sa:to: | shì |
| | 3.S.M.CMPL.ABS | steal | him |
| | 'He stole it' | | |
| c. | ya: | sa:to: | mo:tà: |
| | 3.S.M.CMPL.ABS | steal | car |
| | 'He stole the car' | | |

Newman (2000: 662) mentions that in Western Hausa dialects, some speakers tend to shorten the final vowel in the C-form. He adds, though, that this should be regarded as an innovation by analogy with grades 1, 2, and 4. Moreover, even for these speakers, shortening appears to be subject to an additional phonological restrictions,

namely the weight of the penultimate, a restriction that is not operative in any other grade.

- (8) a. ya: karanto là:ba:rì:
 3.S.M.CMPL.ABS read news
 ‘He read the news’
- b. sun harbo za:kì:
 3.P.CMPL.ABS shot lion
 ‘They shot a lion’
- c. mun baro: yâ:ra: à gida:
 1.P.CMPL.ABS leave children at house
 ‘We left the children at home’

If Newman’s interpretation is correct, we have good reason to question a phrase-phonological rule as the historical basis of current FVS.

Apart from grade 6, there is another set of verbs which fails to undergo FVS, all characterised by the subregular pattern *CiCa:*. Although verbs like *kiraa* ‘call’ and *jiraa* ‘wait’ are pretty similar to grade 1 and grade 2 verbs, as far as the segmental level is concerned, still no shortening applies.

- (9) ya: kira: mùtûm
 3.S.M.CMPL.ABS call man
 ‘He called the man’

Although I concur with Hayes in adopting the lexicon as the locus of rule application, I take the tight integration of this phenomenon with Hausa stem classes as an indicator of the morphological status of the alternation.

2.2 Tripartite Paradigms

We have already mentioned in passing that shortening is not the only device by which Hausa C-forms are marked: in grade 2 shortening is accompanied by vowel change. Moreover, unlike grade 1, not only the C-form is set apart, but rather three different situations are morphologically distinguished. Traditionally, Hausaists adopt (at least) a three-fold system to describe the verb forms in all Hausa grades. Under this perspective, the identity of A and B-forms in grade 1 can be regarded as another instance of neutralisation.

- (10) a. Na: sàya:
 1.S.CMPL.ABS buy
 ‘I bought’
- b. Na: sàyi àbinci
 1.S.CMPL.ABS buy food
 ‘I bought food’

- c. sàyi!
 buy.IMP
 ‘Buy!’
- d. sàyi àbinci!
 buy.IMP food
 ‘Buy food!’

Further evidence in favour of an essentially tripartite morphological system comes from grade 2 imperatives: here, the A-form of grade 2 verbs is identical to the C-form, displaying a short final *-i*. Selection of the C-form in the A-form context is probably best understood as a rule of referral, since identity does not only involve selection of the final vowel, but also selection of stem form.

- (11) a. ya: dí:bà:
 3.S.M.CMPL.ABS dip.out
 ‘He dipped (it) out’
- b. dè:bi!
 dip.out.IMP
 ‘Dip out!’

Taking together the evidence from grades 1, 2 and 6, we can conclude that what we find in Hausa is essentially a tri-partite system of morphological marking that displays different patterns of neutralisation (or syncretism): A-B-C (grade 6), A-B vs. C (grade 1), A-C vs. B (grade 2 imperative)⁴, and A vs. B vs. C (grade 2 “indicative”). The syncretism that can be observed between the A- and C-form cells in the grade 2 imperative yet again underlines the tight integration of vowel shortening with the overall morphological system: with bisyllabic grade 2 A-forms, the rule of referral constitutes the sole exponent of the morphological category imperative, as the typical L-initial tonal pattern of imperatives is effectively masked in this grade.

2.3 *Verbal Nouns (Gerunds)*

Verbal inflectional categories like tense and aspect are signalled by means of discrete markers, which are often fused with exponents of subject agreement. Typically these TAM markers select a verb in its base form. Exceptional in this respect are the continuative markers (absolute/relative/negative), where a gerundive form of the verb is chosen (see Tuller, 1986 and Davis, 1993 for detailed discussion of the syntactic properties of verbal nouns). These verbal nouns (VNs) come in essentially two forms: a regular, or weak VN, and a strong form, which morphologically behaves more or less like a noun.

In this section, I will show that the object-sensitive alternation found with verbs carries over to non-verbal categories as well, and that, in sum, these alternations, despite

⁴ As pointed out to me by Joe McIntyre (p.c.), irregular monosyllabic verbs of the Ci type also display neutralisation between A and C forms, e.g. *fí* ‘exceed’, *ci* ‘eat’, and *ji* ‘hear’.

clear difference in exponence, are far too pervasive to be regarded as a mere instance of allomorphy, at least not without missing a central property of Hausa morphology.

2.3.1 *Weak Verbal Nouns*

Verb in grades 1, 4, 5, 6 and 7 typically choose the regular weak VN as their gerundive form (see Newman 2000: ch. 77), although some verbs in these grades also possess (alternate) strong form VNs (e.g. *dinkà*: ‘sow’ – *dinkì*: ‘sowing (m)’).

Weak VNs in the A-form are derived by suffixation of -`*wa*:. In all other forms, the weak VN is identical to the corresponding form of the base verb.

(12)

grade	form	A	B	C	D/E
1	V	<i>karànta</i> :	karànta: shi	karàntà	karànta: wà/masà
	VN	<i>karàntà:wa</i> :	karànta: shi	karàntà rufè	karànta: wà/masà
4	V	<i>rufè</i> :	rufè: shi		rufè: wà/masà
	VN	<i>rufè:wa</i> :	rufè: shi	rufè	rufè: wà/masà
6	V	<i>ka:wo</i> :	ka:wo: shi	ka:wo:	ka:wo: wà/masà
	VN	<i>ka:wô:wa</i> :	ka:wo: shi	ka:wo:	ka:wo: wà/masà

Four things are worth noticing here: first, in the context of neutralisations within a basically tri-partite system, these data provide the missing type of neutralisation (A vs. B-C).

Second, and most importantly, overt marking of this deverbal form singles out the A-form. In contrast to the picture drawn by Hayes, where forms other than the C-form were regarded as default realisations, governed by the Elsewhere Condition, the above data appear to support the view that the A-form actually forms a natural class, comprising intransitives, suppressed direct objects, and non-locally realised direct objects.

- (13) a. *yanà*: *karàntà:wa*:
 3.S.M.CONT.ABS reading
 ‘he is reading’
- b. *litta:fin* *dà* *yakè*: *karàntà:wa*:
 book.DEF.M that 3.S.M.CONT.REL reading
 ‘the book he is reading’

Under Hayes’s account, which is confined to strict adjacency, the identical morphological marking in (13) must appear as purely accidental. Under a slightly different angle, we might as well take the non-locality of the relation as an indicator of this form’s inflectional status, following essentially the characterisation given in Hayes (1990: 106). There is, however, a way to save a Hayes-style precompilation account in the light of these data: if we assume that zero derivation or a rule of referral, rather than suffixation constitutes the more specific case, the marking patterns of weak VNs might be assimilated to that of grade 1 base verbs. Although technically surely viable, such a solution would stand in sharp contradiction to what is standardly assumed as a working principle of human language, namely that zero derivation is *the* default option in the

absence of any more specific marking, cf., e.g., Stump’s *Identity Function Default* (Stump 1993, 2001).⁵ Furthermore, such a solution would be highly uneconomical, owing to the fact that zero marking would involve three clearly distinct instantiation frames: unlike vowel shortening with base verbs, derivation of weak VNs treats the case of intervening indirect objects differently from other A-form environments, thereby strengthening the view of the A-form as a distinct class, not reducible to surface configurations.

Finally, the fact that marking of A-forms can even be attested for deverbal forms in grades that otherwise neutralise the distinction, should be taken as strong evidence both for the centrality of such an inflectional distinction and for the status of the A-form as a natural inflectional class.

2.3.2 *Strong Verbal Nouns*

Verbs in grade 2 and 3 typically use a subregular or irregular strong VN in the continuative. Newman (2000: ch. 77) subdivides strong VNs into two broader classes: regular stem-derived VNs, which are identical to the A-form in grade 2 and which are assigned mostly feminine gender, and base-derived VNs, which display a greater variation w.r.t. shape. Many grade-2 verbs, as well as verbs from other grades have an alternate base-derived VN, alongside the stem-derived or weak form. In a few cases, the irregular form has completely replaced the regular one. Although the forms of strong VNs, in particular base-derived ones, are morphologically quite heterogeneous, they all obligatorily take the “linker” *-n/-r* in the B and C-forms, thereby behaving essentially like nouns: within the NP, the head noun is suffixed with the linker preceding a pronominal or full NP complement. Choice of the linker depends on the inherent gender of the head noun or VN, i.e. *-n* for masculine and *-r* for feminine.

- (14) a. ta: kàrbi kuđi:
 3.F.S.CMPL.ABS receive money
 ‘She received money’
- b. ta: kàrbe: shi
 3.F.S.CMPL.ABS receive him
 ‘She received it’
- c. abîn dà ta kàrba:
 thing that 3.F.S.CMPL.ABS receive
 ‘The thing she received’
- (15) a. tanà: kàrban kuđi:
 3.F.S.CONT.ABS receive.M money
 ‘She is receiving money’

⁵ Even if we did not accept this argument – because the *Identity Function Default* might not be applicable to linguistic areas outside morphology –, a precompilation account will be equally hard pressed to explain that both B and C-forms invoke zero derivation, given that the syntactic environments in which these forms can surface are quite distinct: as argued in footnote 2, direct object pronominals display a good deal of properties that make them qualify as pronominal affixes. As a consequence, it will turn out to be difficult to provide a unified phonological instantiation frame for these forms.

- b. tanà: kàráansà
 3.F.S.CONT.ABS receive.M.POSS.M
 ‘She is receiving it.’
- c. abîn dà takè: kàrfa:
 thing.DEF.M that 3.F.S.CONT.REL receive
 ‘The thing she is receiving’
- (16) a. ta: karàntà litta:fin Audù
 3.S.F.CMPL.ABS read book.M Audu
 ‘She read Audu’s book’
- b. ta: karàntà litta:finsà
 3.S.F.CMPL.ABS read book.M.POSS.M
 ‘She read his book’
- c. Audù ne: ta karàntà litta:finsà
 Audu 3.S.F.CMPL.ABS read book.M.POSS.M
 ‘It’s Audu she read a book of’
- d. ta: karàntà litta:fi:
 3.S.F.CMPL.ABS read book
 ‘She read a book’

Several things are important here: first, despite the difference in major morphological class, the distribution of the A-form of strong VNs is identical, in all relevant aspects, to that of ordinary verbs. Second, we again find neutralisation, this time affecting frames B and C on the one side, and A, D, and E on the other. Thus, the contrast between A and C form that is so characteristic of FVS, is present here as well, although exponence is radically different. Third, under the broader perspective of a basically tripartite system for marking argument realisation, Hayes (1990)’s claim that X’-categories are treated differently cannot be maintained: while this may be true, if we regard FVS as an isolated phonological process, we have established in the preceding sections that this view has a very limited explanatory potential, already failing to account for the full range of variation and neutralisation within the verbal paradigms. As illustrated by the data in (14–16), marking of argument realisation not only generalises from verbs to verbal nouns (15), but also to ordinary common nouns like *litta:fi*: ‘book’ (16). Within proper NPs, not all environments for the A-form are attested, owing to the fact that extraction out of NPs is independently ruled out in Hausa. Instead, a resumptive (affixal) pronoun must be used. Still, in intransitive contexts, the partitioning is exactly parallel to that of VNs. With verbal nouns, where this island effect is not operative, A-frame environments are exactly those found with true verbs.

Summary

In this section, I have argued that Hausa FVS is but one exponent of a much more fundamental morphological distinction drawn in the language. To my mind, the alternation is far too pervasive to warrant an analysis in terms of (subregular)

allomorphy, at least not without missing an important property of the language. In particular, it affects the two major open class categories of Hausa, namely verbs and nouns in a similar way. Furthermore, we have seen that opposition w.r.t. vowel length, which is regarded as quite fundamental in Hayes's account, is but one way an at least threefold morphological distinction is neutralised, depending on a specific morphological class. Finally, we have established, mostly on the basis of the marking of weak VNs, that the A-form must be considered a natural morphological class in Hausa, ranging over intransitives as well transitives with unexpressed or non-locally realised direct objects. On the basis of the striking similarity of the distinctions involved, together with the degree of variation found in the set of exponents, I conclude that we are dealing here with an inflectional category.

3. Adjacency

In the preceding section, I have restricted myself to a discussion of the morphological aspects of Hausa FVS and related phenomena. The proposal to regard FVS as an instance of PPP, however, was mainly motivated by an apparent surface-syntactic constraint on the alternation. In order to maintain an essentially morphological analysis of the data, it is crucial, though, to determine what exactly the morphosyntactic property is that is morphologically expressed. Consequently, I will subject the syntactic environments of the alternation to some further scrutiny, showing that (a) the apparently surface-syntactic conditioning is but an artefact of canonical Hausa word order, and (b) that exceptions to a purely surface-oriented constraint can be found which point towards argument structure as the proper representation to formulate the contextual restrictions.

3.1 *Intervention*

3.1.1 *Indirect Objects*

One of the main pieces of evidence to motivate the surface-syntactic conditioning of FVS are the intervention data found in ditransitives (Hayes 1990: 93):

- (17) Na: ka:mà: wà Mu:sa: ki:fi:
1.S.CMPL.ABS catch for Musa fish
'I caught fish for Musa'

Here, shortening does not apply, even though *ka:ma:* does take a direct object complement (*ki:fi:*), realised in the local clause. At first blush, it appears that it is not transitivity *per se* that matters but surface adjacency of an NP complement.

However, a property of Hausa not taken into account by Hayes (1990) is the very strict word order in this language. As detailed by Newman (2000: ch. 39) (but cf. any learner's grammar of Hausa, e.g., Cowan & Schuh 1976) the canonical position of the indirect object, be it pronominal or not, is directly after the verb. Nothing save a few very light modal particles can intervene between the verb and the direct object marker *-wà*. Direct objects, in particular, canonically follow the indirect object. If, for reasons

of prosodic weight, an indirect object must be shifted to the right, it has to be expressed by means of a prepositional phrase *gà*⁶:

- (18) a. ya: fadā: wà mutànhèn làba:ri:
 3.S.M.CMPL.ABS tell men.DEF news
 ‘He told the men the news.’
- b. ya: fadí làba:ri: gà mutànhèn dà
 3.S.M.CMPL.ABS tell news to men.DEF that
 sukè: goyon ba:yansà
 3.P.CONT.REL supporting him
 ‘He told then the news to the men who were supporting him’

In this respect, basic Hausa ditransitives are quite similar to dative shift in English, where the indirect before direct object order is equally strict.

If we assume that word order in languages such as Hausa and English is determined by an obliqueness hierarchy on the argument structure of the verb (Pollard & Sag 1987), right dislocation of the indirect object will necessarily involve demotion to an oblique PP argument. Under this perspective, non-application of FVS with ditransitives can readily be accounted for at the level of argument structure, without any reference to surface adjacency.

In this context, it is of note that in the Kano dialect, the stranded IO marker *-wà* is lengthened whenever the IO itself is extracted. Newman (2000: 277) offers a potential explanation to the extent that speakers of this variety have reanalysed the almost inseparable IO marker as a verbal clitic (or rather affix [BC]).

- (19) Standard Hausa
- a. shi: nè: mùtumìn dà ya gayà: wà
 he COP man that 3.S.M.CMPL.REL tell IOM
 ‘He is the man I told it to’
- b. wà: ka ji: wà ciwo:
 who 2.S.M.CMPL.REL feel IOM injury
 ‘Whom did you injure?’
- c. ya ji: wà ya:rò: ciwo:
 3.S.M.CMPL.REL feel IOM boy injury
 ‘He injured the boy’
- (20) Kano dialect
- a. shi: nè: mùtumìn dà ya gayà:wà:
 he COP man that 3.S.M.CMPL.REL tell.IOM
 ‘He is the man I told it to’

⁶ Although historically, there is reason to believe that *wà* derives from *gà* (Newman 2000:276), synchronically, these two must be clearly distinguished, since *-wà*, unlike any other preposition is obligatorily stranded in extraction contexts, whereas stranding is ruled out for true prepositions.

b. wà: ka ji: wà: ciwo:
 who 2.S.M.CMPL.REL feel IOM injury
 ‘Whom did you injure?’

c. ya ji: wà ya:rò: ciwo:
 3.S.M.CMPL.REL feel IOM boy injury
 ‘He injured the boy’

With the IO marker being reanalysed as part of the verb, these speakers now choose short (=“C form”) *wà*, whenever the least oblique complement is locally realised, but lengthen it to “A-form” *-wà:*, if it is extracted. Note that presence or absence of a more oblique direct object does not have any impact on the lengthening. To summarise, these Kano dialect speakers have generalised FVS to be sensitive to the least oblique complement, regardless of function, whereas the Standard Hausa pattern can be reinterpreted in such a way that this sensitivity additionally takes into account the grammatical function of this complement.

3.1.2 Modal Particles

With the exception of the Kano dialect data, our discussion of word order and obliqueness in the preceding section has so far not been very conclusive, only offering an alternative interpretation of the data, i.e. in terms of argument structure rather than surface adjacency.

Clear evidence against the adjacency condition⁷ formulated by Hayes (1990) comes from modal particles (Schmalting 1991; Newman 2000). Although other modifiers cannot separate a verb from its direct object or indirect object complement (Joseph McIntyre, p.c.), modal particles can actually intervene.

(21) a. Ya: shuukà **kuma** audùga:
 he.CMPL.ABS planted also wheat
 ‘He also planted wheat’

b. *Ya: shuukà: **kuma** audùga:
 he.CMPL.ABS planted also wheat
 ‘He also planted wheat’

(22) a. ya: ga kuma irin ka:yàyya:kîn dà kè: ciki
 3.S.M.CMPL.ABS see also kind goods that CONT.REL inside
 ‘he saw also the kind of goods that were inside’

b. ta: tàmbàyi **kùwa** mà:târ
 3.S.F.CMLP.ABS ask moreover woman
 ‘She asked, moreover, the woman’

What is telling about these data is that surface intervention does not affect selection of the short vowel C-form, in any of the cases. Sure, one could try and refine the phonological instantiation frames to take these elements into account, but in doing

⁷ Hayes mentions these facts in a footnote, casually remarking that his Frame 1 needed to receive some refinement to take these elements into account.

so, the adjacency-oriented precompilation approach will lose much of its appeal: as Hayes claims himself (p. 106), strict adjacency is a defining property of precompiled phonologies and not so typical of inflection. If the adjacency requirements have to be relaxed, this can be taken as indirect evidence in favour of inflectional status.

3.1.3 Negation (Northern Dialects)

Similar evidence can be found in some Northern dialects of Hausa (Newman 2000). In Standard Hausa, sentential negation is expressed, in most tenses, by a discontinuous negative marker *bà...ba* where the first part immediately precedes the TAM marker (and sometimes fuses with it) and the second part is found VP-finally, either including (marked) or excluding complement sentences.

As noted by Newman (2000: 639), in some Northern varieties the second part of the discontinuous negation marker also appears directly after the verb, separating it from its direct object NP complement. With pronominal direct objects, such intervention is not possible, underlining the affixal status of the Hausa object pronouns (see footnote 2).

(23) Standard Hausa

a.	bàì	hàrbi	gi:wa:	ba
	3.S.M.CMPL.NEG	shoot	elephant	NEG
	'He didn't shoot an elephant'			

b.	bàì	hàrbe:	tà	ba
	3.S.M.CMPL.NEG	shoot	her	NEG
	'He didn't shoot it'			

(24) Northern dialects

a.	bàì	hàrbi	ba	gi:wa:
	3.S.M.CMPL.NEG	shoot	NEG	elephant
	'He didn't shoot an elephant'			

b.	*bàì	hàrbe:	ba	tà
	3.S.M.CMPL.NEG	shoot	NEG	her
	'He didn't shoot it'			

It should come as no surprise now that intervention does, again, not impede selection of the C-form (24). In contrast to modal particles, the marker of sentential negation cannot, under whatsoever circumstances, be reanalysed as part of the following NP. Thus, the Kano dialect data discussed above, together with the Northern dialect data presented here reveal, even more clearly than the standard variety, that surface adjacency is not the relevant concept to address the distribution of FVS in Hausa.

3.2 Double Accusatives

The finally conclusive piece of evidence on the issue comes from verbs taking two DO complements. Although, in these constructions, both complements are realised as direct objects (25), the first DO receives special status, being the “structural” object susceptible to promotion (in grade 7; see (26)):

- (25) a. sun biya: Mu:sa: kuđi:
 3.P.CMPL.ABS pay Musa money
 ‘They paid Musa money’
- b. kadà kà rò:ki Bàla: go:rò!
 2.S.M.NEG.SUBJ beg Bala cola nut
 ‘Don’t ask Bala for cola nuts!’
- (26) a. Abdù ba: yà: rò:kuwa: go:rò à ha:lin yànzù
 Abdu 3.S.M.CONT.NEG beg cola nut now
 ‘Abdu was asked for cola nuts.’
- b. *Go:rò ba: yà: rò:kuwa: Abdù à ha:lin yànzù
 cola nut 3.S.M.CONT.NEG beg Abdu now

However, if this first DO is extracted, as in (27), the verb (or VN) appears in its A-form, despite the presence of a right-adjacent direct object complement (Newman 2000).

- (27) a. su wà: kukè: biyà: kuđin?
 who.p 2.P.CONT.REL pay money.DEF.M
 ‘Who are you paying the money?’
- b. *su wà: kukè: biyàn kuđin?
 who.p 2.P.CONT.REL pay money.DEF.M

To conclude, these facts suggest, just like the intervention data, that surface adjacency fails to capture the full range of data and that reference to a privileged argument and its mode of realisation provide a more consistent picture of the Hausa data, a solution that I will explore in more detail in the following section. Moreover, this perspective will also align more neatly with the morphological facts established in the previous section, ultimately providing a definition of the inflectional category I consider FVS to be an exponent of.

4. Modes of Argument Realisation and Morphological Marking

In the preceding sections, I have argued that FVS in Hausa is but one exponent of a highly systematic distinction drawn in the language relating to the mode of realisation of some privileged argument, viz. the direct object. In particular, we have seen that the contexts in which A, B, and C-forms appear are highly consistent, even across major categories. As such, the underlying distinction is “based on a fairly restricted set of syntactic structural relations”, a property Hayes (1990: 106) takes as a defining property of inflectional morphology. Furthermore, the closer look at the full range of morphological alternation has revealed that, unlike Hayes’s characterisation of precompiled phonology, these data do not “involve rather haphazard environments that reflect [their] origin in true phrasal phonology” (Hayes 1990: 106). Furthermore, the

phenomena at hand are not “subject to a strict locality requirement” (Hayes 1990: 106) defined in terms of surface adjacency, as claimed by Hayes. Moreover, as evidenced by the morphology of weak VNs, reference to non-local realisation is a fundamental property of the system.

In this section I will review independent evidence both from Hausa and from language typology that underlines that the approach adopted here can not only do justice to the systematicity of the phenomenon, but that it will also further our understanding of Hausa morphosyntax in a broader cross-linguistic context.

4.1 Cross-linguistic Evidence

In their (2001) article, Bouma *et al.* propose a novel theory of extraction that operates crucially on argument structure: in this theory, which is developed within the framework of Head-driven Phrase Structure Grammar (Pollard & Sag 1987, 1994), both the introduction of a gap and the percolation of non-local information up the tree proceed via the argument structure of a lexical head. Thus, “information about the extracted element is locally encoded throughout the extraction path” (Bouma *et al.* 2001: 1).

What is important about this proposal in the present context, is that the authors motivate their approach on the basis of a wide range of extraction-sensitive morphological data. In particular, they discuss evidence from languages as diverse as Irish (Sells 1984; McCloskey 1989), Chamorro (Chung 1998), and French (Kayne & Pollock 1978; Kayne 1989; Miller & Sag 1997), all involving morphological marking of extraction contexts. The authors claim that similar evidence can be found in a number of other languages, including Palauan, Icelandic, Kikuyu, Ewe, Thompson Salish, Moore, Spanish, and Yiddish (see Bouma *et al.* 2001: 2 for references).

In Chamorro, as illustrated by the following data, verbs are morphologically marked depending on the mode of realisation of their subject, i.e. inflection signals whether or not a subject is extracted or contains a gap.

(28) Chamorro (Bouma *et al.* 2001: 27)

- a. Hayi *f-um-a'gasi* i kareta
 who WH.SU-wash the car
 ‘Who washed the car?’
- b. Hayi si Juan ha-sangan-i hao [*f-um-a'gasi* i kareta]
 who UNM Juan tell you WH.SU-wash the car
 ‘Who did Juan tell you washed the car?’
- c. Hafa *um-istotba* hao [ni malagao'-na i lahi-mu]
 what WH.SU-disturb you COMP WH.OBL-want-3SG the son-your
 ‘What does it disturb you that your son wants?’

These data show some striking similarity with what we found in Hausa: in both languages, verbal morphology is used to mark local vs. non-local realisation of some argument.

An even closer analogue to Hausa is French participle agreement (Kayne & Pollock 1978; Kayne 1989; Miller & Sag 1997): when used in conjunction with the

auxiliary *avoir*, past participles in this language may display agreement with the direct object. Presence vs. absence of agreement, however, depends on the way the direct object is realised: with locally realised direct object NPs, past participle is ruled out, and a default masculine singular form is selected. If, however, the direct object is extracted or realised as a pronominal affix on the auxiliary, the participle has to agree in number and gender with its direct object.

- (29) a. Marie a écrit / *écrite la lettre
Marie has written the letter
'Marie has written the letter'
- b. Marie l'a *écrit / écrite.
Marie her-has written
'Marie has written it (=the letter)'
- c. la lettre que Marie a *écrit / écrite.
the letter that Marie has written
'the letter that Marie wrote'
- (30) a. Marie s'est coupée/*coupé.
Marie self.is cut
'Marie has cut herself.'
- b. Marie s'est coupé/*coupée.
Marie self.is cut
'Marie has cut herself'
- c. la maison qu'il s'est construite/*construit.
the house that he self.is built
'the house he has built for himself'

If we compare now the French data with Hausa, we find that the former is actually a mirror image of the latter: while in French, presence of participle agreement morphologically expresses non-local realisation of a direct object complement, in Hausa, it is by-and-large local realisation of a direct object that receives morphological expression. Under this view, the role of the A-form, which is morphologically unmarked in the overwhelming majority of the cases, functions as a default form: in addition to non-local realisation, this form is used in all those cases where the distinction simply has no bearing.

4.2 *Further Evidence from Hausa: Marking of UDCs*

Although we cannot overestimate the role of the typological similarity between French and Hausa in our understanding of FVS and related phenomena, it would be even more satisfying, if we could find independent language-internal evidence, showing that Hausa is really an instance of this typologically well-attested type of languages, where morphological marking of extraction or unbounded dependency constructions (UDCs)

is a defining characteristic. As we will see shortly, exactly this type of evidence can in fact be found.

As we have already mentioned above, verbal inflectional categories such as marking for tense, aspect and mood are expressed, in Hausa, by a set of independent TAM markers, preceding the verb or VP. Often, these markers are fused with subject agreement and the marker of negation. Although neutralised in most tenses (including all negative “tenses”), continuative and completive aspect have two independent sets of forms, called absolutive (or general) vs. relative.

Although, in narratives, the relative completive has a secondary function for describing a series of events, in normal speech, choice between these sets is syntactically conditioned (Tuller 1986; Davis 1986; Newman 2000).

(31) Declaratives

- a. mutà:ne: sun zo: jiyà:
 people 3.P.CMPL.ABS come yesterday
 ‘The people came yesterday’
- b. mutà:ne: sunà: zuwà:
 people 3.P.CONT.ABS coming
 ‘The people are coming’

(32) Relative clauses

- a. mutà:nen dà sukà /*sun zo: jiyà:
 men.DEF.P that 3.P.CMPL.REL 3.P.CMPL.ABS come yesterday
 ‘the people who came yesterday’
- b. mutà:nen dà sukè: /*sunà: zuwà:
 men.DEF.P that 3.P.CMPL.REL 3.P.CMPL.ABS coming
 ‘the people who are coming’

(33) Wh questions

- a. mè: ya /*ya: gani:
 what 3.S.M.CMPL.REL 3.S.M.CMPL.ABS see
 ‘What did he see?’

(34) Topicalisation

- a. Kànde cè: ta /*ta: zo:
 Kande COP 3.S.F.CMPL.REL 3.S.F.CMPL.ABS come
 ‘It’s Kande who came?’
- b. cikin mo:tà: ne: mukà /*mun zo:
 in car COP 1.P.CMPL.REL 1.P.CMPL.ABS come
 ‘By car we came’

As illustrated by the data above, markers from the absolute set are chosen in ordinary sentences without any unbounded dependencies. Once a non-local dependency is present, forms from the relative set must be used instead.⁸

- (35) mè: sukè: fatan sun /*sukà gamà:
what 3.P.CONT.REL hoping 3.P.CMPL.ABS 3.P.CMPL.REL finish
'What did they hope they have finished?'

Although it is pretty evident that this alternation is sensitive to extraction contexts, the data in (35) reveal that selection of the relative set of TAM markers is only triggered at the point where the nonlocal dependency is bound off by a filler (Davis 1986; Newman 2000).

In sum, we can conclude that marking of nonlocal dependencies is a central property of Hausa morphosyntax. Marking of unbounded dependencies actually demarkates the two extreme points of a UDC, i.e. the filler and the gap: while the position of the former is morphologically signalled by the choice of TAM marker, position of the latter is marked, at least for direct objects, by selecting the A-form.⁹

Note further that in contemporary lexicalist frameworks such as Head-driven Phrase Structure Grammar (HPSG) or Lexical Functional Grammar (LFG), reference to local vs. non-local realisation of arguments can be straightforwardly expressed without any recourse to phrase-structural configurations, either by means of head-driven, traceless extraction (HPSG), or inside-out functional uncertainty (LFG).¹⁰ Under this perspective, the precompilation approach appears also to be an artifact of the descriptive devices offered by transformational syntax.

5. Conclusion

In this paper, I have argued that Hausa FVS is but one exponent of a systematic distinction drawn in Hausa morphosyntax, namely marking of argument realisation modes, ranging from direct local realisation, over pronominal affixation to extraction. This basic distinction, which has been shown to be highly characteristic of Hausa morphosyntax, receives a natural explanation, once we abandon the narrow perspective of an isolated rule of phrasal allomorphy in favour of a morphological perspective on the data, accounting for the tight integration of FVS with Hausa stem morphology, the diversity of exponence expressing the morphosyntactic distinction, as well as the class-specific and sporadic patterns of neutralisation, including rules of referral. This morphological perspective has also paved the way for a deeper understanding of Hausa morphosyntax, brought about by the connection we have established between the phenomenon at hand to the typologically well-attested pattern of morphologically marked extraction contexts, thereby characterising Hausa as the mirror image of French.

⁸ Embedded declaratives pattern with matrix declaratives, underlining that the sensitivity involves extraction paths, not merely a filled COMP position.

⁹ Within the context of long-distance extraction, marking of local vs. nonlocal realisation also receives a functional explanation: with transitives, choice of non-A forms (as witnessed by C-form *fa:tan* in (35) above) can provide a clue, during sentence processing, as to the location of the gap site.

¹⁰ Due to space limitations, the formal analysis had to be omitted. I therefore refer the reader to an extended version of this paper, currently under review, which is available from my homepage (<http://www.dfki.de/~crysmann/>).

Furthermore, we have investigated in some detail the syntactic environments defining the underlying inflectional categories and have found that simple surface-oriented adjacency requirements should be supplanted with reference to argument structure.

Finally, it is worth noting that a morphological analysis is not only to be preferred on empirical and typological grounds, but that it is also advantageous for methodological reasons: besides the usual Occamian arguments, which surely apply here as well, elimination of Precompiled Phrasal Phonology from the theory of grammar will ultimately provide for a more strengthened division between phrasal and lexical phonology. This goal seems actually quite attainable, given that a variety of seemingly precompiled phonologies has meanwhile been successfully reanalysed, e.g., the Mende and Kimatuumbi data (Cowper & Rice 1987), which, alongside Hausa, have formed the empirical base of Hayes's original proposal.

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