Vafsi Oblique Pronouns: Stress-related placement patterns

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Abstract

This paper discusses and analyses the distribution of oblique pronoun clitics in Vafsi. In contrast to earlier studies (Stilo, 2004a,b, 2010), we show that oblique clitics in Vafsi do not have affixal counterparts, but that all instances and forms of the clitic can be explained with reference to prosodic constraints. In cases where the prosodically deficient oblique enclitic is left without a suitable host, prosodic inversion aims to place the clitic accordingly. The erstwhile 'affixal form' corresponds to the cases where the clitic is forced to carry stress itself and consequently assumes a 'full form'. We furthermore provide a complete formal analysis of the oblique pronoun clitics at the syntax-prosody interface in LFG (Bögel, 2015).

1 Introduction

Vafsi is a Northwestern Iranian language spoken by approximately 20,000 people in two dialects. It does not have a standard written form and information on its grammar is sparse. The main source of Vafsi are recordings of folk tales by Lawrence P. Elwell-Sutton from 1958 and their transcription, translation, and short linguistic analysis by Donald L. Stilo (Stilo, 2004b). Supplemented by further field study material, Stilo also wrote two follow-up papers on coordination and ditransitives in Vafsi (Stilo, 2004a, 2010). Most material used in the following discussion comes from these sources and from Mirdehghan and Yousefi (2016), and was further confirmed by one of the co-authors, Saeed Yousefi, who is a native speaker of the language.

Vafsi is a non-rigid verb-final language where the postverbal positions are determined by information structural constraints. It largely follows a tense/aspect-based split ergative system. Furthermore, it has differential object marking that seems to depend on animacy and specifity. Vafsi distinguishes between direct and oblique case marking, which is reflected in the three pronoun realisations in Vafsi: Independent pronouns, pronoun bases[1], and pronominal clitics. The paper's main focus lies on the oblique pronominal clitics, their distribution, and their 'affixal counterparts'.

The following table shows the direct and oblique sets of clitics and their 'affixal counterparts' as they are described in Stilo (2010, with adjustments reflecting pronunciation).

[1]There are two oblique pronoun bases which can serve as a host for the clitics: *hazun* and *verewn*, which are used in non-subject functions, have no semantic content, and can occur postverbally (unlike the clitics by themselves). Person must be obligatorily indicated by a pronoun clitic and the distribution seems to be related to case (Stilo, 2004b, 227), but more research is needed in this particular area.

	direct *(set 1)*		oblique *(set 2)*	
	enclitics (copulas)	*affixes*	*enclitics/ proclitics*	*affixes*
1SG	=im(e)	-om(e)	=om	-im-
2SG	=i	-i	=i	-i-
3SG	=e (m.)/=oæ(f.)	(V)-e / (C)-∅	=es	-is-
1PL	=am(e)	-am(e)	=owan	-iwan-
2PL	=a	-a	=ian	-ian-
3PL	=end(e)	-end(e)	=esan	-isan-

Table 1: Oblique and direct pronouns in Vafsi (Stilo, 2010)

While the direct pronominal markers are usually suffixed to the verb, the oblique pronoun clitics always occur preceding the verbal complex where they prosodically attach to a preceding host.

(1) ketab=**i**   d-do-*m*
    book=2S.OBL DUR-give-1S.DIR
    'I'll give you a book.'   (Stilo, 2010, 270)

While the direct pronominal markers most often occur as affixes and the oblique pronominal markers are usually clitics, these categorical classifications seem to change under specific circumstances. According to Stilo (and as shown in Table 1), the direct affixes sometimes can occur as clitics, and the oblique clitics can occur as affixes. The following minimal pair shows the occurence of the first person oblique pronoun as a clitic (2a) and as an affix (2b).

(2) a.   an=**om**   ær-góæ   b.   **ìm**-ær-góæ
         that=1S.OBL DUR-want   1S.OBL-DUR-want
         'I want that'   'I want'   (Stilo, 2010, 247)

In this paper we will show that this separation of the oblique pronominal markers into two different forms is not in fact a categorical distinction into clitics and affixes, but that the difference in form can be explained with reference to the clitic's position with respect to prosodic domains and stress distribution, i.e., the oblique 'affixes' are in fact 'clitics under stress'.[2]

2   Vafsi oblique pronoun clitics

The placement of oblique pronoun clitics follows a mostly regular pattern: The clitic is placed directly preceding the verbal complex (vc). The prosodically deficient enclitic follows a host, which is not limited to a particular word category or function as shown in the following examples.

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[2]Whether a similar claim can be made for the direct pronoun distinction into affixes and clitics remains to be investigated.

(3) soan-e=ra   bez-e   šax**=es**   [tíz=a   kærdæ̀]$_{VC}$
     file-F.OBL=with goat-F.OBL horn=3S.OBL sharp=ATTR did
     'He sharpened the goat's horns with a file.'   (Stilo, 2004b, 291)

(4) tani   hæzíri**=m**   [bǽ-diæ]$_{VC}$
     he.OBL yesterday=1S.OBL PUNCT-saw
     'I saw him yesterday.'   (Stilo, 2010, 247)

The size or complexity of the verbal complex does not seem to have an impact on the placement of the clitics. Whether the verbal complex contains a simple verb ((5)) or a complex predicate ((6)), the clitic is placed preceding the verbal complex.

(5) ya qærri**=es**   [bǽ-košdé]$_{VC}$
     or witch=3S.OBL PUNCT-killed
     '... or he killed the witch.'   (Stilo, 2004b, 244)

(6) bǽlke hævi-án**=es**   [komǽk ær-kæ̀rdæ]$_{VC}$
     but   all-PL.OBL=3S.OBL help   DUR-did
     '... but he helped everybody.'   (Stilo, 2004a, 305)

However, there are also a number of occurences where the clitic is not placed according to the regular pattern. In certain circumstances, the clitic can also occur between the two members of a complex predicate, attaching itself to the first element.

(7) æ-cu   ešden bǽ-vær-i   ya [komǽk**=i**   kær-òm]$_{VC}$
     DUR-an SELF PUNCT-take-2S.OBL or help=2S.OBL do-1S.DIR
     'Can you carry it yourself or should I help you?'   (Stilo, 2004a, 148)

As noted in example (2), repeated in (8), the clitic can occur as an 'affix'. This 'affixal form' is furthermore not limited to the sentence-initial position as shown in (9).

(8) a.   an**=om**   [ær-góæ]$_{VC}$ b.   [**ìm**-ær-góæ]$_{VC}$
        that=1S.OBL DUR-want   [1S.OBL-DUR-want]$_{VC}$
        'I want that'   'I want'   (Stilo, 2010, 247)

(9) bá-waz   ya [**ì**-r-koš-ome]$_{VC}$
     PUNCT-tell or   2S.OBL-DUR-kill-1S.OBL
     'Tell (me) or I will kill you'   (Stilo, 2004b, 312)

In addition, the clitic can occur *verb-medially* in its 'affixal' form, following either the punctual marker, the negative marker, or a preverb. The following minimal pair shows the clitic preceding ((10a)) and following ((10b)) the punctual marker *bæ*. Structures like these can also occur if a host outside of the verbal complex is seemingly available ((11)).

(10) a. án=**om** [bǽ-diæ]_{VC}   b. [b-**ím**-diæ]_{VC}
     that=1S.OBL PUNCT-saw   PUNCT-1S.OBL-saw
     'I saw that'   'I saw'   (Stilo, 2010, 247)

(11) bærzegǽr-i [v-**ís**-vattæ]_{VC}
     farmer-OBL PUNCT-3S.OBL-said
     'The farmer said ...'   (Stilo, 2004b, 239)

The verb-medial occurences are not reduced to the 'affixal' form. As can be seen in the following examples, the clitic form can be placed between a preverb and the main verb stem.

(12) tinan vǽxdi=ke nahar=esan [hár=**es**-da]_{VC} ...
     they.OBL when=SUB lunch=3P.POSS PVB=3S.OBL=gave
     'When she (=*es*) gave them (*tinan*) their (=*esan*) lunch'   (Stilo, 2010, 254)

(13) bæd-æz kará-i ke [hár=**esan**-kærdæ]_{VC}
     after-from things-INDEF SUB PVB=3P.OBL=did
     'After the things they did ...'   (Stilo, 2004a, 290)

As an intermediate conclusion it can be stated that the clitics usually occur in the position immediately preceding the verbal complex, but can also occur within the verbal complex separating members of a complex predicate and even within otherwise non-dividable parts of the verb. Furthermore the oblique pronouns appear mostly in their clitic form, but under specific circumstances occur in their 'affixal form'. The following table gives an overview.

	Position	Examples	Form
1.	preceding the verbal complex (non-initial position)	(3) – (6)	clitic
2.	between the members of a complex predicate	(7)	clitic
3.	preceding the duration marker	(8b), (9)	'affix'
4.	following the punctual marker, the negation marker, or a preverb	(10b) – (13)	'affix'

Table 2: Distribution of oblique pronoun clitics

To account for these differences, Stilo assumes that the clitic originates within the verbal complex/the verb and is 'fronted' if an adequate host is available (Stilo, 2004b, 238). However, there is no unified reason as to why the clitic would be fronted in examples (3-6), but not in examples (7-13). This paper, on the other hand, offers an explanation in prosodic terms. We claim that oblique clitics originate in the position preceding the verbal complex. If there is no suitable host available to the left, the clitics are either forced to stay in situ or are 'moved' to an adequate position via *prosodic inversion* (Halpern, 1995). In the case of prosodic inversion, the clitic is placed after a stressed host to its right.

Fronting: *Prosodic inversion:*

=clitic   vc   =clitic   vc
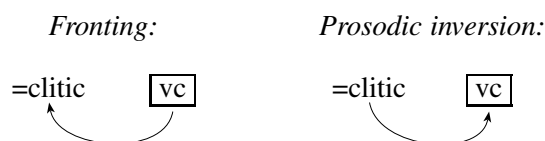
As briefly mentioned in fn 1, the oblique clitics can never occur postverbally with-out a pronoun base (and then only in information-structurally marked contexts). The most likely explanation for this constraint is the possible confusion with the direct pronominal markers which are placed immediately following the verb and which have, to some extent, the same (phonological) forms as the oblique mark-ers. Consequently, if the postverbal position is the only target position available to prosodic inversion, prosodic inversion must not apply in order to avoid confusion. However, since a prosodically deficient enclitic cannot remain in the initial posi-tion, the clitic has to assume a stressed 'full form', Stilo's former 'affixal form' as shown in Table 1. This stressed 'full form' also occurs if the clitic is moved via prosodic inversion and ends up in a position where it receives stress as the result of a postlexical phonological stress placement rule (see below).

3   Relevant aspects of Vafsi grammar

Before oblique clitics can be discussed in more detail and before the earlier claim about the clitics being subjected to prosodic inversion can be verified, further as-pects of the Vafsi grammar have to be introduced. This section will therefore pro-vide more information on some intonational patterns found in Vafsi, on the verbal complex and some of its members, and on the expression of the possessive, as they provide crucial insights into the analysis of the oblique clitic pronouns.

3.1   Intonational patterns

One of the claims made above states that if the prosodically deficient oblique en-clitic is stranded in the initial position of a prosodic domain, the enclitic has to be a) placed in a suitable position via prosodic inversion, or b) assume its stressed full form. Larger prosodic domains in the prosodic hierarchy (McCawley, 1968; Selkirk, 1978) are the intonational phrase (ι, usually corresponding to a syntactic IP or CP) and the phonological phrase (φ, usually an XP) (Ladd, 1986; Selkirk, 2011).[3] So far, there is no detailed research on prosodic phrasing in Vafsi. Based on the folk tale recordings, however, Stilo (2004a,b) was able to distinguish basic patterns of Vafsi prosody, some of which will be briefly introduced in this section, as they add to the analysis of the oblique clitic pronoun and offer a fundamental explanation for the difference in form (Stilo's distinction into clitics and affixes).

As is the case in many languages, the placement of sentence stress in Vafsi is dependend on information structural constraints, but in unmarked sentences, the

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[3]For Vafsi, an Accentual Phrase might be more fitting as in Sadat-Tehrani (2007) for Persian, but this is left for further research.

main pitch accent typically falls on the element directly preceding the verb (which consequently is a suitable host for a prosodically deficient enclitic).

In subordinate clauses, on the other hand, the initial subordinate conjunction usually receives the main pitch accent. Note, however, that this does not hold for the subordinate conjunction *ke*, which Stilo (2004b, 21) assumes to be a subordinating particle without any semantic content. Under the assumption that each subordinating phrase corresponds to an intontational (or at least a phonological) phrase, an oblique clitic occuring directly after the unstressed particle *ke* is thus stranded without an adequate host $_\iota$(k/é =clitic ...)$_\iota$ and requires a prosodic repair mechanism, e.g., prosodic inversion. In the case of example (13), prosodic inversion then places the clitic after the first suitable host to its right, i.e., the stressed preverb *hár*.

A particular prosodic pattern in Vafsi is the so-called *sustained intonation* where the pitch level remains high and flat, with a longer duration on the sustained element and a brief, but perceptible pause following (Stilo, 2004b, 274). In terms of prosodic phonology, sustained intonation can be associated with a phonological phrase boundary (Selkirk, 1978; Nespor and Vogel, 1986; Frota, 2012). In Vafsi, such a boundary seems to occur

- after constructions connected by the coordinating conjunctions *-o* ('and') and *ya* ('or'), thus explaining examples like (7) and (9), and

- often after the subject of a sentence in Vafsi (see also Sadat-Tehrani (2007) for Persian[4]), which explains examples like (11) where the clitic cannot directly follow the subject.

Furthermore, if the prosodically deficient enclitic is placed in the initial position of a phonological/intontaional phrase as it is the case with example (8b), and cannot be moved via prosodic inversion (the only suitable position would be the postverbal position), the clitic is forced to assume its stressed full form. The question why the clitic cannot be placed after the durative marker *ær*, but certainly after the punctual marker, the negative marker, and the preverbs will become clear in the following section.

In conclusion, by assuming the oblique enclitic to be sensitive to prosodic phrasing, we can already explain a large proportion of the seemingly irregular examples: If the clitic is stranded at the beginning of a prosodic phrase without an adequately stressed host to its left, the clitic has to undergo one of two possible prosodic repair mechanisms: a) prosodic inversion, or, if this is not possible, b) assume a clitic-under-stress form.

However, not all forms can be explained with reference to prosodic boundaries. Table 3 gives an overview on the seemingly critical examples (7)-(13) with respect to prosodic boundaries (round brackets) and the applied repair mechanism; open questions are indicated by ?.

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[4]In fact, adding a comma after the subject is common practice in written Persian.

pros. constraint	example	*prosodic inversion*	*clitic under stress*
sustained: coord	(7)	(komǽk=**i** kær-òm)	
initial in IP	(8)	–	(**ìm**-ær-góæ)
sustained: coord	(9)	–	(**ì**-r-koš-ome)
initial in IP	(10b)	(b-**ím**-diæ)	?
sustained: subject	(11)	(v-**ís**-vattæ)	?
?	(12)	... hár=**es**-da	–
initial in CP	(13)	(hár=**esan**-kærdæ)	–

Table 3: An overview on examples (7)-(13) with respect to prosodic boundaries

The question why the stressed form of the clitic appears verb-medially in examples (10b) and (11), but not in (12) and (13), and why (12) requires the clitic to occur within the verbal complex at all will be discussed in the following two sections.

3.2 The verbal complex and its members

There are a number of particles in the verbal complex which shed light on the distribution patterns of the clitic and which we will therefore briefly discuss in the following section. These are:

1. The durative marker *æt*
2. The punctual marker *bǽ*
3. The negation marker *nǽ*
4. The preverbs *dǽ(r)-, ó(r)-,* and *há(r)-*

The **durative marker *æt-*** occurs in the present and the imperfect and is placed before the main verb ((14a), repeated from (8)). Its surface form may change depending on the phonological environment[5]. The durative marker is unstressed and is therefore unsuitable to function as a host for stranded oblique clitics ((14b)).

(14) a. an=**om**   [ær-góæ]$_{VC}$ b. [**ìm**-ær-góæ]$_{VC}$
        that=1S.OBL DUR-want   [1S.OBL-DUR-want]$_{VC}$
        'I want that'   'I want'   (Stilo, 2010, 247)

As the clitic is prohibited from moving to the postverbal position, the only remaining option is to assume a stressed form, which is also clearly visible in the following speech signal (depicting *na=san æd-dir-am* ('We (will) keep/hold them') on the left, and *isan-ær-vend-am* ('We (will) find them') on the right.)

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[5]As the different phonological surface forms of the durative, but also the punctual marker, are irrelevant for the current discussion, the interested reader is referred to Stilo (2004b).
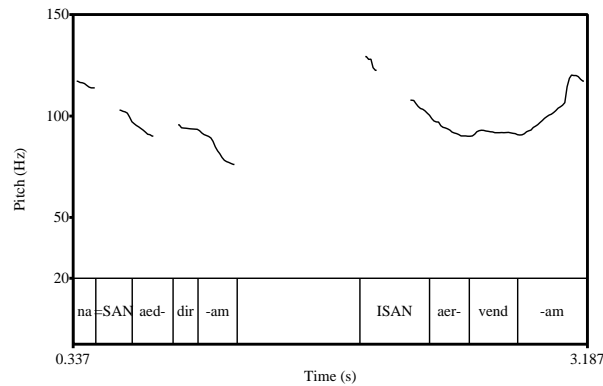
Figure 1: Pitch contrast between the clitic (left) and the stressed full form (right)

On the left side in Figure 1, the clitic precedes the durative marker and follows the element carrying stress (*na*). Both the clitic and the durative marker are clearly unstressed. On the right side, the clitic is left stranded in the initial position and thus assumes the clitic-under-stress form *isan*, which is clearly visible in the speech signal itself. The durative marker following *isan* is again unstressed.

The **punctual marker *bǽ-*** is used in the presesent subjunctive, the simple past, and all perfect tenses. Like the durative marker, the punctual marker is also placed before the verb ((15), repeated from (10a)).

(15) án=**om**   [bǽ-diæ]$_{\text{VC}}$
     that=1S.OBL PUNCT-saw
     'I saw that'   (Stilo, 2010, 247)

However, in contrast to the durative marker, the punctual marker carries stress. Furthermore, if the element following the punctual marker starts with a vowel, the punctual marker's *æ*-vowel is dropped and stress shifts to the adjacent vowel:

(16) *bǽ-* (PUNCT) + *-av* ('come') + *-e* (3S.DIR) → *báwe* ('s/he came')

(Stilo, 2004b, 15)

Since the punctual marker is stressed it can function as a suitable host for an oblique clitic stranded in the initial position, which consequently undergoes prosodic inversion and is placed in the position following the punctual marker ((17a)). However, as discussed above, if the punctual marker is followed by a vowel, the punctual marker's vowel is dropped and stress is shifted to the vowel of the following element - in that case the clitic ((17b,c)), which is then again forced to assume its clitic-under-stress form, also visible in the speech signal (Figure 2).

(17) a. *prosodic inversion*: =om bǽ-diæ → bǽ=om-diæ
     b. *stress shift*:   bǽ=om-diæ → b=óm-diæ → b-ím-diæ
     c. [b-**ím**-diæ]$_{\text{VC}}$
       PUNCT-1S.OBL-saw
       'I saw'

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Figure 2: Speech signal depicting *b-ím-diæ* ('I saw')

The **negative marker *nǽ-*** behaves like the punctual marker *bǽ-*, in that it occurs preverbally and carries stress. Furthermore, if the following element has an initial vowel, *æ* is dropped and stress shifts to the vowel of the following element. However, if the negative and the punctual marker co-occur, the punctual marker is suppressed (*bǽ-ssim* 'I went', but *nǽ-ssim* 'I didn't go' (Stilo, 2004b, 233)). In contrast, the negative particle can co-occur with the durative marker ((18)).

(18) an ræféq-i=s [nǽ-r-vaz-e]$_{VC}$
  he.DIR friend-OM=3S.POSS NEG-DUR-say-3S.DIR
  'He doesn't tell his friend.'   (Stilo, 2010, 259)

In cases where the negative marker co-occurs with a clitic, the process in (17) is applied. If the clitic is stranded in the initial position, it is first placed following the stressed negative marker via prosodic inversion, before assuming its full form due to the stress shift from the negative marker.

(19) [n-**ím**-ær-vaz-i?]$_{VC}$
  NEG-1S.OBL-DUR-say-2S.DIR
  'Won't you tell me?'   (Stilo, 2010, 266)

As their name suggests, the **preverbs *dǽ(r)-, ó(r)-* and *há(r)-*** occur preverbally. Originally, the preverbs were directional particles; they add to the meaning of the verb from finer nuances to complete meaning changes with respect to the main verb. As the following table shows, it is almost impossible to associate each preverb with a particular meaning.

Vafsi	English	Vafsi	English
giræett	grab, catch	biri	interrupt, cut off
ó(r)-giræett	pick up, lift	ó(r)-biri	cut out (with scissors), curdle
há(r)-giræett	take, get, bury	há(r)-biri	shear (fleece), cut of (sheep's) head
dǽ(r)-giræett	gather up	dǽ(r)-biri	cut (general)

Table 4: The preverbs *dǽ(r)-, ó(r)-* and *há(r)-* (see Stilo, 2004b, 233)

Not all verbs have preverbs (e.g., *vin/di* 'see'), some have only a subset of preverbs, and some do not occur without any preverbs (e.g., *hár-eysi* 'make dough').[6] While the preverbs suppress the duration and the punctual marker, they are themselves suppressed by the negative marker. In this case, the exact meaning of the negated verb is not discernible and has to be determined by context.

If the preverbs co-occur with a clitic, the clitic is usually placed preceding the preverb (and the verbal complex).

(20) tæmen ketab=**es**   [há-baxǎa]$_{VC}$
      1S.OBL book=3S.OBL PVB-gave.away
      'He gave a book away to me.'   (Stilo, 2010, 253)

The preverbs are all stressed, i.e., they are suitable hosts for a clitic undergoing prosodic inversion. Crucially, however, they do not follow the pattern of stress shift that occurs with the punctual and the negative marker. As a consequence, the clitic retains the clitic form and stress remains with the preverb ((21), also (13)).

(21) [hár=**om**-da]$_{VC}$ yey kelj-i
      PVB=1S.OBL=gave one girl-OF
      'I gave (it) to some girl.'   (Stilo, 2010, 252)

From the above discussion on the unstressed durative marker, the stressed punctual marker, and the stressed negative marker, it becomes clear why the clitics assume their full form in (9), (8), (10b), and (11): with the durative marker, they have to remain in situ in the initial position of a prosodic phrase, because an adequate host is not available; with the punctual and the negative marker, prosodic inversion is possible, but the stress shift from the markers to the clitic again forces the clitic to assume its full form. Finally, with the preverbs, the clitics undergo prosodic inversion, but are not subjected to a stress shift and can thus retain their clitic form.

However, all of these cannot explain why the clitic is inverted in example (12). This question is resolved in the following section.

3.3 The possessive construction in Vafsi

In addition to other possibilities (e.g., *ezafe* (Stilo, 2004b)), the possessive in Vafsi can be expressed by the same set of clitics as the oblique pronouns. Important to note is that the possessive marker (underlined) directly follows the possessed item and is thus (in contrast to the pronoun clitic) not restricted to the preverbal position.

(22) ... šus=<u>s</u>   sær=**esan**   [há-biri]$_{VC}$
      husband=3S.POSS head=3P.OBL PVB-cut
      '... they cut off her husband's head.'   (cf. Stilo, 2010, 290)

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[6]This discrepancy in distribution as well as the variety in meaning suggests that the respective preverbs are closely attached to the verb to the extent that they form a single lexical entry with it.

The possessive clitic can also occur in the preverbal position where the ambiguity in form can lead to an ambiguity in understanding.

(23) a. kænizan=<u>es</u> báwattæ   '*Her* servant girls said (so)' → as possessive

b. kænizan**=es** báwattæ   '*She* told the servant girls'   → as subject

(Stilo, 2004b, 13)

While the possessive indicator and the oblique clitic can certainly co-occur in one sentence ((22)), they never co-occur in the same position; i.e., the oblique clitic cannot attach directly to the possessive marker. In these cases, the clitic is moved via prosodic inversion which explains example (12) discussed above: The clitic moves to the position following the stressed preverb *hár*, retaining its unstressed form, because it cannot take the possessive clitic as its host. In the following example, on the other hand, the position targeted by prosodic inversion is directly after the punctual marker, which, according to the stress-shifting rules discussed above, drops its vowel and shifts the stress to the following vowel of the clitic. The clitic, now stressed, assumes its full form *ís*.

(24) bár=es   [v=**ís**-værd]$_{VC}$
    load=3S.POSS PUNCT=3S.OBL-took
    'He took his load.'   (Stilo, 2004b, 239)

3.4 Intermediate conclusion

As established in the previous sections, the oblique clitics have a fairly regular placement pattern preceding the verbal complex. The cases where this pattern is interrupted can be explained via prosodic means: If the prosodically deficient enclitic does not have a suitable host to its left, this violation of prosodic constraints is repaired by a) prosodic inversion, or (if this is not possible), by b) the clitic assuming its stressed full form.

pros. constraint	example	*prosodic inversion*	*clitic under stress*
sustained: coord	(7)	(komǽk**=i** kær-òm)	
initial in IP	(8)	–	(**ìm**-ær-góæ)
sustained: coord	(9)	–	(**ì**-r-koš-ome)
initial in IP	(10b)	*(bǽ**=om**-diæ)	(b-**ím**-diæ)
sustained: subject	(11)	*(vǽ**=es**-vattæ)	(v-**ís**-vattæ)
possessive	(12)	=*poss* hár**=es**-da	–
initial in CP	(13)	(hár**=esan**-kærdæ)	–

Table 5: An overview on the respective placement constraints of examples (7)-(13)

As can be see in the table above, all of the seemingly confusing cases can be explained accordingly. It can therefore be concluded that there is no need to assume

an 'affixal form' for the oblique clitics, which would require a unified explanation as to why some structures prefer the affixal form and others do not; one would, in fact, expect the affixal form to be present at all times, as it would be considered to be part of the morphological form. With the approach presented above, on the other hand, all instances can be explained with reference to the interface between syntax and prosody, and postlexical phonology.

4 Vafsi oblique pronouns at the syntax-prosody interface

In the following section we will analyse the findings discussed above at the syntax-prosody interface as proposed in Bögel (2015), which allows for a straightforward communication at the interface itself and can furthermore account for postlexical phonological processes like the stress shift and prosodic inversion as well. The model is based on the assumption that there is a fundamental difference between two perspectives on grammar: *production* and *comprehension*.[7] *Production* refers to the process from meaning to form, i.e., from the composition of meaning in the mind to the final articulation. *Comprehension* on the other hand refers to the processing of speech/text into meaning, i.e., to the transfer from form to meaning. In between these two vanishing points are the different modules of grammar, and, depending on the process, the arrangement has a certain directionality. The following figure illustrates (adapted from Jackendoff, but see other models of speech production/comprehension, e.g., Levelt (1999)).[8]

In LFG, the syntax → prosody interface exchanges information from c-structure to p-structure and the prosody → syntax interface refers to the information transfer from p-structure to c-structure. In the following, the exemplary Vafsi oblique pronouns in (25) are discussed at the syntax–prosody interface (i.e., during production).

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[7]Taking a directional perspective is crucial at the interface between the syntactic and the prosodic module. While the syntactic module provides the underlying syntactic constituency as input to prosodic constituency during production, prosodic phrasing usually does not determine syntactic phrasing. Frequent mismatches between syntactic and prosodic phrasing are a further indication that treating the interface equally in both directions is not efficient; instead, a selective 'checking' in the few cases where prosodic phrasing is relevant to syntactic phrasing is assumed. A non-directional analysis of an interface phenomenon runs the risk of providing an analysis that can never be processed in reality, whether by humans or machines, because the phenomenon itself is dependent on a pipeline view (as in the present paper). The approach presented in this paper therefore assumes a more directional view where grammar is seen as a 'map' for a particular act of language, either production or comprehension (see also Figure 3).

[8]The abstract representation and the arrangement of modules is what is generally dubbed as 'competence' as opposed to 'performance', which includes factors beyond the grammatical rules of a language (where the boundary is sometimes difficult to determine). However, it is also clear that any model of performance must be able to "incorporate the system of grammatical rules" (Chomsky, 2006, 104). The model presented here understands the arrangement of modules (including the directionality) and the associated grammatical rules as part of competence, but furthermore assumes that these modules greatly overlap and allow for backtracking during performance.
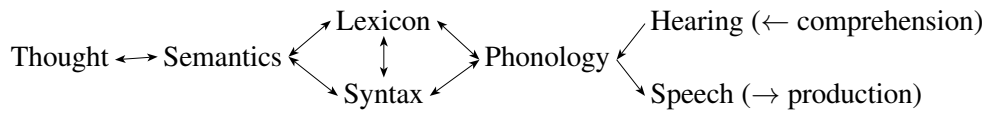
Figure 3: The language processor (cf. Jackendoff, 2002, 197, modified).

(25) a. án=**om**   [bǽ-diæ]$_{VC}$ b. [b-**ím**-diæ]$_{VC}$
        that=1S.OBL PUNCT-saw   PUNCT-1S.OBL-saw
        'I saw that'   'I saw'   (Stilo, 2010, 247)

There is, as of yet, not enough background information to determine the c-structure of Vafsi (although Belyaev and Haug (2018)'s analysis of the VP in Ossetic is a good starting point for future work on the syntactic side of Vafsi). We will therefore restrict ourselves to a flat c-structure, as it is the linear order which is relevant for the present analysis.

(26) S ⟶ XP* CL VC

For example (25a), the analysis is straightforward: The clitic prosodically attaches to an adequately stressed host to its left (NP =CL VC). In example (25b), on the other hand, the syntactic analysis does not provide a stressed element to the left of the clitic(_ =CL VC); the clitic is left stranded in the first position.[9] The correct analysis of cases like these cannot be reduced to syntax alone, but requires reference to the syntax-prosody interface and to postlexical phonology. In the following, we will analyse example (25b) at the interface as introduced in Bögel (2015).

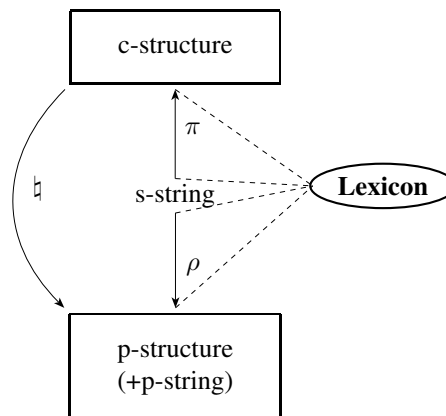Figure 4: The syntax–prosody interface (Bögel, 2015)

Two transfer processes are assumed at the interface:

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[9]Which, from a syntactic perspective, is fully justifiable, as syntax is not responsible for the creation of prosodically accurate structures.

1. The *transfer of structure* (♮) exchanges information on larger syntactic and prosodic constituents (IP/CP/XP; ι/φ).

2. The *transfer of vocabulary* (π/ρ) associates morphosyntactic and phonological information on lexical elements and projects them to their respective (c- and p-)structures

Before describing the two transfer processes at the interface in more detail, the following section briefly introduces the representation of p-structure.

4.1 P-structure – the p-diagram (during production)

P-structure is represented via the p-diagram which allows a syllablewise linear representation of the utterrance in question. Each syllable is part of a vector (V.INDEX) which associates the syllable with relevant segmental and suprasegmental phonological information. Input to the p-diagram comes from c-structure (*transfer of structure*) and the lexicon (*transfer of vocabulary*).

PHRASING	$(_\iota =\sigma$	$(_\omega\sigma$	σ	$\sigma)_\omega)_\iota$
...	...	...	...	...
LEX.STRESS	–	prim	–	–
SEGMENTS	/om/	/bæ/	/di/	/æ/
V. INDEX	S_1	S_2	S_3	S_4

Figure 5: Syntactic input to p-structure: the initial p-diagram for example (25b)

Figure 5 represents the initial input to p-structure from the two transfer processes at the interface, which will be introduced in more detail in the following sections.

4.2 The Transfer of Vocabulary

The *transfer of vocabulary* operates at the word-level and below. It relates each element of the string to its associated morphosyntactic and phonological information in the lexicon. Each lexical entry[10] is associated with (at least) three dimensions: its semantic concept (irrelevant in the present discussion), its s(yntactic)-form which includes all the relevant morphosyntactic information, and its p(honological)-form, which includes information on segments, metrical structure, or lexical stress. The following table shows the s-form and the p-form for *bǽ-diæ* and *om*.

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[10]'Lexical entry' here is equal to the 'surface form', i.e., the morphophonologically complete word form. This does not exclude a dynamic generation of the full form *within* the lexical component.

s(yntactic)-form			p(honological)-form	
bǽ-diæ V	(↑ PRED)	= 'diæ⟨SUBJ⟩'	P-FORM	[bǽdiæ]
	(↑ TENSE)	= past	SEGMENTS	/b æ d i æ/
	(↑ ASPECT)	= punctual	METR. FRAME	$('\sigma\sigma\sigma)_\omega$
	...			
om PRON	(↑ PRED)	= 'pro'	P-FORM	[om]
	(↑ PERS)	= 1	SEGMENTS	/o m/
	(↑ NUM)	= sg	METR. FRAME	$=\sigma$
	(↑ CL-TYPE)	= set2		
	...			

Table 6: Lexical entries for *om* 'I' and *bǽ-diæ* 'saw'

While the s-form represents a typical lexical entry in LFG, the p-form adds information with respect to the phonological nature of the lexical entry, in particular it encodes the number of syllables (σ), lexical stress ('), and the metrical frame (a prosodic word $()_\omega$, or a clitic ($=\sigma$ for enclitic, $\sigma=$ for proclitic)).

Each dimension of the lexicon can only be accessed by the related module (c-structure can access the s-form, p-structure p-form), which ensures modularity. However, once a dimension is accessed, the associated dimensions become available as well and information can be transferred from one module to another. The *transfer of vocabulary* works both ways (and hence has a translatory function): During comprehension, p-structure accesses the related p-form, which in turn activates the associated s-form making it available to c-structure; during production, the process is reversed from c-structure to p-structure where the information associated with the p-form is syllablewise encoded in the p-diagram.

p(honological)-form	
P-FORM	[bǽdiæ]
SEGMENTS	/b æ d i æ/
METR. FRAME	$('\sigma\sigma\sigma)_\omega$
P-FORM	[om]
SEGMENTS	/o m/
METR. FRAME	$=\sigma$

↓ ↓ ↓

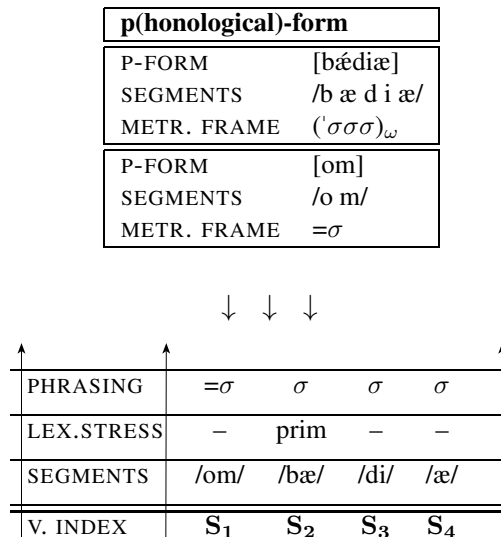| PHRASING	$=\sigma$	σ	σ	σ
LEX.STRESS	–	prim	–	–
SEGMENTS	/om/	/bæ/	/di/	/æ/
V. INDEX	S_1	S_2	S_3	S_4

Figure 6: Encoding the p-forms of example (25b) in p-structure

In addition to the transfer process at the word-level and below, the modules also

need to exchange information on prosodic and syntactic constituency, and intonation. This is accomplished via the *transfer of structure*.

4.3   The Transfer of Structure: from syntax to prosody

The *transfer of structure* directly associates c- and p-structure via the projection function ♮ (Figure 4) and exchanges information on syntactic and (higher) prosodic constituency. The assumptions made here roughly follow Selkirk (2011)'s MATCH THEORY for the higher constituents,[11] in that each IP/CP (here: S) matches an intonational phrase (ι) and each XP corresponds to a phonological phrase (φ). During production[12], the syntactic S-node will thus have the following annotation

$$\text{S}$$
$$(\natural(T(*))\ \text{S}_{min}\ \text{PHRASING}) =\ {}_{\iota}($$
$$(\natural(T(*))\ \text{S}_{max}\ \text{PHRASING}) =\ )_{\iota}$$

which can be read as "*For all terminal nodes (T) that are daughters of the current node (*=S), take the first (S_{min}) and the last syllable (S_{max}) and for the attribute* PHRASING *add a left and a right intonational phrase boundary (()$_{\iota}$) at these positions.*"

$$\text{S}$$
$$(\natural(T(*))\ \text{S}_{min}\ \text{PHRASING}) =\ {}_{\iota}($$
$$(\natural(T(*))\ \text{S}_{max}\ \text{PHRASING}) =\ )_{\iota}$$

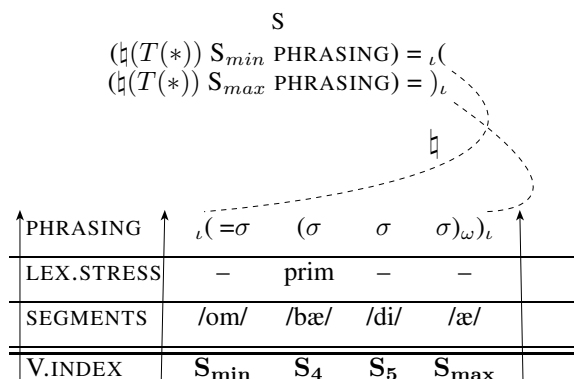| PHRASING	$_{\iota}($ =σ	(σ	σ	$\sigma)_{\omega})_{\iota}$
LEX.STRESS	–	prim	–	–
SEGMENTS	/om/	/bæ/	/di/	/æ/
V.INDEX	**S$_{min}$**	**S$_4$**	**S$_5$**	**S$_{max}$**

Figure 7: The *transfer of structure* for example (25b)

The p-diagram in Figure 7 depicts the result of the two transfer processes at the interface: the *transfer of structure* and the *transfer of vocabulary*. However, as noted before, the linear order predicted in syntax does not reflect the actual linear order of examples like (25b). The determination of the final linear order is based on prosodic constraints and is therefore the domain of p-structure, i.e., of (language-specific) postlexical phonology.

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[11]Note, however, that the model presented here is not limited to this approach, but can easily be adjusted to fit other approaches to the interface as well.

[12]See, e.g., Butt et al. (2017) for an analysis (of Urdu polar *kya*) during comprehension.

4.4 Postlexical phonological processes

Within p-structure, the initial input to p-structure created by the two transfer processes at the interface is scrutinized in phonological/prosodic terms. As the oblique enclitic is placed in the initial position of an intonational phrase, prosodic inversion applies and places the clitic after *bǽ*. However, since the clitic begins with a vowel, stress shifts from *bǽ* to the clitic, which consequently has to assume its full form.[13]

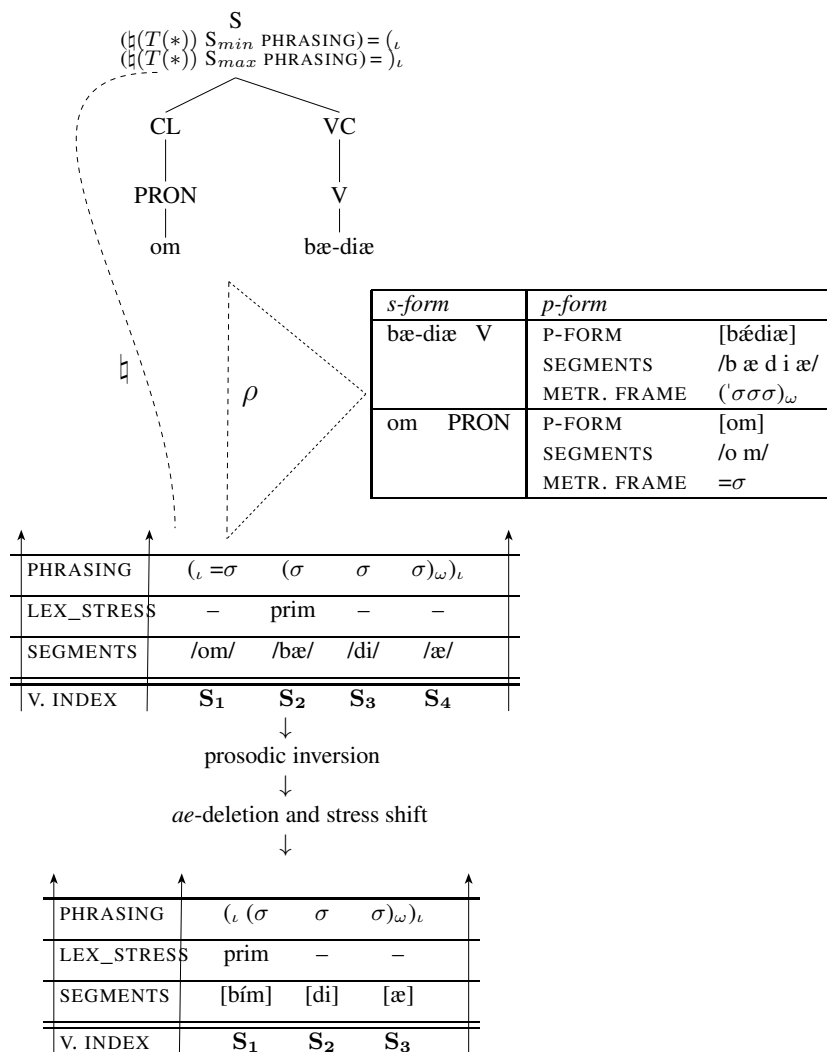|	
input (=s-string):	=om bǽdiæ
prosodic inversion:	bǽ=om=diæ
stress shift:	b-ím=diæ
output (=p-string):	b-ím=diæ

Table 7: Postlexical phonological processes in p-structure

While the input and output of p-structure are mostly congruent with respect to linear order, the approach presented here can a) account for the commonly found mismatches between syntactic and prosodic constituency in general, and b) can explain differences in the syntactic and phonological linear order, and even apparent violations of lexical integrity (if and only if the placement of an otherwise independent morphosyntactic item within another is prosodically motivated).

4.5 Vafsi oblique pronouns at the syntax-prosody interface - overview

The following figure gives a complete overview on the analysis of example (25b) from the perspective of production.

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[13]While the postlexical phonological rules applied here affect the 'lexical level' of the p-diagram, they cannot affect the 'interpretation level' (to which PHRASING belongs, see Bögel (2015) for details on the different levels of the p-diagram), as this would also misplace the left intonational boundary associated with the clitic's position (thanks to Jamie Findlay for noticing this).

S

$(\natural(T(*))\ \mathrm{S}_{min}\ \text{PHRASING}) = (_\iota$
$(\natural(T(*))\ \mathrm{S}_{max}\ \text{PHRASING}) =)_\iota$

CL   VC

PRON   V

om   bæ-diæ

$\natural$ ρ

s-form	*p-form*	
bæ-diæ V	P-FORM	[bǽdiæ]
	SEGMENTS	/b æ d i æ/
	METR. FRAME	$('\sigma\sigma\sigma)_\omega$
om PRON	P-FORM	[om]
	SEGMENTS	/o m/
	METR. FRAME	$=\sigma$

PHRASING	$(_\iota =\sigma$	$(\sigma$	σ	$\sigma)_\omega)_\iota$
LEX_STRESS	–	prim	–	–
SEGMENTS	/om/	/bæ/	/di/	/æ/
V. INDEX	$\mathbf{S_1}$	$\mathbf{S_2}$	$\mathbf{S_3}$	$\mathbf{S_4}$

$\downarrow$

prosodic inversion

$\downarrow$

ae-deletion and stress shift

$\downarrow$

PHRASING	$(_\iota (\sigma$	σ	$\sigma)_\omega)_\iota$
LEX_STRESS	prim	–	–
SEGMENTS	[bím]	[di]	[æ]
V. INDEX	$\mathbf{S_1}$	$\mathbf{S_2}$	$\mathbf{S_3}$

5 Conclusion

In this paper we showed that Vafsi oblique pronouns are clitics without an 'affixal counterpart' and that these clitics are not 'fronted' from (inside) the verb as claimed by previous research (Stilo, 2004a,b, 2010). We showed that the clitics originate at the position immediately preceding the verbal complex where they prosodically attach to a preceding host. However, if such a host is not available (either because the clitic is stranded in the sentence-initial position or is preceded by a sentence-medial prosodic boundary), the clitic can undergo prosodic inversion in which case it is placed following a suitable host to its right.

If prosodic inversion is impossible, the clitic has to remain in situ, assuming a stressed full form (the former 'affixal form') to account for its initial position within

a larger prosodic domain. The same stressed full form is assumed if the clitic undergoes prosodic inversion, but is then targeted by a postlexical phonological stress shift.

This interplay of the syntactic and prosodic module and of postlexical phonology can be modelled straightforwardly at the syntax-prosody interface as proposed in Bögel (2015). This approach not only allows for a unified analysis of Vafsi oblique pronouns as clitics, but can furthermore explain mismatches between syntactic and phonological linear order by means of prosodic constraints and postlexical phonology.

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