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Chapter 1

Clitic Climbing in Polish Tense Auxiliary Constructions

The aim of this paper is to account for the behaviour of Polish pronominal clitics in tense auxiliary constructions. In particular, we discuss the phenomenon known as clitic climbing (CC) and provide its HPSG account.

1.1 Tense Auxiliaries

Unlike Romance or Germanic languages, Polish employs only one tense auxiliary verb *być* 'be'. The future tense of imperfective verbs is formed with the strong form of the auxiliary:

(1.1)	Ty	będziesz	widział	ten	film.	'You will see this film.'
	you	will.be.2sg	seen	this	film	

As argued in Borsley and Rivero (1994), past tense, (1.2a), and conditional verbs, (1.2b), are formed with an auxiliary as well:

(1.2)	a.	Ty	**widział**	**-eś**	ten	film.	'You saw this film.'
		you	seen	AUX.2sg	this	film	
	b.	Ty	**widział**	**-byś**	ten	film.	
		you	seen	AUX-COND.2sg	this	book	
		'You would see this film.'					

Although *(e)ś* and *byś* in (1.2) look like verbal inflection, they can be detached from the verb and occur on (almost) any other preceding word,[1] (1.3) (see Booij and Rubach (1987) or (Spencer, 1991, ch.9) for more examples).

(1.3)	a.	Ty	**-ś**	**widział**	ten	film.	'You saw this film.'
		you	AUX.2sg	seen	this	film	
	b.	Ty	**byś**	**widział**	ten	film.	
		you	AUX-COND.2sg	seen	this	film	
		'You would see this film.'					

[1] Transitive prepositions and the verbal negative marker *nie* 'not' are the exceptions discussed in Borsley and Rivero (1994).

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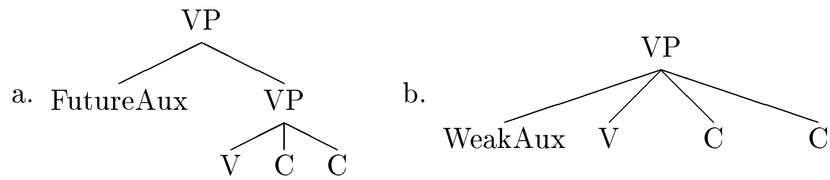
The behaviour of ‘floating inflections’ illustrated in (1.2) and (1.3), has been often discussed in the literature, e.g., Mikoś and Moravcsik (1986), Booij and Rubach (1987), Rappaport (1988), Spencer (1991), Borsley and Rivero (1994), Borsley (1999). We follow here Borsley and Rivero (1994) and Borsley (1999) and treat boldfaced forms in (1.2) and (1.3) as consisting of a weak auxiliary (a clitic) and a participle. Borsley (1999) treats differently verb forms in (1.2) and (1.3). The former are morphological compounds whereas the auxiliary and a participle form a syntactic construction in (1.3), i.e., they both are syntactic items. We largely agree with such an analysis but our view on the structure of auxiliary constructions is different.

Borsley (1999) represents weak auxiliaries as (subject-raising) syntactic verbs which subcategorize for a participle, similarly to the future tense auxiliary. He argues, however, that the future and weak auxiliaries should have different complementations. The former take a VP complement (a traditional hierarchical structure results, (1.4a)) while the latter form a complex predicate with the participle. Hence, weak auxiliaries subcategorize for a verbal complement (a participle) as well as its complements, which results in a flat syntactic structure, (1.4b) (similarly to French and Italian tense auxiliary constructions, cf. Abeillé and Godard (1994) and Monachesi (1998), respectively).

(1.4)



Such an analysis, however, makes incorrect predictions with respect to CC.

1.2 Clitic Climbing

CC is a cross-linguistic phenomenon associated with certain verbal environments. In some verbal contexts, a pronominal clitic can be realised on a verb different from that it semantically belongs to, e.g., (1.5).

(1.5) Będę go oglądał jutro.
will.be.1sg him$_{cl}$ watched tomorrow
‘I’ll be watching it/him tomorrow.’

In (1.5), the clitic *go* ‘it’ (lit. ‘him’) originates as an argument of the verb *oglądał* but is realised on the auxiliary rather than locally.

In Polish, unlike, e.g., in Romance, CC to tense auxiliaries is optional. As illustrated in (1.6), the argument clitic need not be realised on the future auxiliary and can remain ‘downstairs’.

(1.6) Będę oglądał go jutro.
will.be.1sg watched him$_{cl}$ tomorrow
'I'll be watching it/him tomorrow.'

The behaviour of Polish pronominal clitics with weak auxiliaries is analogous: clitics are facultatively realised on the auxiliary, cf. (1.7).

(1.7) a. Często -ś go widywał przedtem.
often AUX.2sg him$_{cl}$ seen before
'You saw it/him often before.'

b. Często -ś widywał go przedtem.

(1.8) a. Chętnie bym go obejrzał jutro.
willingly AUX-COND.1sg him$_{cl}$ watched tomorrow
'I would like to watch it/him tomorrow.'

b. Chętnie bym obejrzał go jutro.

Also if there are several clitics, they occur on the auxiliary only optionally, cf. (1.9). It seems, however, that in auxiliary constructions all clitics must be realised on the same verb, cf. (1.9c–d). Properties of CC in the conditional and future tense auxiliary constructions are analogous.

(1.9) a. Bardzo -ś przestraszył się go wczoraj.
very AUX.2sg feared self$_{cl}$ him$_{cl}$ yesterday
'He frightened you very much yesterday.'

b. Bardzo -ś się go przestraszył wczoraj.

c. ?? Bardzo -ś się przestraszył go wczoraj.

d. * Bardzo -ś go przestraszył się wczoraj.

Polish pronominal clitics are syntactic items. They do not form a prosodic word with the host, Rappaport (1988), can be elided, do not have a fixed position in a sentence and are promiscuous, (Spencer, 1991, ch.9). Therefore, if we adopt Borsley's (1999) analysis of auxiliaries, CC in the future tense constructions, (1.4a), shouldn't be possible (complements are not raised to the auxiliary). According to (1.4b), all clitics should occur on weak auxiliaries rather than on the participle. As (1.5)–(1.9) show, these expectations are not born out: all types of auxiliaries trigger CC only optionally.

The main argument put forward in Borsley (1999) for two structures given in (1.4), is the contrast in (1.10).

(1.10) a. * Widział książkę -ś / byś.
seen book AUX.2sg COND-AUX.2sg
'You saw/would see the book.'

b. Widział książkę będziesz.
seen book will.be.2sg
'You will see the book.'

This contrast apparently shows that in (1.10a), unlike in (1.10b), there is no constituent to be preposed. Since Polish is a 'free' word order language and various permutations are possible, it is not clear whether the participle does form a constituent with its complement in (1.10b). Other traditional constituency tests, e.g., coordination or pronominalization, do not distinguish the complementation of weak and future auxiliaries. Moreover, contrasts similar to (1.10) are also observed in the behaviour of pronominal clitics:

(1.11) Zaprosimy jutro jego / *go na kolację.
will-invite-we tomorrow him him$_{cl}$ on dinner
'We will invite him for dinner tomorrow.'

The contrast in (1.11) cannot be explained analogously to (1.10). The pronominal clitic is not a head of VP while the sequence *zaprosimy jutro* 'we will invite tomorrow' does not form a constituent. Instead, we attribute contrasts in (1.10) and (1.11) to a restriction on linear positions of Polish clitics. We exclude the ungrammatical (1.10a) by a linear precedence constraint.

Note that CC cannot be attributed to word order alone. Due to Polish 'free' word order, one might say that a clitic, e.g., in (1.5), only linearly precedes the participle and no syntactic climbing to the auxiliary takes place. In such a case, however, the grammatical examples as in (1.12) would not be accounted for.

(1.12) Oglądał jutro będę go w TV.
watched tomorrow will.be.1sg him$_{cl}$ in TV
'I'll be watching it/him tomorrow on TV.'

If the clitic were realised as the argument of the participle (and not of the auxiliary), *go* would be separated by non-clitics from the verb it is realised on. Since such a position is not possible in general, see (1.11), (1.12) would be predicted ungrammatical, contrary to fact. Obviously, a similar argument for a syntactic CC cannot be applied to weak auxiliaries. Auxiliary clitics always precede the participle,[2] cf. (1.10a) and therefore equivalents of (1.12) with weak auxiliaries are ungrammatical:

(1.13) * Oglądał często m / bym go w TV.
watched often AUX.1sg AUX-COND.1sg him$_{cl}$ in TV
'I was/would be watching it/him often on TV.'

It seems to be no explicit evidence for a syntactic CC in weak auxiliary constructions. Thus, one may argue that in weak, unlike future tense, auxiliary

[2] As argued in Borsley (1999), the participle forms a morphological compound with the auxiliary in (1.2). Therefore their relative order here is predicted by morphology rather than syntax.

constructions no syntactic CC occurs. This could require, however, distinct syntactic structures for auxiliary constructions. As mentioned above, such a difference is not observable. Thus, we assume that CC to weak auxiliaries is syntactic as well.

1.3 HPSG Analysis

We follow Sag (1997), Bouma *et al.* (1997), Miller and Sag (1997) and Abeillé *et al.* (1998) and split the *synsem* type into *canonical* and *non-canonical* subtypes. As said above, we treat weak auxiliaries (following Borsley (1999)) and pronominal clitics as syntactic items. Since Polish clitics correspond to *sign*s, we represent them via a *clitic* type, a subtype of *canonical*, see (1.14).

(1.14)

synsem

non-canonical *canonical*

non-clitic *clitic*

We do not introduce additional subtypes of *clitic* for pronominal and verbal clitics. They are represented as (pro)nouns and verbs, respectively, but their SYNSEM value is *clitic* (rather than *non-clitic* as would be for autonomous words).

We represent Polish pronominal clitics on the COMPS list, i.e., the list of complements which are combined with the head in the syntax. Apart from the reflexive clitic, which is always introduced lexically, see Kupść (1999), personal clitics and other NPs can be used interchangeably. Since the value of COMPS is specified as a list of *synsem*s, both *clitic*s and *non-clitic* elements can occur here. These are syntactic principles and ID schemata which remove pronominal clitics from COMPS, rather than lexical mechanisms as in the analyses of Romance in Monachesi (1995, 1997, 1998), Miller and Sag (1997), Abeillé *et al.* (1998).

In order to account for CC,[3] we assume that realisation of (syntactic) pronominal clitics can be independent of realisation of non-clitics.[4] Since there are no strong arguments in favour of two distinct complementations in (1.4), we assume that all auxiliary constructions have the same type of syntactic structure. We assume the following subcategorization frame for all auxiliaries:

[3] Since Polish pronominal clitics are syntactic items, syntactic CC must be reflected in the syntactic structure of auxiliary constructions, i.e., encoded in terms of VALENCE attributes rather than only at the ARG-ST level.

[4] We make a similar assumption in Kupść (1999) in order to account for the behaviour of the Polish reflexive clitic *się* 'self' in the so-called verb clusters.

(1.15)
$$\left[\begin{array}{l} \textsc{head}\ \textit{verb}[\textsc{aux}+] \\ \textsc{subj}\ \boxed{1} \\ \textsc{comps}\ \left\langle \left[\begin{array}{l} \textsc{head}\ \textit{verb}[\textsc{vform}\ \textit{part}] \\ \textsc{subj}\ \boxed{1} \\ \textsc{comps}\ \boxed{2} \end{array}\right] \right\rangle \oplus \boxed{2} \end{array}\right]$$

Unlike in Borsley (1999), the value of the participle's COMPS list, i.e., $\boxed{2}$, is underspecified. This allows us to encode the fact that pronominal clitics can raise independently of non-clitic complements. Assuming that auxiliary constructions have a hierarchical structure, i.e., an auxiliary subcategorizes for a VP, we replace the Immediate Dominance Schema of Pollard and Sag (1994), which combines a lexical head and complements, with (1.16):

(1.16)
$$\textit{phrase} \rightarrow \left[\begin{array}{l} \textsc{synsem}|\textsc{loc}|\textsc{cat}|\textsc{val}|\textsc{comps}\ \textit{list}(\textit{clitic}[\textsc{loc}|\textsc{cont}\ \textit{pron}]) \\ \textsc{dtrs}\ \left[\begin{array}{l} \textit{head-comp-struc} \\ \textsc{head-dtr}\ \textit{word} \\ \textsc{comp-dtrs}\ \textit{list}(\textit{sign}) \end{array}\right] \end{array}\right]$$

This constraint licenses phrases which may have a certain number of (pronominal) clitics unrealised. Such a phrase is necessary to account for CC in a hierarchical structure, i.e., if an auxiliary combines with a VP which has unrealised clitics as in (1.5). Observe that the COMPS value can be any list which consists of *clitic*[LOC|CONT*pron*] elements. In particular, this list can be empty if all pronominal clitics (if there are any) are realised. In this case, (1.16) is equivalent to the traditional schema of Pollard and Sag (1994). Hence, the local realisation of clitics in a hierarchical structure is also accounted for, see (1.6). The constraint on *clause*s will ensure saturation of all (clitic and non-clitic) syntactic complements within a clause:

(1.17)
$$\textit{clause} \rightarrow \left[\ \textsc{synsem}|\textsc{loc}|\textsc{cat}|\textsc{val}|\textsc{comps}\ \langle\rangle\ \right]$$

As shown in (1.9), in auxiliary constructions all clitics must be realised on the same verb (an auxiliary or a participle). We obtain this by the following lexical constraint:[5]

(1.18)
$$\left(\left[\begin{array}{l} \textit{word} \\ \textsc{head}\ \textit{verb}[\textsc{aux}+] \vee [\textsc{vform}\ \textit{part}] \\ \textsc{comps}\ \textit{list}\left(\left[\begin{array}{l} \textit{arg} \\ \textsc{arg}\ \textit{non-cl} \end{array}\right]\right) \bigcirc \boxed{1} \end{array}\right] \ \& \right.$$
$$\left. \text{member}\left(\left[\begin{array}{l} \textit{arg} \\ \textsc{arg}\ \left[\begin{array}{l} \textit{clitic} \\ \textsc{loc}|\textsc{cont}\ \textit{pron} \end{array}\right] \\ \textsc{real}\ + \end{array}\right], \boxed{1}\ \text{list}\left(\left[\begin{array}{l} \textit{arg} \\ \textsc{arg}\ \left[\begin{array}{l} \textit{clitic} \\ \textsc{loc}|\textsc{cont}\ \textit{pron} \end{array}\right] \end{array}\right]\right)\right)\right)$$

[5]We use *arg* rather than *synsem*s here in order to distinguish realised ([REAL+]) from unrealised ([REAL−]) *arg*uments, cf. Przepiórkowski (1999). The relation '$\bigcirc$' is used to 'shuffle' elements of several lists preserving order between members of original lists, as in shuffling a deck of cards, cf. Reape (1992). The 'member' relation is a usual list membership relation.

$$\rightarrow \boxed{1}\text{list}(\begin{bmatrix} \textit{arg} \\ \text{ARG} \begin{bmatrix} \textit{clitic} \\ \text{LOC}|\text{CONT} \; \textit{pron} \end{bmatrix} \\ \text{REAL} \; + \end{bmatrix})$$

Finally, the LP constraint in (1.19) excludes incorrect positions of weak auxiliaries such as (1.10a).

(1.19) $$\begin{bmatrix} \textit{dom\_obj} \\ \text{SYNSEM} \begin{bmatrix} \textit{clitic} \\ \text{HEAD} \; \textit{verb}[\text{AUX} \; +] \\ \text{COMPS} \; \boxed{1} \bigcirc \langle \boxed{2} \rangle \end{bmatrix} \end{bmatrix} \prec \begin{bmatrix} \textit{dom\_obj} \\ \text{SYNSEM} \; \boxed{2} \begin{bmatrix} \textit{non-clitic} \\ \text{HEAD}|\text{VFORM} \; \textit{part} \end{bmatrix} \end{bmatrix}$$

This constraint differs from that proposed in Borsley (1999). Instead of requiring a lexical participle verb to be ordered with respect to *any* auxiliary, (1.19) refers only to weak auxiliaries (*clitic*s) and does not require the participle to be lexical. Note that (1.19) is formulated in terms of *dom_obj*s (objects used to encode linear order in HPSG, cf. Kathol (1995)) and need not refer to syntactic constituents directly. Due to such a representation of linear order, the syntactic structure of auxiliary constructions is in principle inessential for (1.19).

Since in HPSG LP constraints are encoded as general well-formedness conditions, they apply to all *sign*s. Therefore, by (1.19), whenever an auxiliary clitic is separated from the participle, it must precede the latter. Hence, preverbal clitic positions as in (1.3) are licensed.

1.4 Summary

In this paper, we presented a syntactic HPSG analysis of CC in Polish auxiliary constructions. We re-addressed the issue of complementation of Polish auxiliaries discussed recently in Borsley (1999). The behaviour of pronominal clitics turned out to be incompatible with his analysis. We proposed an approach which assumed the same subcategorization frame for all auxiliaries. In particular, CC was accounted for without requiring a general restructuring process to take place. We accounted for the distinct properties of auxiliaries, explained in Borsley (1999) on syntactic grounds, at the linear level. The representation of linear order we adopted encodes LP principles in a more flexible way and avoids a direct reference to the syntactic structure.

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