A Lexical Account of Clitic Climbing in Polish

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The so-called clitic climbing (CC) is a cross-linguistic phenomenon present in many Romance but also Slavic languages. In certain verbal environments, a clitic can be realised as an argument of a governing verb rather than the verb it semantically belongs to.[1]

(1) Piotr *go* chce kupić w Austrii.
Peter him_{cl} wants buy_{inf} in Austria
'Peter wants to buy it in Austria.'

In (1), the clitic *go* 'it' (lit. 'him') originates as an argument of the infinitive *kupić* 'to buy' but it 'climbs' to the main verb *chce* 'wants' instead of being realised locally.

CC in Polish is a rather neglected phenomenon. Although not the principal topic of their interest, CC has been discussed in Dyła (1983), Rappaport (1998), and esp. Witkoś (1996, 1998). The aim of this paper is to discuss CC in the complementizerless verbal complexes (verb clusters (VC)) in Polish and provide an HPSG (Head-driven Phrase Structure Grammar, Pollard and Sag (1994)) account of CC in VC.[2,3]

First, we show that pronouns such as *go* in (1) are (syntactic) clitics. Next, we have a closer look at environments where CC is possible and then, we describe the behaviour of clitics in VC as well as the corresponding properties of VCs. Finally, we provide an HPSG analysis of the presented data.

1 Polish Pronominal Clitics

Polish personal pronouns may occur in two forms: weak and strong. They can be morphologically distinct, as in (2), but most weak pronominals double as strong forms, Rappaport (1988), (Spencer, 1991, ch.9).

(2) a. Jan *go* / jego zobaczył.
John him_{weak} him_{strong} saw
'John saw him.'

b. Chętnie *mu* / jemu pomagamy.
willingly him_{weak} him_{strong} help-we
'We help him willingly.'

Polish weak pronouns are clitics, i.e., prosodically deficient items. As discussed in Witkoś (1996, 1998) and Kupść (1999f), weak pronominals are unstressed, they never occur alone, and cannot begin a sentence.

[1]For ease of reference, in examples clitics are written in *italics* throughout the paper.

[2]I wish to thank the audiences at the Formal Grammar conference, August 1999 and at the Generative Linguistics in Poland workshop, November 1999 for useful comments and discussion. This paper is a revised version of Kupść (1999c) which has been completed before my first presentation.

[3]Data presented in this paper do not deal with all aspects of CC in Polish VC. First, they do not take into account the so-called haplology of the reflexive marker *się* 'self'. This phenomenon has been discussed, e.g., in Rappaport (1998) and Kupść (1999d). Second, CC in Polish is more constrained than presented here: clitic arguments of a 'lower' verb cannot climb over clitic arguments of the 'higher' verb. We deal with this issue in Kupść (1999g).

As observed in Witkoś (1996, 1998), Polish pronominal clitics have also other properties of deficient items specified in Cardinaletti and Starke (1994). Unlike strong pronouns, clitics cannot be conjoined with other NPs, (3a), do not allow any adverbial modification, (3b), and may refer either to animate or non-animate objects, (3c).

(3) a. Matka spotkała jego / **go* i Marię.
mother met him him$_{cl}$ and Mary
'Mother met him and Mary.'

b. Wczoraj widziałem nawet jego / **go* w teatrze.
yesterday saw-I even him him$_{cl}$ in theater
'Yesterday I saw even him in the teater.'

c. Widzieliśmy jego / *go* wczoraj w Apollo.
saw-we him it$_{cl}$/him$_{cl}$ yesterday in Apollo
'We saw him / it yesterday in Apollo.'

Moreover, we adopt arguments presented in Kupść (1999f) and treat Polish pronominal clitics as syntactic items (postlexical clitics, in the terminology of Miller (1992)). The syntactic status of Polish clitics is supported by phonology (there is an inter-word voicing sandhi between a clitic and its host, e.g., Dukiewicz and Sawicka (1995)), prosody (a clitic does not form a prosodic lexical unit with the host), ellipsis (clitics can be elided), promiscuity and a relatively free placement. On the basis of similar arguments, the Polish reflexive marker *się* 'self' is also a (syntactic) clitic, as argued in Kupść (1999d).

2 Environments for CC in Polish

Cross-linguistically, CC is possible only in certain environments. In Italian, CC is possible with 'restructuring verbs', cf. e.g., Rizzi (1982), while in French, causative verbs such as *faire* 'make', may attract clitic arguments of their infinitive complements, cf. e.g., Kayne (1975).[4] In Polish, CC is possible in the infinitival verbal complexes, such as (1), which we call here verb clusters (VC).

As (4) shows, CC does not occur just in any infinitive environment: the presence of the complementizer which introduces the infinitive subordinate clause blocks CC.[5]

(4) * Piotr chce *go*, żeby zaprosić na kolację.
Peter wants him$_{cl}$ COMP invite$_{inf}$ on dinner
'Peter wants to invite him for dinner.' (putatively)

Furthermore, as observed in Dyła (1983), not all VCs behave uniformly with respect to CC. If the subject control verb, e.g., *chcieć* 'want' or *przestać* 'stop' has no nominal argument itself, CC is possible, see (1). Certain subject control verbs may optionally occur with an NP complement, e.g., *obiecać* or *przyrzec*+NP[dat] 'promise'. In this case, CC is allowed only if this nominal complement is unrealised, see the contrast in (5).

(5) a. Marek *go* obiecał zaprosić.
Mark him$_{cl}$ promised-he invite$_{inf}$

[4]Additionally, in both languages (as well as in Polish) CC occurs in tense auxiliary constructions. We do not consider here CC to auxiliaries in Polish but see Kupść (1999b,a).

[5]In (4)–(7), *go* 'him' is a semantic argument of the 'lowest' infinitive.

'Mark promised to invite him.'

b. * Marek obiecał *go* Joli zaprosić.
Mark promised him_{cl} Jola_{dat} invite_{inf}
'Mark promised Jola to invite him.'

Some object control verbs, such as *uczyć* +NP[acc] 'teach' or *przeszkadzać* +NP[dat] 'prevent' do not allow CC, either, (6a). It might seem that it is the presence of a nominal argument that blocks CC in (5b) and (6a). Note, however, that 'causative' or 'prohibitive' (object control) verbs, such as *kazać* +NP[dat] 'order' or *zabronić* +NP[dat] 'forbid' in (6b), do allow CC although they have a nominal argument.

(6) a. * Chciał przeszkodzić *go* Piotrowi zaprosić.
wanted-he disturb_{inf} him_{cl} Peter_{dat} invite_{inf}
'He wanted to prevent Peter from inviting him.'

b. Jan powinien kazać / zabronić *go* Piotrowi zapraszać.
John ought order_{inf} forbid_{inf} him_{cl} Peter_{dat} invite_{inf}
'John ought to order/forbid Peter to invite him.'

Also the behaviour of (subject) raising verbs[6] does not conform to the view that the presence of a nominal argument always prohibits CC. The subject raising verb *wydaje się* 'seems' in (7) obligatorily occurs with the clitic *się* 'self', which nevertheless does not stop CC.

(7) Maria *się* *go* wydaje nie poznawać.
Mary self_{cl} him_{cl} seems not recognize
'Mary seems not to recognize him.'

As the contrast between the grammatical (6b)–(7) and the ungrammatical (5b)–(6a) indicates, the presence of a nominal argument is not *per se* an obstacle for CC. (This seems, however, to be the blocking factor for CC to subject control verbs, see (5).) Moreover, the verbs which (do not) allow CC do not form a uniform semantic class. For example, both *przeszkodzić* 'prevent', (6a), and *zabronić* 'forbid', (6b), have a (dative) nominal argument and are 'prohibitive' (object control) verbs but only the former disallows CC. Since there seems to be no common syntactic or semantic characteristics of all verbs which allow / disallow CC, we assume that such verbs are enumerated in the lexicon.

3 Properties of CC in Polish VC

As (8) illustrates, CC in Polish VC is optional. A clitic can be either realised locally, (8a), or climb to a governing verb, (8b–c) (from (Witkoś, 1998, p.192)).

(8) a. Jan chciał obudzić *go* o szóstej.
John wanted wake_{inf} him_{cl} at six
'John wanted to wake him up at six.'

b. Jan chciał *go* obudzić o szóstej.

c. Jan *go* chciał obudzić o szóstej.

[6]According to Dziwirek (1994), Polish has no object raising verbs.

Moreover, if an infinitive complement has several clitic arguments, they need not appear on the same verb, (9a) (*się* 'self' and *go* 'him' are arguments of the inherently reflexive *bać się* 'fear'). As (9b) shows, this behaviour is optional and all clitics can be realised on the same verb as well.

(9) a. Jan chce *się* przestać *go* bać.
John wants self_{cl} stop_{inf} him_{cl} fear_{inf}
'John wants to stop being afraid of him.'

b. Jan chce *się go* przestać bać.

The previous two facts have been noted in Witkoś (1996, 1998). Additionally, Kupść (1999c) observes that in Polish, the inherent (reflexive) clitic climbs as other clitics do, see (9) (*się* is the inherent clitic of the verb *bać się* 'to fear'). Not only can the inherent clitic climb but once raised, it does not force realisation of its clitic co-arguments on the same verb, (9a) and (10) (*się* 'self' and *mu* 'him' are arguments of the inherently reflexive *przyglądać się* 'look at').

(10) Jan chce *mu* przestać *się* przyglądać.
John wants him_{cl} stop_{inf} self_{cl} look_{inf}-at
'John wants to stop looking at him'

In Romance, CC is associated with other 'clause union' effects, which results in postulating a flat syntactic structure for CC environments, e.g., Monachesi (1995, 1999), Abeillé *et al.* (1998). In Polish, the syntactic structure of VC is not clear. On one hand, negation, case assignment, anaphora binding and scrambling show monoclausal properties of VCs, but on the other hand, the optionality of these phenomena may argue for retaining multi-clausal characteristics of VC, e.g., Dziwirek (1994), Witkoś (1998), and esp. Przepiórkowski (1999,2000) for optional case assignment. Traditional constituency tests are indecisive here: they neither independently confirm nor refute a flat or hierarchical structure of Polish VCs. Similarly, coordination, pronominalization or preposing constituency tests do not clearly distinguish between VC with and without CC.[7] In Kupść (1999d,c), we accounted for optionality of CC assuming that clitics may be raised independently of other arguments. At present, we subscribe to a more general view presented in Przepiórkowski (1999,2000). On the basis of the optionality of case assignment in VC, he argues that not only clitics but just any argument can be optionally raised to a governing verb in VC. Such an extension allows one to capture both mono- and multiclausal properties of VC.

Since Polish is a relatively free word order language, CC might be seen as a result of linear order without a syntactic climbing taking place. On the basis of (1) and (5)–(10), clitics could be required to either precede the verb they originate from, e.g., (1), (5a), (6b), (7), (8b–c), (9)–(10), or immediately follow this verb, (8a). In fact, these are the only possible linear positions for clitics in simple clauses, cf. Witkoś (1996, 1998) and Kupść (1999f). However, as discussed in Rappaport (1998), such an analysis would not be able to handle the contrast in (11).

(11) a. Bać zaczniemy *się* po wyborach.
fear_{inf} begin-we self_{cl} after elections
'We will begin to be afraid after the elections.'

b. * Boimy zacząć *się* wybory.
fear-we begin_{inf} self_{cl} elections
'We are afraid to start the elections.'

[7]We do not consider here the influence negation has on CC; see Przepiórkowski (2000).

In (11a), the clitic argument of *bać* can be separated from this verb by another verb which is impossible in (11b). If there was no syntactic CC, both sentences should have the same grammatical status, contrary to facts.

4 An HPSG Analysis

As said in §1, we treat Polish pronominal clitics as syntactic items. Nevertheless, both syntactic and semantic properties of clitics distinguish them from other nominals, cf. Witkoś (1998). In HPSG, syntactic and semantic properties of an object are encoded in the *synsem* type. Thus, this is a natural place to encode clitic vs. non-clitic distinction, and we introduce *clitic* and *non-clitic* as subtypes of *synsem*.[8]

Note that there is no separate subtype corresponding to pronominal clitics. In the current setup, (pronominal) clitics are nominal objects and retain usual properties of NPs, such as referentiality, case, person, number, gender, etc. Simultaneously, however, one may easily encode information specific only for clitics. A schematic lexical entry for the clitic *go* 'it/him' is given in (12).

(12)
$$
\left[\begin{array}{ll}
\textit{word} & \\
\text{PHON} & \textit{go} \\
\text{SYNSEM} & \left[\begin{array}{ll}
\textit{clitic} & \\
\text{LOC} & \left[\begin{array}{ll}
\textit{local} & \\
\text{CAT} & \left[\begin{array}{ll}
\textit{category} & \\
\text{HEAD} & \left[\begin{array}{l} \textit{noun} \\ \text{CASE } \textit{gen} \vee \textit{acc} \end{array}\right] \\
\text{SUBJ} & \langle\rangle \\
\text{COMPS} & \langle\rangle \\
\text{ARG-ST} & \langle\rangle
\end{array}\right] \\
\text{CONT} & \left[\begin{array}{ll}
\textit{ppron} & \\
\text{INDEX} & \left[\begin{array}{l} \textit{ref} \\ \text{NUMBER } \textit{sg} \\ \text{PERSON } \textit{3} \\ \text{GENDER } \textit{masc} \vee \textit{neut} \end{array}\right]
\end{array}\right]
\end{array}\right]
\end{array}\right]
\end{array}\right]
$$

We assume that the Polish reflexive marker *się* is always introduced in the lexicon into the subcategorization frame of the verb: via lexical rules, for impersonals and middles, or directly in the lexical entry, e.g., for inherent reflexives, cf. Kupść (1999d,e).[9] However, no lexical mechanisms are necessary to ensure the correct representation of other pronominal clitics. All Polish pronominal clitics are treated on a par with syntactic complements, i.e., as elements of COMPS.[10] The value of COMPS is specified as a list of *synsem*s. Thus, both *clitic* and *non-clitic* elements can occur here. Being syntactic items, Polish pronominal clitics are removed from the COMPS list via general syntactic principles, i.e., the Valence Principle and ID schemata. No special mechanisms are necessary.

[8]Polish pronominal clitics are syntactic items and the type *clitic* is a subtype of *canonical* (*synsem*) on a par with *non-clitic*s. Thus, the representation of Polish clitics differs from that for their French counterparts proposed in Miller and Sag (1997). French clitics are considered affixes and are represented as *non-canonical* objects, in contrast to non-clitics which are *canonical*.

[9]Also the French / Italian reflexive marker *se* / *si*, is always introduced in the lexicon in HPSG analyses of Abeillé *et al.* (1998) and Monachesi (1995, 1999), respectively. As said in fn. 8, however, Romance pronominal clitics are affixes and they are also realised in the lexicon, unlike their Polish equivalents.

[10]Unlike in Kupść (1999d), we do not use an additional valence attribute to encode the syntactic requirement for *się*. However, Polish verbs may occur with at most one *się* (haplology, e.g., Rappaport (1998), Kupść (1999d)) and we assume that the verb's COMPS may contain at most one such clitic, i.e., a *clitic* NP which has the *anaphoric* type as its CONTENT value.

As noted in §2, CC in Polish is allowed only with certain verbs, cf. (5)–(7). Thus, these verbs are enumerated in the lexicon and the (im)possibility of CC has to be encoded in their lexical entries. In HPSG, CC has been often modelled via the argument composition mechanism à la Hinrichs and Nakazawa (1990). This mechanism allows one to treat unrealised arguments of a 'lower' verb as additional arguments of the 'higher' verb. Such a 'raising' is encoded via structure sharing (token-identity) of arguments of both verbs.

In this paper, we follow Przepiórkowski (2000) and assume that all Polish verbs which subcategorize for a bare infinitive complement may optionally 'inherit' unrealised arguments of this complement. Thus, these verbs must satisfy the following general description.

$$(13)\quad \begin{bmatrix} \textit{word} \\ \ldots|\textsc{head}\ \textit{verb} \\ \ldots|\textsc{arg-st}\ \langle \ldots, \begin{bmatrix} \ldots|\textsc{head}\ \textit{inf} \\ \ldots|\textsc{comps}\ \boxed{1} \end{bmatrix} \rangle \oplus \boxed{1}\,\textit{list(synsem)} \end{bmatrix}$$

(13) says that if a verb subcategorizes for an infinitive complement (in the case of *word*s, ARG-ST is usually the concatenation of word's valence attributes, i.e., SUBJ and COMPS, in this order, but see, e.g., Manning and Sag (1999)), (unrealised) complements of the infinitive, i.e., $\boxed{1}$, are raised to (structure shared with) the main verb.

Note that in (13) the value of $\boxed{1}$ is left unspecified, i.e., it can be any list of *synsem*s. In particular, this list can be empty if all complements of the infinitive are realised, e.g., if the main verb combines with an infinitive phrase. Since COMPS is appropriate for *word*s and *phrase*s, the infinitive complement can be either lexical or phrasal and (13) is compatible with both types of complementation.

Let us come back to CC and see how (13) interplays with the data in §§2 and 3. Only verbs which subcategorize for a bare infinitive allow for CC, see (1) vs. (4). Therefore, these verbs satisfy (13), which allows them to inherit complements. In particular, the verb *kazać* 'order' in (6b) has the lexical entry as in (14).[11]

$$(14)\quad \begin{bmatrix} \textit{word} \\ \textsc{phon}\ \textit{kazać} \\ \ldots \begin{bmatrix} \textsc{head}\ \textit{verb} \\ \textsc{arg-st}\ \langle NP[nom], NP[dat] \rangle \oplus \langle \begin{bmatrix} \ldots|\textsc{head}\ \textit{inf} \\ \ldots|\textsc{comps}\ \boxed{1} \end{bmatrix} \rangle \oplus \boxed{1}\,\textit{list(synsem)} \end{bmatrix} \end{bmatrix}$$

According to (14), the verb *kazać* inherits all unrealised complements of its infinitive complement, including clitics (if any). The COMPS value is specified generally as a list of *synsem*s. Thus, it may contain also *clitic*s, a subtype of *synsem*.

On the other hand, verbs such as *przeszkodzić* 'prevent' in (6a) take an infinitive complement as well, i.e., they conform to (13), but they do not allow CC. This, however, is not a problem for our analysis due to the split of the *synsem* type. In its lexical entry, the verb *przeszkodzić* will be specified to inherit only *non-clitic* complements rather than just any unrealised complement as in (14). The lexical entry for *przeszkodzić* is given in (15).

$$(15)\quad \begin{bmatrix} \textit{word} \\ \textsc{phon}\ \textit{przeszkodzić} \\ \ldots \begin{bmatrix} \textsc{head}\ \textit{verb} \\ \textsc{arg-st}\ \langle NP[nom], NP[dat] \rangle \oplus \langle \begin{bmatrix} \ldots|\textsc{head}\ \textit{inf} \\ \ldots|\textsc{comps}\ \boxed{1} \end{bmatrix} \rangle \oplus \boxed{1}\,\textit{list(non-clitic)} \end{bmatrix} \end{bmatrix}$$

[11]The lexical entry for *chcieć* 'want' as in (5a), will be analogous but this verb has no nominal (dative) object itself and the NP[dat] element will be dropped from its ARG-ST. The first (nominative) NP on ARG-ST in (14) corresponds to the subject.

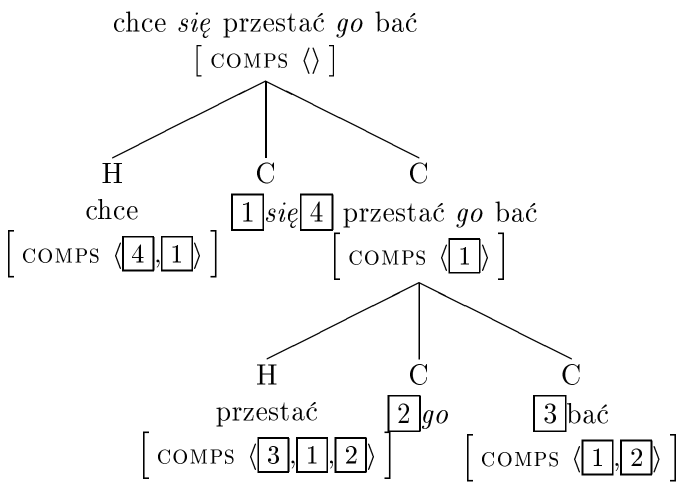
Finally, subject control verbs block CC if they have an overt nominal complement, e.g., *obiecał* in (5). We will assume that such verbs follow the general pattern in (13), i.e., in principle raising of any complement is possible. The ungrammaticality of (5b) will be blocked by a constraint on all subject control verbs which restricts inherited complements to be non-clitics in case the subject control verb has an overt nominal complement.

Apart from the lexical specification discussed above, we have to provide principles responsible for syntactic realisation of clitics (and other arguments). We follow Przepiórkowski (2000) and assume a version of the Valence Principle which cancels elements from the COMPS list in an arbitrary number and order. Therefore, the order of elements on the valence attributes reflects obliqueness of these elements but not necessarily the order in which they are realised. Due to such a relaxation of the Valence Principle, we have to license phrases with a number of complements unrealised. In (16), we propose a syntactic ID schema which combines the head with an arbitrary number of its complements.

(16) $$phrase \rightarrow \left[\begin{array}{ll}\textsc{synsem}|\textsc{loc}|\textsc{cat}|\textsc{comps} & \textit{list(synsem)} \\ \textsc{dtrs} & \left[\begin{array}{l} \textit{head-comp-struc} \\ \textsc{head-dtr}\ \textit{word} \\ \textsc{comp-dtrs}\ \textit{list(sign)} \end{array}\right]\end{array}\right] \vee \ldots$$

Unlike in Pollard and Sag (1994), the COMPS value of the resulting phrase is a list of *synsem* objects. Thus, a phrase may have a number of complements unrealised. Since *clitic* is a subtype of *synsem*, the unrealised complements can be clitics as well. (16) and lexical specifications such as in (14) will account for CC in (1), (5a), (6b), (7), (8b–c). Nothing forces clitics to be realised on the same verb and, hence, (9), (10) can be also obtained. A schematic analysis of (9a) is given in (17).

(17)



Note that the COMPS value in (16) is any list of *synsem*s. In particular, it can be empty (as in the traditional schema 2 of Pollard and Sag (1994)). Hence, clitics can be realised locally as well, (8a).

Finally, we assume that every clause[12] must satisfy the constraint:

(18) $$clause \rightarrow \left[\ \textsc{synsem}|\textsc{loc}|\textsc{cat}\ \left[\ \textsc{comps}\ \langle\rangle\ \right]\right] \vee \ldots$$

(18) ensures that in a clause no complements can remain unrealised. Note that without (18), nothing would rule out (19).

[12] Crucially, we do not consider infinitives in VC to head **clauses**, in contrast to subordinate clauses as in (4).

(19) * Chciał przestać *go* bać.
wanted-he $stop_{inf}$ him_{cl} $fear_{inf}$
'He wanted to stop being afraid of him.' (putatively)

Due to (16), the phrase *przestać go bać* (missing the clitic *się*) is ruled in. According to (14), the unrealised clitic *się* (see $\boxed{1}$ in (17)), is inherited by the verb *chciał*. Then, if the clitic is missing, the phrase (and the sentence) *chciał przestać go bać* is also grammatical (due to (16)). This is only by (18) that (19) is ruled out.

5 Summary

In this paper we presented a syntactic analysis of CC in Polish VC. We treat Polish pronominal clitics as syntactic items which are nevertheless distinct from other nominals. As in many other languages, CC in Polish is possible only in certain environments. Although the precondition for CC can be syntacticly specified, i.e., CC occurs with verbs which subcategorize for bare infinitive complements, climbing is not always possible and it has to be lexically encoded. The distinction between clitic and non-clitic objects allows us to specify verbs which block CC as a subclass of the general VC-verbs group. We slightly liberate some HPSG syntactic principles in order to account for the optionality of CC and clitics' split. Such a relaxation, however, puts CC into a more general picture advocated in Przepiórkowski (2000).

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