Structural case assignment to objects in Polish

Agnieszka Patejuk, **Adam Przepiórkowski**
{aep,adamp}@ipipan.waw.pl

Introduction

In Polish, the value of case assigned to objects requiring structural case depends on the syntactic context which includes factors such as the part of speech of the head which assigns case and the presence of negation:

(1) Proponuję też poczytanie książki
suggest.1.SG also reading book.GEN
'I also suggest reading a book.' (NKJP)

(2) Poczytam książkę.
read.1.SG book.ACC
'I'll read a book.' (NKJP)

(3) nie poczytają książki czy gazety.
NEG read.3.PL book.GEN or newspaper.GEN
'They won't read a book or a newspaper.' (NKJP)

Assuming that only verbs are taken into consideration (gerunds uniformly assign genitive case to their structural object, see (1)), these are the basic rules of structural case assignment to objects in Polish: if the object is not in scope of sentential negation, as in (2), it is marked for accusative case (*książkę*), the relevant f-structure is provided in (4). By contrast, since the verb in (3) is negated (the f-structure in (5) contains the attribute NEG whose value is +), both conjuncts of the coordinate object bear genitive case (*książki czy gazety*); this phenomenon is known as genitive of negation (GoN).

(4)
$$\begin{bmatrix} \text{PRED} & \text{'READ}\langle \boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix}\text{PRED} & \text{'PRO'}\end{bmatrix} \\ \text{OBJ} & \boxed{2}\begin{bmatrix}\text{PRED} & \text{'BOOK'} \\ \text{CASE} & \text{ACC}\end{bmatrix} \end{bmatrix}$$

(5)
$$\begin{bmatrix} \text{PRED} & \text{'READ}\langle \boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix}\text{PRED} & \text{'PRO'}\end{bmatrix} \\ \text{OBJ} & \boxed{2}\left\{\begin{bmatrix}\text{PRED} & \text{'BOOK'} \\ \text{CASE} & \text{GEN}\end{bmatrix}, \begin{bmatrix}\text{PRED} & \text{'NEWSPAPER'} \\ \text{CASE} & \text{GEN}\end{bmatrix}\right\} \\ \text{NEG} & + \end{bmatrix}$$

Structural case assignment generalisations provided above could be formalised using the constraints below:

(6) $\text{NONEG} \equiv [\neg(\uparrow \text{NEG}) \wedge (\uparrow \text{OBJ CASE}) =_c \text{ACC}]$ (7) $\text{NEG} \equiv [(\uparrow \text{NEG}) =_c + \wedge (\uparrow \text{OBJ CASE}) =_c \text{GEN}]$

The negated existential constraint ($\neg(\uparrow \text{NEG})$) in (6) ensures that there is no negation in the f-structure of the head, while the second conjunct in (6) requires the object to be marked for accusative case; this corresponds to examples such as (2) with f-structure in (4). By contrast, (7) checks that the verb is negated ($(\uparrow \text{NEG}) =_c +$) and checks that its object bears genitive case; these requirements are satisfied by sentences such as (3), whose f-structure is given in (5).

To ensure proper case assignment to structurally case-marked objects of verbs, a disjunction of constraints provided in (6) and (7) such as the one provided in (8) should be placed in the lexical entries of relevant verbs:

(8) $\text{STRCASE} \equiv [\text{NONEG} \vee \text{NEG}]$

GoN in verb chains

There is, however, an outstanding issue which may be illustrated using the following examples:

(9) Nie chcesz poczytać Kodeksu.
NEG want.2.SG read.INF Code.GEN
'You don't want to read the Code.' (NKJP)

(10) Mama nie chce iść poczytać książkę.
mum NEG want.3.SG go.INF read.INF book.ACC
'Mum doesn't want to go and read a book.' (NKJP)

These examples demonstrate how structural case assignment operates in Polish verb chains. They show clearly that the generalisations discussed in the previous section, formalised in (8), need some refinement. The case assignment rule defined in (8) is too simple because – as negation is not local to the predicate assigning case in (9) – it would reject the genitive object (*Kodeksu*) there. It is not the case, however, that genitive is obligatory in such situations: in (10) the object is marked for accusative case (*książkę*), though negation is present higher in the structure of the sentence (at the main verb CHCIEĆ, 'want').

The f-structures provided below show where exactly negation is present in the verb chain (it is marked as the NEG attribute with + value): (11) corresponds to (9), (12) provides a representation of (10).

(11)
$$\begin{bmatrix} \text{PRED} & \text{'WANT}\langle \boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix}\text{PRED} & \text{'PRO'}\end{bmatrix} \\ \text{XCOMP} & \boxed{2}\begin{bmatrix}\text{PRED} & \text{'READ}\langle \boxed{1},\boxed{3}\rangle\text{'} \\ \text{SUBJ} & \boxed{1} \\ \text{OBJ} & \boxed{3}\begin{bmatrix}\text{PRED} & \text{'CODE'} \\ \text{CASE} & \text{GEN}\end{bmatrix}\end{bmatrix} \\ \text{NEG} & + \end{bmatrix}$$

(12)
$$\begin{bmatrix} \text{PRED} & \text{'WANT}\langle \boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix}\text{PRED} & \text{'MUM'}\end{bmatrix} \\ \text{XCOMP} & \boxed{2}\begin{bmatrix}\text{PRED} & \text{'GO}\langle \boxed{1},\boxed{3}\rangle\text{'} \\ \text{SUBJ} & \boxed{1} \\ \text{XCOMP} & \boxed{3}\begin{bmatrix}\text{PRED} & \text{'READ}\langle \boxed{1},\boxed{4}\rangle\text{'} \\ \text{SUBJ} & \boxed{1} \\ \text{OBJ} & \boxed{4}\begin{bmatrix}\text{PRED} & \text{'BOOK'} \\ \text{CASE} & \text{ACC}\end{bmatrix}\end{bmatrix}\end{bmatrix} \\ \text{NEG} & + \end{bmatrix}$$

As illustrated above, sentential negation may work at a distance in Polish – when negation is present but it is not local to the predicate which assigns structural case, it may still influence structural case assignment by this predicate, as in (9). There are, however, certain constraints which restrict the environments in which negation may be transferred to other clauses, see the example below:

(13) (Wcale) nie powiedziałeś, że poczytasz Kodeks/*Kodeksu.
not at all NEG said.3.SG that read.2.SG code.ACC/GEN
'You did not say that you will read the Code.'

(13) shows that sentential negation may not be transferred to sentential clauses, as opposed to infinitival clauses, which was demonstrated in (9). In LFG there is a convenient way of distinguishing between the two embedded clause types, infinitival and sentential: the former usually correspond to the XCOMP grammatical function, while the latter are usually represented in f-structure as COMP. Compare (14), the f-structure representation of the grammatical version of (13) where the object is marked for accusative case, with (11) which corresponds to (9):

(14)
$$\begin{bmatrix} \text{PRED} & \text{'SAY}\langle\boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix}\text{PRED} & \text{'PRO'}\end{bmatrix} \\ \text{COMP} & \boxed{2}\begin{bmatrix} \text{PRED} & \text{'READ}\langle\boxed{1},\boxed{3}\rangle\text{'} \\ \text{SUBJ} & \boxed{1} \\ \text{OBJ} & \boxed{3}\begin{bmatrix}\text{PRED} & \text{'CODE'} \\ \text{CASE} & \text{ACC}\end{bmatrix} \\ \text{COMP-FORM} & \text{ŻE}\end{bmatrix} \\ \text{NEG} & + \end{bmatrix}$$

(15) $\text{STRCASE} \equiv [\text{NONEG} \vee \text{NEG}]$

(16) $\text{NONEG} \equiv [\neg((\text{XCOMP}^* \uparrow)\ \text{NEG}) \wedge (\uparrow \text{OBJ CASE}) =_c \text{ACC}]$

(17) $\text{NEG} \equiv [\text{ANYNEG} \wedge \text{NEGTYPE}]$

(18) $\text{ANYNEG} \equiv ((\text{XCOMP}^* \uparrow)\ \text{NEG}) =_c +$

(19) $\text{NEGTYPE} \equiv [\text{LOCNEG} \vee \text{TRANSNEG}]$

(20) $\text{LOCNEG} \equiv [(\uparrow \text{NEG}) =_c + \wedge (\uparrow \text{OBJ CASE}) =_c \text{GEN}]$

(21) $\text{TRANSNEG} \equiv [\neg(\uparrow \text{NEG}) \wedge (\uparrow \text{OBJ CASE}) \in_c \{\text{ACC, GEN}\}]$

Even though the verb POWIEDZIEĆ ('say') is negated in (14), its negation cannot be used for the purposes of case assignment by the lower predicate, the clausal complement (COMP) POCZYTAĆ ('read'). As a result, unlike in (11), the object of POCZYTAĆ ('read') may only be marked for accusative case in (14) – genitive case marking leads to ungrammaticality, as indicated in (13).

These observations are formalised via constraints in (15)–(21) above. First of all, (15) is the top-level case assignment rule STRCASE, repeated from (8). Its disjuncts were redefined as in (16) and (17) in order to take long-distance GoN into account, together with its optionality, as described above.

The first disjunct of (15), NONEG defined in (16), is a slightly modified version of (6): it handles the situation where sentential negation is not present at all, neither locally to the verb assigning case nor higher in the verb chain. This is achieved by using an inside-out path which makes it possible to reach into any number of successive predicates subcategorising for XCOMP, an infinitival complement, and check if any of these predicates is negated – the verb which assigns case could be an infinitival complement of some predicate which is negated itself or is an infinitival complement of some higher negated verb. The statement in (16) handles sentences such as (2), see (4) for its f-structure representation.

The second disjunct of (15), NEG defined in (17), handles situations where sentential negation is present. It is a conjunction of two statements: ANYNEG and NEGTYPE. The former, ANYNEG, ensures that sentential negation is present at some level, either locally or as transferred negation. The latter, NEGTYPE, assigns case to the object depending on what type of negation is present (local or non-local to the predicate assigning case).

The statement LOCNEG defined in (20) is identical to (7) – it assigns genitive case to the object when the verb assigning case is negated, this is the obligatory genitive of negation clause. It is applied in examples such as (3), see (5) for the corresponding f-structure (negation is local to the predicate assigning case).

The last statement, TRANSNEG defined in (21), handles the case in which there is no local negation. However, the statement ANYNEG defined in (18) makes sure that there is negation at some level, so transferred negation must be present. In such environments the genitive of negation is optional – the object of the verb is assigned accusative (see sentence (10) and (12) for its representation) or genitive case (as in (9), with the corresponding f-structure provided in (11)).

Conclusion

This abstract demonstrated how Polish structural case assignment to objects may be formalised in LFG using functional uncertainty. The case assignment statements formalised here take into account situations where case assigned to the object is influenced by sentential negation which is not local to the predicate assigning case.

The solution offered in this paper could be modified so as to take unlike category coordination and its interaction with structural case assignment into consideration.

Sources

All examples in this abstract are attested; they were extracted from the National Corpus of Polish (NKJP; `http://nkjp.pl/`).