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Polish *żeby* under Negation

Abstract The paper addresses two patterns in the distribution of complement clauses headed by the complementizer *żeby* in Polish related to the presence of sentential negation. It is argued that *żeby*-clauses with an obligatory negation in the matrix clause, licensed by epistemic verbs, can be treated in terms of negative polarity, with *żeby* defined as an *n*-word. Structures with *żeby*-clauses and an obligatory negation in the embedded clause, licensed by verbs of fear, are argued to be an instance of negative complementation, with *żeby* specified as a negative complementizer. A uniform lexicalist analysis within the framework of HPSG is provided, employing tools developed to account for Negative Concord in Polish.*

Keywords: Negation, *żeby*, NPI, HPSG, Polish

1. Introduction

In Polish, indicative finite complement clauses are typically introduced by the complementizer *że* ‘that’. This complementizer is compatible both with affirmative and negative contexts. Thus, all of the constellations in (1) are possible: affirmative matrix predicates can combine with affirmative (1a) and negated (1b) embedded predicates, and negated matrix predicates can combine with affirmative (1c) and negated (1d) embedded predicates.

- (1) a. Piotr obiecywał, że schudnie.
Piotr promised że lose-weight
‘Piotr promised that he will lose weight.’

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b. Piotr obiecywał, że nie schudnie.
 Piotr promised ŻE NEG lose-weight
 'Piotr promised that he will not lose weight.'

c. Piotr nie obiecywał, że schudnie.
 Piotr NEG promised ŻE lose-weight
 'Piotr did not promise that he will lose-weight.'

d. Piotr nie obiecywał, że nie schudnie.
 Piotr NEG promised ŻE NEG lose-weight
 'Piotr did not promise that he will not lose weight.'

In addition to the complementizer *że*, complement clauses in Polish can be headed by the complementizer *żeby* 'that / so that' (or its variants *aby*, *ażeby*, *by*, *coby*, *izby*), which can introduce both non-finite (2a) and finite (2b) clauses.¹ Finite *żeby*-clauses as in (2b) use the *l*-participle and are usually referred to as subjunctives, as in my gloss.

(2) a. Piotr nalegał, żeby wracać.
 Piotr insisted ŻEBY return.INF
 'Piotr insisted to return.'

b. Piotr nalegał, żeby Ewa wróciła.
 Piotr insisted ŻEBY Ewa return.SUBJ
 'Piotr insisted on Ewa to return.'

Typically, complement clauses headed by *żeby*, both non-finite (3) and finite (subjunctive) (4), are compatible with affirmative and negative contexts. Similarly to *że*-clauses, negation can occur within the matrix clause (3b, 4b), within the embedded clause (3c, 4c), or within both clauses (3d, 4d).

(3) a. Piotr nalegał, żeby wracać.
 Piotr insisted ŻEBY return.INF
 'Piotr insisted to return.'

b. Piotr nie nalegał, żeby wracać.
 Piotr NEG insisted ŻEBY return.INF
 'Piotr did not insist to return.'

- c. Piotr nalegał, żeby nie wracać.
 Piotr insisted ŻEBY NEG return.INF
 'Piotr insisted not to return.'
- d. Piotr nie nalegał, żeby nie wracać.
 Piotr NEG insisted ŻEBY NEG return.INF
 'Piotr did not insist not to return.'

- (4) a. Piotr nalegał, żeby Ewa wracała.
 Piotr insisted ŻEBY Ewa return.SUBJ
 'Piotr insisted on Ewa to return.'
- b. Piotr nie nalegał, żeby Ewa wracała.
 Piotr NEG insisted ŻEBY Ewa return.SUBJ
 'Piotr did not insist on Ewa to return.'
- c. Piotr nalegał, żeby Ewa nie wracała.
 Piotr insisted ŻEBY Ewa NEG return.SUBJ
 'Piotr insisted on Ewa not to return.'
- d. Piotr nie nalegał, żeby Ewa nie wracała.
 Piotr NEG insisted ŻEBY Ewa NEG return.SUBJ
 'Piotr did not insist on Ewa not to return.'

The examples in (1), (3) and (4) might suggest that there are no specific restrictions on the usage or distribution of the two complementizers with sentential negation in Polish. However, there are two phenomena which make this picture more complicated. They include cases where *żeby*-clauses are licensed only under obligatory negation either in the matrix clause or in the embedded clause. These two cases are the focus of the present paper. The goal of this contribution is to place these phenomena in the general picture related to Negative Concord and show how they can be accounted for within a unified lexicalist analysis.

In the next section, the status of the complementizer *żeby* is discussed and the distinction between the subjunctive and conditional mood in Polish is explained. Section 3 discusses the phenomena in focus: sentential structures with *żeby*-clauses and negation in the matrix clause, and structures with *żeby*-clauses and negation within the embedded clause. Section 4 suggests a unified analysis of both phenomena and presents its implementation within the framework of

Head-driven Phrase Structure Grammar. Section 5 sums up the observations and conclusions, and sketches some directions for future research.

2. Polish *żeby* and the Subjunctive versus Conditional Mood

Two usage patterns of the *że+by* combination in Polish must be distinguished. Both of them include the elements *że* and *by*, which, however, have in each case different semantic and distributional properties. In the first case, (i) *że* is optional, it can be preceded by *a*, and can be replaced – depending on the style – by other elements such as *a*, *co* or *iż* (5a), (ii) the elements *że* (and the other variants, if present) and *by* are inseparable (5b), (iii) the *że+by* combination can introduce both finite² as well as non-finite clauses (cf. (3) and (4) above).

- (5) a. Piotr nalegał, *by / żeby / ażeby / aby / coby / iżby* Ewa wróciła.
 Piotr insisted BY ŻEBY AŻEBY ABY COBY IŻBY Ewa return.SUBJ
 ‘Piotr insisted on Ewa to return.’
- b. *Piotr nalegał, *że* Ewa *by* wróciła / wróciłaby.
 Piotr insisted ŻE Ewa BY return.SUBJ return.PRT.BY
 ‘Piotr insisted on Ewa to return.’ [intended]

In the second case, (i) *że* is obligatory and cannot be replaced by other elements except one: the rather archaic *iż* (6), (ii) the elements *że* and *by* are morphologically separate entities which need not to appear adjacently (7),³ (iii) the *że+by* combination can only appear in finite clauses (8).

- (6) Mam nadzieję, *że / iż* Ewa przyjdzie.
 have.1.SG hope.ACC ŻE IŻ Ewa come.FUT
 ‘I hope that Ewa will come.’

- (7) a. Powiedziałam, *że* Marek zrobiłby to.
 said.1.SG ŻE Marek do.PRT.BY it
- b. Powiedziałam, *że* Marek *by* to zrobił.
 said.1.SG ŻE Marek BY it do.PRT
- c. Powiedziałam, *że* to *by* Marek zrobił.
 said.1.SG ŻE it BY Marek do.PRT

- d. Powiedziałam, że by zrobił to Marek.
 said.1.SG ŻE BY do.PRT it Marek
 'I said that Marek would do it.'

- (8) Marek powiedział, że (może) by przyszedł / by *przyjść.
 Marek said.3.SG ŻE maybe BY come.PRT BY come.INF
 'Marek said that maybe he would come.' [intended]

Moreover, these two types of *że+by* combinations have different meanings. According to Tomaszewicz (2009), sentences with *że+by* combinations of the first type can refer both to hypothetical unrealized situations as well as to non-hypothetical past and present situations. By contrast, sentences with *że+by* combinations of the second type can only refer to hypothetical unrealized situations. On the basis of these semantic and distributional differences, the two usage patterns of *że+by* combinations have been captured in the literature as instances of subjunctive versus conditional mood, respectively (see also Bański 2000, Bondaruk 2004, Migdalski 2006 and Tomaszewicz 2009, among others).⁴ Given this, the morpheme *by*, which is typical for many Slavic languages, can be seen as a (flexible) mood particle only in the latter case. I conclude that subjunctive clauses are introduced by the complementizer *by*, which can be facultatively prefixed by *że-*, *a-* etc., and that conditional clauses are introduced by the complementizer *że* and contain the modal particle *by*, which, as a clitic, can appear in various positions and can be realized phonologically adjacent to the complementizer *że*.

Note also that person-number markers appear on *by* in both cases (9).⁵ If the markers are present (in the sense that they are phonologically realized), their attachment to *by* is obligatory both in subjunctives (9a) as well as in conditionals (9b).

- (9) a. Piotr nalegał, żebym / żebyś / żebyśmy / żebyście wrócił /
 Piotr insisted ŻEBY.1.SG ŻEBY.2.SG ŻEBY.1.PL ŻEBY.2.PL return. PRT.SG
 wrócili.
 return. PRT.PL
 'Piotr insisted on me / you / us to return.'

- b. Piotr myśli, że (ja) bym / (ty) byś / (my) byśmy / (wy)
 Piotr thinks ŻE I BY.1.SG YOU.SG BY.2.SG we BY.1.PL you.PL
 byście go odwiedził / odwiedzili.
 BY.2.PL him visit.PRT.SG visit. PRT.PL
 'Piotr thinks that I / you / we would visit him.'

Which type of *że+by* combination, subjunctive or conditional, is used in an embedded clause is subject to selectional restrictions of the matrix predicate. Some verbs, such as volitional or desiderative predicates, require subjunctive clauses (cf. (10a) versus (10b) and (10c)), while other verbs require indicative or conditional clauses (cf. (11a) and (11b) versus (11c)).

- (10) a. Chcę, żeby Marek to zrobił.
 want.1.SG ŻEBY Marek it do.PRT
 'I want Marek to do it.'
- b. *Chcę, że Marek by to zrobił.
 want.1.SG ŻE Marek BY it do.PRT
 'I want Marek to do it.' [intended]
- c. *Chcę, że Marek to zrobi.
 want.1.SG ŻE Marek it do.FUT
 'I want Marek to do it.' [intended]

- (11) a. Marek obiecał, że to zrobi.
 Marek promised ŻE it do.FUT
 'Marek promised to do it.'
- b. Marek obiecał, że zrobiłby to.
 Marek promised ŻE do.BY.FUT it
 'Marek promised that he would do it.'
- c. *Marek obiecał, żeby to zrobił.
 Marek promised ŻEBY it do.PRT
 'Marek promised to do it.' [intended]

Some predicates allow both clause types, which is illustrated by (12) as opposed to (7d) above. As already indicated by the English translations in (12) and (7d), including the modals *should* versus *would*, respectively, there is a semantic difference between sentences with embedded subjunctives and sentences with the embedded modal particle *by* (cf. Tomaszewicz 2009 and the indication above).

- (12) Powiedziałam, *żeby* zrobił to Marek.
 said.1.SG *ŻEBY* do.PRT it Marek
 'I said that Marek should do it.'

The phenomena addressed in this paper concern instances of subjunctive complement clauses, that is clauses introduced by *żeby* or its variants (in the following *żeby*). While it is rather uncontroversial that the two usage patterns of the *że+by* combinations, subjunctive and conditional, exist in Polish, there is no consensus on how to analyze these two structure types synchronically, and in particular, how to analyze *żeby*.⁶ In this paper, I adopt a lexicalist, non-derivational approach to *żeby*, according to which this subjunctive complementizer is defined in the lexicon together with its selectional requirements, phonological realization variants, and inflectional specifications (cf. Section 4).

3. *Żeby* under Negation

In this section, two special cases of the distribution of Polish *żeby*-clauses are discussed. In both cases, *żeby*-clauses obligatorily co-occur with sentential negation. In the first case, the negation is present in the matrix clause (Section 3.1) and in the second case, it occurs within the embedded clause (Section 3.2).

3.1. Negation in the Matrix Clause

To introduce the first case, the verb *sądzić* 'think' will be used. This verb typically selects complement clauses introduced by the indicative complementizer *że*. As already indicated in the introduction, Polish *że*-clauses are compatible both with affirmative and negative contexts, thus all configurations are possible (cf. (1)). This also applies to sentences with the verb *sądzić* selecting *że*-clauses (13).

- (13) a. Jan sądzi, że Ewa wróci.
 Jan think.3.SG.PRES że Ewa return.3.SG
 'Jan thinks that Ewa will return.'
- b. Jan sądzi, że Ewa nie wróci.
 Jan think.3.SG.PRES że Ewa NEG return.3.SG
 'Jan thinks that Ewa will not return.'
- c. Jan nie sądzi, że Ewa wróci.
 Jan NEG think.3.SG.PRES że Ewa return.3.SG
 'Jan does not think that Ewa will return.'

Reading 1: It is not the case that Jan thinks Ewa will return.

Reading 2: Jan thinks that it is not the case that Ewa (Neg-Raising) will return.

- d. Jan nie sądzi, że Ewa nie wróci.
 Jan NEG think.3.SG.PRES że Ewa NEG return.3.SG
 'Jan does not think that Ewa will not return.'

Reading 1: It is not the case that Jan thinks Ewa will not return.

Reading 2: Jan thinks that it is not the case that Ewa (Neg-Raising) will not return.

Note that the verb *sądzić* is a negation raising (Neg-Raising) predicate: it can license structures where the syntactic representation of negation is (assumed to be) raised out of an embedded clause to be realized in the matrix clause. Semantically, the negation in the matrix clause is understood as negating the proposition in the complement clause.⁷ Due to this property of *sądzić*, the sentence in (13c) and (13d) have two readings: a non-Neg-Raising reading (Reading 1) and a Neg-Raising reading (Reading 2).

In addition to indicative complement clauses introduced by *że*, a negated verb *sądzić* can combine with subjunctive complement clauses headed by the complementizer *żeby* (14). In this case, the negation in the matrix clause is obligatory; cf. (14a) and (14d) versus (14b) and (14c). A negation within the complement clause is possible but it does not constitute a licenser for a *żeby*-clause with *sądzić* (14c). In other words, *nie sądzić* can select a subjunctive or indicative complement clause, but *sądzić* only the later.

- (14) a. Jan nie sądzi, żeby Ewa wróciła.
 Jan NEG think.3.SG.PRES ŻEBY Ewa return.3.SG
 'Jan does not think that Ewa would return.'

Reading 1: It is not the case that Jan thinks Ewa would return.

Reading 2: Jan thinks that it is not the case that Ewa would return. (Neg-raising)

- b. *Jan sądzi, żeby Ewa wróciła.
 Jan think.3.SG.PRES ŻEBY Ewa return.3.SG
 'Jan thinks that Ewa would return.' [intended]

- c. *Jan sądzi, żeby Ewa nie wróciła.
 Jan think.3.SG.PRES ŻEBY Ewa NEG return.3.SG
 'Jan thinks that Ewa would not return.' [intended]

- d. Jan nie sądzi, żeby Ewa nie wróciła.
 Jan NEG think.3.SG.PRES ŻEBY Ewa NEG return.3.SG
 'Jan does not think that Ewa would not return.'

Reading 1: It is not the case that Jan thinks Ewa would not return.

Reading 2: Jan thinks that is not the case that Ewa would not return. (Neg-raising)

Similar to sentences involving *że*-clauses, the negation in the matrix clause in (14a) and (14d) can be understood as negating the proposition within the complement clause. Consequently, the sentences have two readings: a non-Neg-Raising (Reading 1) and a Neg-Raising (Reading 2) reading, respectively. However, the contrast between (13b) and (13c) on the one hand and between (14a) and (14c) on the other hand indicates that the matrix negation can be assumed to originate in the embedded clause and raise to the matrix clause only for sentences with *że*-clauses but not for sentences with *żeby*-clauses. Thus, Polish *żeby*-clauses with obligatory matrix negation provide a piece of evidence in support of the semantic-pragmatic approaches to Neg-Raising. It is also conceivable that the Neg-Raising interpretation in Polish sentences with *że*-clauses and in sentences *żeby*-clauses differ in nature. While the former is linked to some syntactic operations, the latter is not (or to different ones).

There is also a meaning difference between sentences containing a matrix negation and a *że*-clause and corresponding sentences containing a *żeby*-clause. This meaning difference, also indicated by the translations and the two readings

in (13c) and (14a), goes back to the semantics of the indicative versus subjunctive mood, induced by *że* and *żeby*, respectively (see Section 2).

Besides *sądzić* ‘think’, the following verbs allow for *żeby*-clauses under matrix negation in Polish, while typically selecting *że*-clauses: *czuć* ‘feel’, *dostrzegać* ‘notice’, *podejrzewać* ‘suspect’, *przypuszczać* ‘suppose’, *wierzyć* ‘believe’, *wyobrażać sobie* ‘imagine’ and many others.⁸ The issue of what semantic class(es) those Polish verbs constitute and in what way (if any) they correspond to the verb classes licensing similar phenomena in Romance (and other languages) exceeds the scope of this paper.⁹ Essentially, epistemic predicates (or epistemic usages of predicates) would be expected to be able to select subjunctive clauses under negation (cf. also Farkas 1985, 1992 and Manzini 1994, among others). Given that epistemic predicates express the state of knowledge of a participant and that the indicative mood is selected if the “epistemic agent” is committed to the truth of the embedded proposition (the propositional attitude is veridical), while the subjunctive mood is selected if (s)he is not (the propositional attitude is non-veridical) (cf. Siegel 2009 and Giannakidou 2009, 2011 and earlier work) then the following three structure types in Polish can be assumed to encode different degrees of certainty of the truth of the embedded proposition:

uncertain ← → certain

NEG V [*żeby* SUBJUNCTIVE] > NEG V [*że* INDICATIVE] > V [*że* NEG INDICATIVE]

Fig. 1: Hierarchy of certainty of the truth of the embedded proposition

3.2. Negation in the Embedded Clause

The second type of structure under consideration includes sentences where *żeby*-clauses obligatorily contain sentential negation. *Żeby*-clauses with obligatory sentential negation are licensed by verbs which typically allow for other types of clausal complements without any restrictions on polarity. For illustration, the verb *obawiać się* ‘be afraid’ can be used, which typically combines with finite *że*-clauses and shows compatibility both with affirmative and negative contexts both within matrix and embedded clauses (15).

- (15) a. Ada obawia się, że schudnie.
 Ada be-afraid.3.SG REFL ŻE lose-weight
 'Ada is afraid that she will lose weight.'
- b. Ada nie obawia się, że schudnie.
 Ada NEG be-afraid.3.SG REFL ŻE lose-weight
 'Ada is not afraid that she will lose weight.'
- c. Ada obawia się, że nie schudnie.
 Ada be-afraid.3.SG REFL ŻE NEG lose-weight
 'Ada is afraid that she will not lose weight.'
- d. Ada nie obawia się, że nie schudnie.
 Ada NEG be-afraid.3.SG REFL ŻE NEG lose-weight
 'Ada is not afraid that she will not lose weight.'

As a subject control verb, *obawiać się* can also select complementizerless infinitival clauses with obligatory and non-obligatory control. The examples in (16) show that the compatibility with affirmative and negative contexts can also be attested here.

- (16) a. Ada obawia się schudnąć.
 Ada be-afraid.3.SG REFL lose-weight.INF
 'Ada is afraid that she will lose weight.'
- b. Ada nie obawia się schudnąć.
 Ada NEG be-afraid.3.SG REFL lose-weight.INF
 'Ada is not afraid that she will lose weight.'
- c. Ada obawia się nie schudnąć.
 Ada be-afraid.3.SG REFL NEG lose-weight.INF
 'Ada is afraid that she will not lose weight.'
- d. Ada nie obawia się nie schudnąć.
 Ada NEG be-afraid.3.SG REFL NEG lose-weight.INF
 'Ada is not afraid that she will not lose weight.'

Moreover, non-finite clauses selected by *obawiać się* can also be introduced by the complementizer *żeby* (cf. also Bondaruk 2004 and Witkoś 2008). In this case, a negative in the complement clause is obligatory (cf. (17a) versus (17c)) (see also Błaszczak 2001 and Bondaruk 2004). A negation in the matrix clause

is possible (17b) but it does not provide a licensing environment for the *żeby*-clause (17d).

- (17) a. Ada obawia się, żeby nie schudnąć.
 Ada be-afraid.3.SG REFL ŻEBY NEG lose-weight.INF
 'Ada is afraid that she will lose weight.'
- b. Ada nie obawia się, żeby nie schudnąć.
 Ada NEG be-afraid.3.SG. REFL ŻEBY NEG lose-weight.INF
 'Ada is not afraid that she will lose weight.'
- c. *Ada obawia się, żeby schudnąć.
 Ada be-afraid.3.SG. REFL ŻEBY lose-weight.INF
 'Ada is afraid that she will lose weight.' [intended]
- d. *Ada nie obawia się, żeby schudnąć.
 Ada NEG be-afraid.3.SG. REFL ŻEBY lose-weight.INF
 'Ada is not afraid that she will lose weight.' [intended]

Finally, the examples in (18) show that *obawiać się* can also select finite (subjunctive) *żeby*-clauses and in this case also a negative in the complement clause is obligatory (cf. (18a) versus (18c)). As in sentences with non-finite *żeby*-clauses, a negation in the matrix clause is possible but it is not a licensing context for the *żeby*-clause (cf. (18b) versus (18d)).

- (18) a. Ada obawia się, żeby jej syn nie schudł.
 Ada be-afraid.3.SG REFL ŻEBY her son NEG lose-weight
 'Ada is afraid that her son will lose weight.'
- b. Ada nie obawia się, żeby jej syn nie schudł.
 Ada NEG be-afraid.3.SG. REFL ŻEBY her son NEG lose-weight
 'Ada is not afraid that her son will not lose weight.' [intended]
- c. *Ada obawia się, żeby jej syn schudł.
 Ada be-afraid.3.SG. REFL ŻEBY her son lose-weight
 'Ada is afraid that her son will lose weight.'
- d. *Ada nie obawia się, żeby jej syn schudł.
 Ada NEG be-afraid.3.SG. REFL ŻEBY her son lose-weight
 'Ada is not afraid that her son will lose weight.' [intended]

Similar patterns can be observed with the verbs *bać się* ‘fear’, *martwić się* ‘worry’, *niepokoić się* ‘be afraid’, *lękać się* ‘fear’, *drżeć* ‘tremble’, and other predicates expressing fear, often referred to as *verba timendi*. In fact, *verba timendi* can be seen as negative volitional or desiderative verbs (such as *want* or *desire*): while the former have a preference component in their semantics, the latter have a dispreference component (meaning something like “want / desire that not”). For this reason, *verba timendi* can be considered as inherently negative verbs (in a similar way as verbs such as *doubt* or *deny*; cf. Klima 1964, among others). A piece of evidence for the presence of a negation in the semantics of Polish verbs of fear can be provided by data as in (19) and (20).

- (19) a. Politycy bali się słowem pisnąć w tej kwestii.
 politicians fear.3.PL REFL word.INTST.SG screech in this question
 ‘The politicians feared to breathe a word on this issue.’
- b. Politycy *(nie) pisnęli słowem w tej kwestii.
 politicians NEG screech.3.PL word.INTST.SG in this question
 ‘The politicians did not breathe a word on this issue.’
- (20) a. Obawiałam się pokazać po sobie ból.
 be-afraid.1.SG REFL show on myself pain.ACC
 ‘I was afraid to show pain.’
- b. *Pokazałam po sobie ból.
 show.1.SG on myself pain.ACC
 ‘I showed pain.’ [intended]
- c. Nie pokazałam po sobie bólu.
 NEG show.1.SG on myself pain.GEN
 ‘I did not show pain.’

The examples in (19) and (20) contain idiomatic Negative Polarity Items (NPIs) *pisnąć słowem* ‘to breathe a word’ and *pokazać coś po sobie* ‘show something’, respectively, which can only be licensed in negative contexts. This is illustrated by (19b) and by the examples in (20b) versus (20c), where the presence

of the negation is obligatory. As (19a) and (20a) show, these NPIs can also be licensed by the verbs of fear *bać się* 'fear' and *obawiać się* 'be afraid'. This fact suggests that a semantic negation is available in contexts provided by those verbs. Note that the English equivalent of the Polish NPI *pisnąć słowem* 'to breathe a word' is an NPI, too, and, as the translation of (19a) demonstrates, it can also appear with a verb of fear.

Note that the negation within the *żeby*-clauses in (17a, b) and (18a, b) has no effective semantic contribution to the interpretation of the sentence. Instead, it is an instance of expletive / pleonastic negation (cf. Espinal 1992, Brown 1996, Brown and Franks 1995 for Russian, van den Wouden 1997, Tovena 1996, 1998 and Błaszczak 2001 for Polish). This is evidenced by the fact that the embedded *żeby*-clauses like in (17a, b) and (18a, b) are not able to license *n*-words (see Section 4.1), which can be illustrated by examples like (21), taken from Błaszczak (2001: 144), including the original glosses:¹⁰

- (21) a. *Boję się, żeby on nie przyszedł.*
 fear.1.SG.PRES REFL that+SUBJ he NEG come. PAST-PART
 'I am afraid he will come.'
- b. *Boję się, żeby *nikt / ktoś nie przyszedł.*
 fear.1.SG.PRES REFL that+SUBJ nobody somebody NEG come. PAST-PART
 'I am afraid that somebody will / might come.'

Given the examples above and adopting Giannakidou's approach to indicative- versus subjunctive-selection, which builds on commitment to the truth of the embedded proposition by the attitude holder or by the speaker, we can again postulate three degrees of certainty of the truth of the embedded proposition corresponding to the following three structure types with verbs of fear in Polish (cf. Fig. 2 and Fig. 1 above):

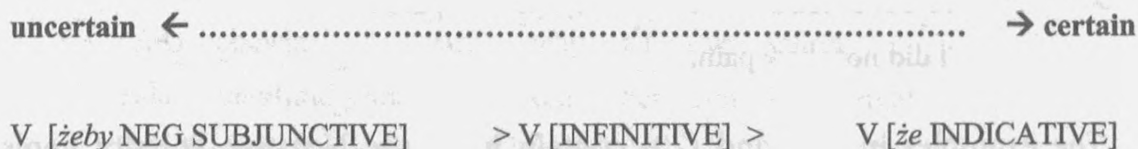


Fig. 2: Hierarchy of certainty of the truth of the embedded proposition

3.3. Summary of Observations

Two patterns in the distribution of complement clauses introduced by the complementizer *żeby* in conjunction with obligatory sentential negation can be observed in Polish. The first pattern is licensed by epistemic verbs and includes obligatory sentential negation in the matrix clause and a subjunctive embedded clause. The second pattern is triggered by verbs of fear and contains obligatory sentential negation within the embedded clause, which can have subjunctive or infinitival form. In both cases, the matrix clause provides a negative polarity environment. These two patterns are summarized in Tab. 1.

Tab. 1: Patterns of the distribution of *żeby*-clauses with sentential negation

Verb type	Matrix clause	COMP	Embedded clause
<i>sądzić</i> 'think'	*(NEG)	<i>żeby</i>	subjunctive
<i>obawiać się</i> 'be afraid'		<i>żeby</i>	*(NEG) infinitival *(NEG) subjunctive

4. The Proposal

I argue that the two patterns discussed in Section 3 are essentially two different phenomena, having however the same core underlying theme, namely the complementizer *żeby*. I assume that it is *żeby* that essentially licenses both types of structures due to its lexical properties (in connection with verbal selectional properties and the principles of grammar). Thus, the analysis proposed here is lexicalist in nature, and it is implemented within the paradigm of Head-driven Phrase Structure Grammar (HPSG) in the tradition of Pollard and Sag (1994). The general analytical ideas are sketched in the present section and their formalization in HPSG is provided in Section 5.

I propose to treat structures with *żeby*-clauses and an obligatory negation in the matrix clause in terms of negative polarity. More precisely, I propose that the complementizer *żeby* in such structures is an *n*-word, that is, an element that requires a negative context (similar to other *n*-words like *nikt* 'nobody', *nigdzie* 'nowhere', *nigdy* 'never' etc.). Note, however, that there is no agreement about the question whether (Polish) *n*-words are inherently negative (cf. Richter and Sailer 2004b) or non-negative (cf. Błaszczak 2001 or Richter and Sailer 1999). Here, I adopt the latter approach and treat Polish *n*-words, including *żeby*, as not being inherently negative, that is, as a kind of Negative Polarity Items (NPIs). NPIs are usually seen as entities which are semantically non-negative elements

that always appear in the scope of a negation (or other licensing contexts) and get their negative import from the licensing contexts (cf. also Przepiórkowski and Kupść 1997 for Polish and Kosta 1999a, b for other Slavic languages). Moreover, the negative polarity *żeby* is a superstrong NPI in terms of the categorization put forward by Zwarts (1998) and van der Wouden (1997).¹¹ As a natural consequence, complement clauses introduced by the negative polarity *żeby* always co-occur with a matrix negation. Note that this proposal is in line with the analyses of corresponding phenomena – captured as *polarity subjunctives*, following Stowell 1993 – in Romance languages (cf. Quer 1998 and B-Violette 2019, among others).

I further propose to treat structures with *żeby*-clauses and an obligatory negation within the embedded clause in terms of negative complementation. In particular, I suggest that in this structure type *żeby* is a negative complementizer. Negative complementizers are attested in many different languages, such as Basque (cf. Laka 1990, 1992), English (the complementizer *lest*), Irish, Hebrew and Latin, among others (cf. Moscati 2010 for an overview), and they can be licensed (overtly or covertly) by inherently negative verbs, such as adversative predicates or verbs of fear.

Finally, selectional restrictions of verbs determine how a particular type of a *żeby*-complement clause is realized syntactically, in the same way that lexical items like *wonder* or *promise* require an interrogative or a declarative complement, respectively. Accordingly, verbs like negated *sądzić* ‘think’ will select complement clauses headed by the negative polarity *żeby*, while verbs like *obawiać się* ‘be afraid’ will select complement clauses headed by *żeby* as a negative complementizer. In the following, I present the implementation of these ideas in the framework of HPSG.

5. Formalization in HPSG

The proposal described above is, in what follows, formalized within the paradigm of HSPG in the tradition of Pollard and Sag (1994). In HPSG, linguistic expressions (signs) are represented as structured complexes of phonological, morphosyntactic, semantic, discourse, and phrase-structural information. The typical notation for these representations is the AVM (Attribute-Value-Matrix) notation. Fig. 3 shows an example AVM of a phrasal sign, which demonstrates that all objects of the type *phrase* have the attribute PHONOLOGY, providing a representation of the phonology of a given sign, and the attribute SYN(TAX-)SEM(ANTICS), whose value has two attributes: NONLOCAL, which allows for describing unbounded dependency phenomena, and LOCAL. The value of the

attribute LOCAL provides three further attributes: CONTENT and CONTEXT, providing semantic and contextual information, respectively, and the attribute CATEGORY, which has two further features: HEAD and VALENCE. The value of the HEAD attribute of a sig is its part of speech. The value of the attribute VALENCE specifies the syntactic valency of a sign. Finally, the value of the attribute DAUGHTERS describes the constituent structure of a phrase.

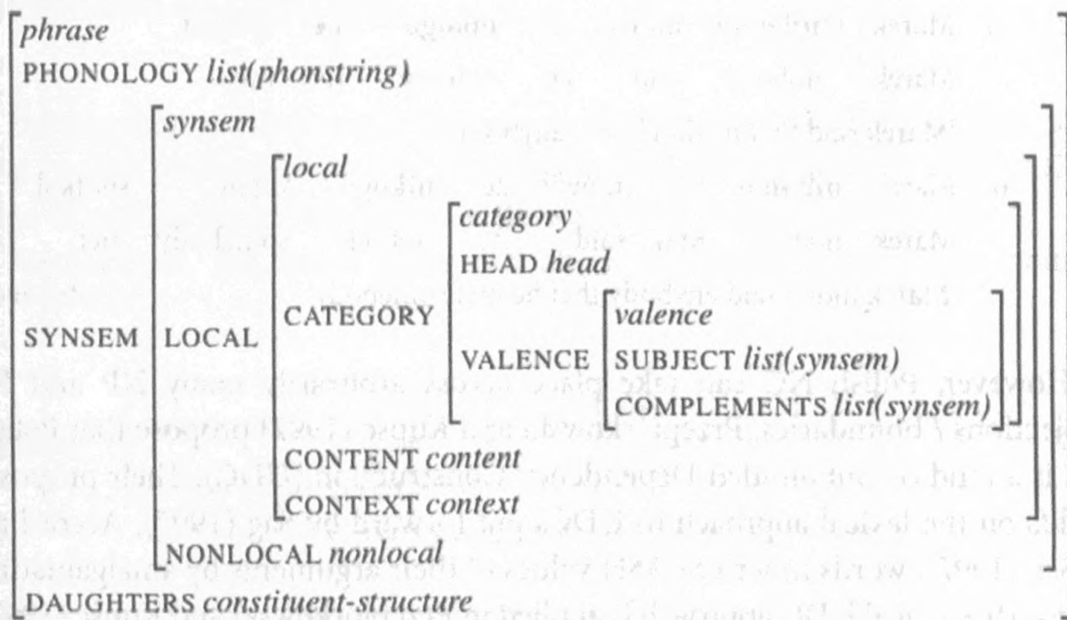


Fig. 3: An exemplary AVM-description of a phrasal sign

I further adopt the syntactic HPSG-approach to Negative Concord (NC) in Polish put forward by Przepiórkowski and Kupść (1997). This approach is presented in Section 5.1. Section 5.2. provides the description of the relevant *żeby*-structures using the tools introduced in Section 5.1.

5.1. Negative Concord in Polish

In Polish, sentential negation is expressed by the negative element *nie*. This negation marker must precede the verb whenever any dependent of the verb (be it a subject, a direct or indirect object, or an adjunct) is a negative phrase or contains an *n*-word. This phenomenon is known as negative doubling. Moreover, Polish also exhibits negative spread, illustrated in (22) following Przepiórkowski and Kupść (1997: 3). Example (22) shows that the presence of multiple negative expressions within a clause results in a single negation meaning.

- (22) **Nikt** **nigdy** **nikogo** **niczym** ***(nie)** uszczęśliwił.
 Nobody_{NOM} never nobody_{GEN} nothing_{INS} not made happy
 ‘Nobody has ever made anybody happy with anything.’

As further pointed out in Przepiórkowski and Kupść (1997), subordinate clauses are in general boundaries for NC in Polish. This can be illustrated by (23).

- (23) a. Marek (***nikomu**) mówił, że **nikogo** ***(nie)** spotkał.
 Marek nobody said że nobody NEG met
 ‘Marek said that he didn’t met anybody.’
- b. Marek **nikomu** nie mówił, że ***nikogo** / kogoś spotkał.
 Marek nobody NEG said że nobody somebody met
 ‘Marek didn’t said anybody that he met somebody.’ [intended]

However, Polish NC can take place across arbitrarily many NP and PP projections / boundaries. Przepiórkowski and Kupść (1997) propose that Polish NC is a kind of Unbounded Dependency Construction (UDC). Their proposal builds on the lexical approach to UDCs put forward by Sag (1997). According to Sag (1997), words inherit SLASH values of their arguments by amalgamating them. This lexical UDC approach is applied in Przepiórkowski and Kupść (1997) to Unbounded NC in Polish. In particular, the negation requirement is assumed to be introduced lexically by *n*-words. The negation requirement is further cancelled lexically by negated verbs (cf. (23)). Lexical exceptions (in particular, the preposition *bez* ‘without’) can easily be modeled in this approach.

Przepiórkowski and Kupść (1997) thus introduce a new non-local attribute responsible for NC, NEGATIVE-CONCORD, taking a boolean value (Fig. 4).

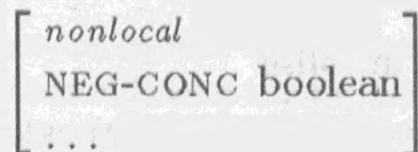


Fig. 4: The non-local attribute NEGATIVE-CONCORD according to Przepiórkowski and Kupść (1997)



Fig. 5: The lexicon entry of the Polish *n*-word *nikt* ‘nobody’ according to Przepiórkowski and Kupść (1997)

The negation requirement is always provided by elements that require a negative context (typically *n*-words). This means that the NEGATIVE-CONCORD value of such elements is specified in the lexicon as positive (+) (Fig. 5).

Furthermore, the lexical items that allow percolation of negation (nouns,

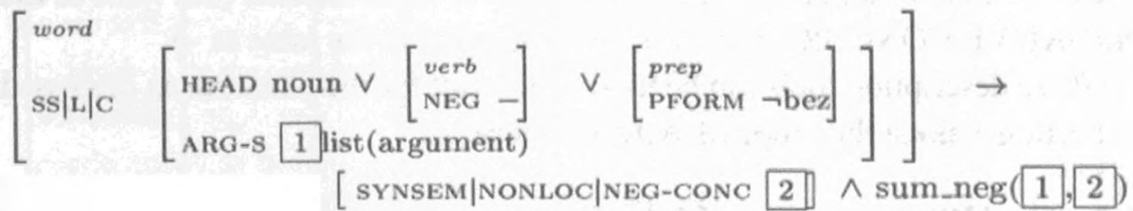


Fig. 6: Lexical Amalgamation of NEGATIVE-CONCORD according to Przepiórkowski and Kupść (1997)

affirmative verbs, prepositions except for *bez* ‘without’) specify the value of their NEGATIVE-CONCORD feature as positive (+) if at least one of their arguments is NEGATIVE-CONCORD + and as negative (-) otherwise (Fig. 6).¹²

Negation Inheritance Constraint (NIC):

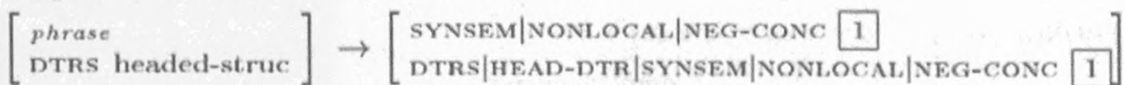


Fig. 7: The NEGATION INHERITANCE CONSTRAINT (NIC) according to Przepiórkowski and Kupść (1997)

The NEGATION INHERITANCE CONSTRAINT (NIC) ensures percolation of the NEGATIVE-CONCORD value along the head projection from a lexical item to its maximal projection (Fig. 7).

Lexical items which cancel negation percolation bear a negative NEGATIVE-CONCORD value. In Polish, those items include verbs (negated or not)¹³ as

$$\left[\begin{array}{l} \textit{word} \\ \text{SYNSEM|LOC|CAT|HEAD verb} \end{array} \right] \rightarrow \left[\text{SYNSEM|NONLOC|NEG-CONC -} \right]$$

$$\left[\begin{array}{l} \textit{word} \\ \text{SYNSEM} \left[\begin{array}{l} \text{LOC|CAT|HEAD} \left[\begin{array}{l} \textit{prep} \\ \text{PFORM bez} \end{array} \right] \\ \text{NONLOC|NEG-CONC -} \end{array} \right] \end{array} \right]$$

Fig. 8: Lexical items cancelling negation percolation according to Przepiórkowski and Kupść (1997)

well as the preposition *bez* ‘without’ (Fig. 8). If a negation percolation takes place, the total result blocks negation because of contradiction (the value of the NEGATIVE-CONCORD feature is set up as + and at the same as -).

These description tools can be used to account for the phenomena discussed in Section 3 along the proposal sketched above.

5.2. The HPSG Account of *żeby*-Structures under Negation

I propose that the Polish complementizer *żeby* bears the non-local attribute NEGATIVE-CONCORD taking boolean values and that the value of this attribute is underspecified in the lexicon. I further adopt aspects of the HPSG-analyses of *żeby* put forward by Borsley (1999) and by Kupść and Tseng (2005).¹⁴ In particular, I treat *żeby* as a subjunctive complementizer with the following properties: (i) its morphological base is the subjunctive (not conditional) – *by*, which in turn can be optionally prefixed by *a-*, *aże-*, *co-*, *iż* and *że-*, (ii) it is a

$$\left[\begin{array}{l} \text{PHONOLOGY } (a \vee a\acute{z}e \vee co \vee i\acute{z} \vee \acute{z}e) + by \\ \text{SYNSEM} \left[\begin{array}{l} \text{LOCAL} \left[\begin{array}{l} \text{CAT} \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{complementizer} \\ \text{CFORM subjunctive} \end{array} \right] \\ \text{ARGUMENT-STRUCTURE} \langle [VP \textit{infinitive} \vee l\textit{-participle}] \rangle \end{array} \right] \\ \text{NON-LOCAL} | \text{NEGATIVE-CONCORD } \textit{boolean} \end{array} \right] \end{array} \right] \end{array} \right]$$

Fig. 9: Lexical entry of the complementizer *żeby*

syntactic head,¹⁵ (iii) it selects for non-finite or finite saturated VPs, and (iv) it agrees with the subject of finite VPs with respect to person and number. Fig. 9 provides the relevant part of a lexicon entry of the subjunctive *żeby*.¹⁶

I further assume that it is a property of individual verbs selecting *żeby*-CPs to determine the value of the feature NEGATIVE-CONCORD. Accordingly, verbs like *sądzić* ‘think’ and other epistemic verbs select CPs headed by *żeby* with a positive valued NEGATIVE-CONCORD feature. This specification makes *żeby* an *n*-word, so that all principles responsible for negation percolation and negation cancellation (see Section 5.1) apply. It follows automatically that *żeby*-clauses are licensed with this type of verb only if those verbs are negated. Otherwise, the principles are not satisfied and a contradiction emerges (a NEGATIVE-CONCORD value + and – is required at the same time). Nothing more needs to be said in the grammar

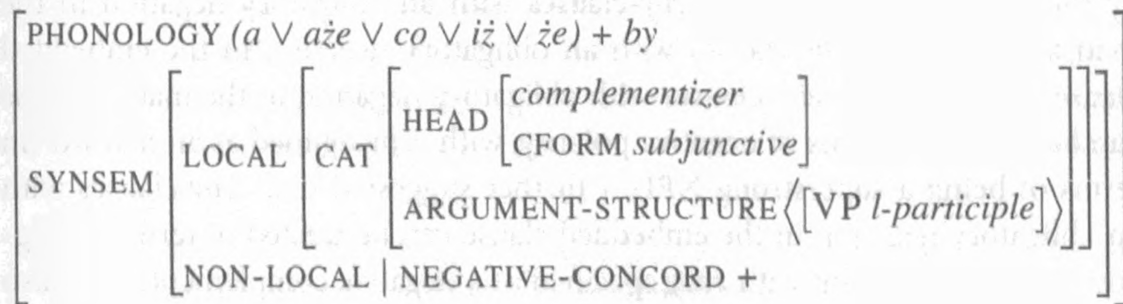


Fig. 10: A description of *żeby* as selected by epistemic predicates

in order to account for structures with *żeby*-clauses and matrix negation. Fig. 10 shows a description of *żeby* as selected by *sądzić* ‘think’ and other epistemic verbs. Note that the verb form of the argument of *żeby* is restricted to *l*-participles.

Verbs like *obawiać się* ‘be afraid’ select CPs headed by *żeby* with an underspecified value of the NEGATIVE-CONCORD feature. This specification neither enforces nor forbids the presence of negation in the matrix clause. However, the verbal argument of *żeby* is specified as being negated. This makes *żeby* a negative complementizer. Moreover, the type of embedded negation is specified as *non-eventuality negation*, as opposed to *eventuality negation*. I adopt

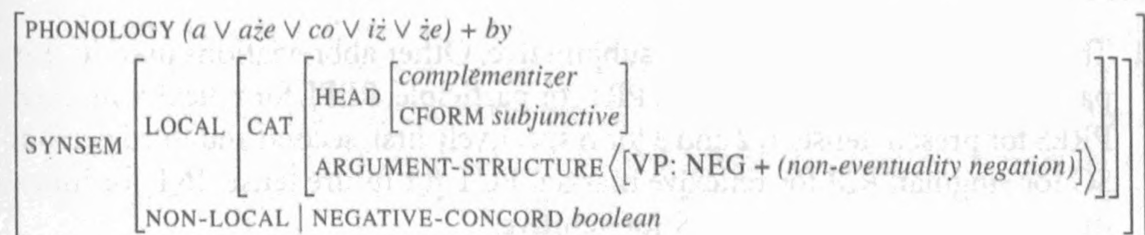


Fig. 11: A description of *żeby* as selected by verbs of fear

this dichotomy from Przepiórkowski and Kupść (1999) to account for expletive / pleonastic negation versus negation with a semantic contribution. The relevant description of *żeby* is given in Fig. 11.

Note that except for the requirement of being negated, the verb form selected by *żeby* is underspecified. Due to this, non-finite clauses as well as *l*-participles can be licensed in this type of structure. Thus, the specifications in Fig. 9 correctly predict the properties of structures with *żeby*-clauses and embedded negation. This also includes the Genitive of Negation, which can occur within *żeby*-clauses.

6. Summary and Outlook

In this paper, I discussed two types of complement clauses in Polish introduced by the complementizer *żeby*: *żeby*-clauses with an obligatory negation in the matrix clause and *żeby*-clauses with an obligatory negation in the embedded clause. I argued that *żeby*-clauses with obligatory negation in the matrix clause can be treated in terms of negative polarity, with *żeby* defined as an *n*-word (in terms of being a superstrong NPI). I further suggested that *żeby*-clauses with an obligatory negation in the embedded clause can be treated in terms of negative complementation with *żeby* specified as a negative complementizer. I also proposed a uniform lexicalist analysis of both phenomena within the framework of HPSG. The proposed analysis employs established tools used to account for NC phenomena in Polish and does not require any further extensions or modifications of the architecture of the grammar.

The primary goal for future work would be to empirically validate the verb classes licensing *żeby*-clauses with matrix negation and embedded negation, respectively. A good starting point would be the exploration of the Polish valence dictionary Walenty and a subsequent validation of the findings using corpus data. The focus of this paper is on the syntactic aspects of the licensing of *żeby*-clauses under negation. In the next step, a closer look at the semantic aspects will be taken, in particular at the correlation between negation, mood, and verbal semantics.

Notes

- 1 The abbreviation SUBJ refers to subjunctive. Other abbreviations used in this paper include NEG for negation, PRT for participle, REFL for reflexive marker, PRES for present tense, 1, 2 and 3 for respectively first, second and third person, SG for singular, RM for reflexive marker, FUT for future tense, INF for infinitive, ACC for accusative, GEN for genitive.

- 2 Morphologically, this finite form is an active past participle, the so-called *l*-participle.
- 3 Note that (7d) sounds somewhat marked for prosodic reasons but grammatically, it is well-formed.
- 4 Bondaruk (2004) provides the following examples to show that in some cases, sentences with non-separated and separated *że+by*-combination are semantically equivalent.

- | | | |
|-----|----|-------------------------------------|
| (i) | a. | Nie sądzę, żebyś to zrobił. |
| | | not I-think so-that-2SG it do-.PRTC |
| | | 'I don't think you would do it.' |
| | b. | Nie sądzę, że zrobiłbyś to. |
| | | not I-think that do-PRTC-BY-2SG it |
| | | 'I don't think you would do it.' |
| | c. | Nie sądzę, że to byś zrobił. |
| | | not I-think that it BY-2SG do-.PRTC |
| | | 'I don't think you would do it.' |
- (Bondaruk 2004, p. 97)

On the basis of these examples (as opposed to cases in (7) versus (13)), she postulates two instances of *żeby*: an inseparable one, which introduces subjunctive clauses, and a separable one, which introduces conditional clauses. However, while the sentences in (i) can all be translated with *would* and seem to provide the same conditional meaning, a deeper examination of the modal-temporal properties of (ia) on the one hand and of (ib) and (ic) on the other hand shows that there is an important meaning difference between them. In particular, (ia) but not (ib) or (ic) can refer to a situation that presumably has already happened. This observation has been made by Tomaszewicz (2009, 2010); cf. also Migdalski (2006).

- 5 In Polish, 3. person singular and plural markers have no phonological realization.
- 6 It is also not clear whether the two types of *że+by* combinations are related historically and whether *żeby* derives from the conditional auxiliary *by*, as suggested in Borsley (1999).
- 7 The notion of Neg-Raising or, originally, negative transportation goes back to Fillmore (1963) and was adopted in many other approaches, such as Lakoff (1969), Ross (1973), Prince (1976) or, more recently, Collins and Postal (2014, 2017); see also Kiparsky (1970), Jackendoff (1971), Pollack (1976), Klima (1964), Lasnik (1972), Zeijlstra (2018) and others. In addition, a number of semantic-pragmatic approaches to Neg-Raising have been developed, which essentially go back to Bartsch (1973) and include Horn (1978), Horn and Bayer (1984), Tovina (2001), Sailer (2005, 2006), Gajewski (2007), Romoli (2013),

among others. See also Crowley (2019), who argues that both purely syntactic and semantic-pragmatic approaches are needed in order to account for the full range of data. For a discussion on Neg-Raising in Polish in comparison with English, see Modrzejewska (1992).

- 8 The Polish Valence Dictionary (Walenty, Przepiórkowski et al. 2014a, b), an electronic dictionary of subcategorisation frames for Polish verbs and quasi-verbal predicates, provides 64 such verbs.
- 9 For recent work on subjunctive in Romance languages, see B-Violette (2019) and the references therein.
- 10 But see Richter and Sailer (2004a), who point out that some speakers allow for an expletive interpretation of *nikt*. This observation also correlates with my own intuitions. In the National Corpus of Polish (NKJP, Przepiórkowski et al. (2012); <http://nkjp.pl>), both sentences with *nikt* as well as sentences with *ktoś* can be found (cf. (i) and (ii) found in the full version of NKJP). Clearly, further research on this phenomenon is needed.

- (i) a. Rosjanie bali się, żeby ktoś nie wyniósł jakiejś
Russians feared REFL ŻEBY someone NEG take-out some.GEN
konstrukcji, nie wykradł metody.
construction.GEN NEG steal method.GEN
'Russians feared that someone might take out some construction, steal a method.'
- b. Pewno obawiano się, żeby ktoś nie zwiął na inną planetę.
probably was-afraid REFL ŻEBY someone NEG scam on another planet
'It was probably afraid that someone might scam to another planet.'
- c. Dyrektorzy martwią się, żeby ktoś im tych
directors worry REFL ŻEBY someone they.DAT those.GEN
komputerów [po prostu] nie ukradł.
computers.GEN just NEG steal
'Directors worry that someone might just steal those computers from them.'
- (ii) a. Panicznie boję się, żeby nikt obcy jej nie skrzywdził.
panicky fear.1.SG REFL ŻEBY nobody strange her NEG hurt
'I'm panicky about making sure no stranger hurts her.'
- b. Przy budowie dachu bano się, żeby nikt nie spadł [...]
during construction roof.GEN was-feared REFL ŻEBY nobody NEG fall
'During the construction of the roof, it was feared that someone might fall.'
- c. I modli się, żeby nikt nie zapytał jej o godzinę.
and pray.3.SG REFL ŻEBY nobody NEG ask her about time
'And she prays that no one asks her what time it is.'

- 11 Zwarts (1998) and van der Wouden (1997) propose to categorize NPIs by the strength of the negation required to license them. The strength of the licensing negation can thereby be defined based on three types of contexts: (i) antimorphic contexts (property of sentential negation), (ii) anti-additive contexts (negative quantifiers like *no student*, the conjunctions *without*, *before*), and (iii) downward-entailing contexts (the quantifier *few*, the adverbs *seldom*, *hardly* etc.). These three types of contexts form a hierarchy: Antimorphism is the strongest form of negativity and downward entailment the weakest one. Antimorphic contexts constitute a proper subset of anti-additive contexts, which in turn are a proper subset of downward entailing contexts. Based on these types of contexts, three types of NPIs can be distinguished: superstrong, strong, and weak. The three categories of NPIs are defined in van der Wouden (1997) in the following way: NPIs are superstrong if they are licensed only by antimorphic contexts (overt sentential negation). NPIs are strong if they are licensed by antimorphic and anti-additive contexts. NPIs are weak if they are licensed by antimorphic, anti-additive and downward-entailing contexts. Since Polish *żeby*-clauses are licensed in the relevant structures only by an overt sentential negation, I conclude that they should be captured in terms of superstrong NPIs. In this respect, Polish *żeby*-subjunctives differ from polarity subjunctives in the Romance languages, which can be also licensed by other contexts, such as interrogatives and conditionals.
- 12 The relation $\text{sum_neg}/2$ ensures that the NEGATIVE-CONCORD value of a word is positive if at least one of the arguments is NEGATIVE-CONCORD +.
- 13 Assuming a negative NEGATIVE-CONCORD value for all verbs, including negated and non-negated verbs, is necessary to handle islands for NC created by non-negated verbs in Polish.
- 14 For configurational approaches to *żeby*, see Borsley and Rivero (1994), Bański (2000), Bondaruk (2004), Migdalski (2006), Tomaszewicz (2009) and other work cited therein.
- 15 In the classical HPSG approach, complementizers are markers (i.e., non-heads).
- 16 For the sake of simplicity, issues related to agreement and inflectional marking, which are orthogonal to the topic of this paper, are ignored here. For details and possible solutions within the HPGS framework, see Kupść and Tseng (2005).

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