1. Introduction

Contrary to what is often claimed about coordination, namely that it operates on elements (conjuncts) which are of the same category and which bear the same grammatical function, it is not only possible to coordinate categorically different elements in Polish (as in (1)), but it is also possible to coordinate elements which correspond to different grammatical functions (see (2)):

(1) Doradził mu [wyjazd] i [żeby nie wracał].
    advised him leave.ACC and that NEG come back
    ‘He advised him to leave and not to come back.’
    Kallas 1993, p. 92, ex. (48a)

(2) Kogo i komu przedstawił?
    who.ACC and who.DAT introduced
    ‘Who did he introduce to whom?’
    Kallas 1993, p. 121, ex. (241)

This paper is concerned with constructions such as in (2), referred to by Kallas (1993) as “lexico-semantic coordination” (following Sannikov 1979, 1980) and known in the literature under various other names: hybrid coordination, coordinated wh-words, etc.
In (2) the first conjunct is a direct object while the second conjunct is an indirect object\(^1\), it is worth noting, however, that both conjuncts belong to the same semantic class: *wh*-words. Though this phenomenon occurs with many other classes of pronouns (*n*-words, *any*-type words, *every*-type words, etc.; see Przepiórkowski and Patejuk 2014, Patejuk and Przepiórkowski 2012 for discussion), *wh*-words have attracted most attention.

The aim of this paper is to join the discussion of how constructions such as (2) should be analysed – do conjuncts in such examples belong to the same clause? Monoclausal analyses argue that conjuncts belong to the same clause, which means that (2) is treated similarly to multiple questions (as in (3)). By contrast, multiclausal analyses (often referred to in the literature as biclausal, although they may involve more than two clauses) treat (2) as consisting of two different clauses featuring two distinct questions (see (4)).

\[
(3) \quad \text{Kogo komu przedstawił?}
\]

\[
(4) \quad \text{Kogo przedstawił i komu przedstawił?}
\]

2. Multiclausal analyses

This paper takes into consideration two recent multiclausal analyses of lexico-semantic coordination, namely that of Tomaszewicz (2011a) and Citko and Gračanin-Yüksek (2013). These analyses were chosen because they were originally applied to Polish data and they were also accompanied by an explanation of the resulting representation.

Although the analyses of Tomaszewicz (2011a) and Citko and Gračanin-Yüksek (2013) differ with respect to formal devices they use – Tomaszewicz (2011a) operates with the notion of deletion (under identity) while Citko and Gračanin-Yüksek (2013) use multidominance (sharing certain branches by clauses) – the intuition behind these analyses is strikingly similar: both offer two-fold analyses which cover nearly equivalent cases.

\(^1\) We strive to find examples involving arguments rather than adjuncts, as the latter are more common cross-linguistically (Lipták 2012).
The first case in Tomaszewicz (2011a) is the one where two conjuncts belong to two distinct clauses and missing arguments (if any) are filled using implicit pronouns – the representation provided in (6) corresponds to (5), more precisely to its single pair reading, while the interpretation accompanying this analysis is provided in (7).

(5) Kto i co kupił?
who and what bought

Tomaszewicz 2011a, ex. (1)

(6) \[ who [\text{TP} \text{who} \text{bought something}] \& [\text{what} [\text{TP} \text{pro} \text{bought what}]]

Tomaszewicz 2011a, ex. (4a)

(7) Who bought something? And what did they buy?

Tomaszewicz 2011a, ex. (4b)

While pair list readings are typical of multiple questions (such as ‘Who left when?’) which ask about more than one variable (subject, time) and expect answers consisting of a list of pairs (‘Mary left yesterday, John left two days ago.’), single pair readings are typical of single questions which ask about only one variable (‘Who left yesterday?’) and require single answers (‘Mary left yesterday.’). Since both questions in (6) are single questions (this is reflected in the interpretation in (7)), Tomaszewicz (2011a) uses this strategy for obtaining the single pair reading.

The counterpart of this strategy is what Citko and Gračanin-Yüksek (2013) call the non-bulk sharing strategy where “wh-words are NEVER shared between the two CPs (while everything else in the structure is)” – their representation is shown in Figure 1.

The second case used by Tomaszewicz (2011a) is where two conjuncts belong to two distinct clauses as a result of the movement of the first conjunct – it moves from the second clause (where the other conjunct resides and the verb is present) to the first clause (which lacks the verb). As a result, the representation involves a multiple question in the second clause. The examples below were taken from Tomaszewicz (2011a): (8) provides the representation (including implicit pronouns) of the pair list reading of (5), its interpretation is provided in (9). Both include two questions:
Figure 1: non-bulk sharing structure (Citko and Gračanin-Yüksek 2013, ex. (6c))

Figure 2: bulk sharing structure (Citko and Gračanin-Yüksek 2013, ex. (6b))
 Citko and Gračanin-Yüksek (2013) use the bulk-sharing strategy which is a near counterpart of the pair list multiclausal analysis of Tomaszewicz (2011a). Under this analysis “there is a point in the derivation when the two wh-phrases belong to both CPs, even though in the final representation each wh-phrase occupies a specifier of a different CP”, see Figure 2 for an illustration.

The difference with respect to the analysis of Tomaszewicz (2011a) is that only one of the clauses, the second one, contains a multiple question, while in the analysis of Citko and Gračanin-Yüksek (2013) this is the case with both clauses. As a consequence, the multidominance bulk sharing analysis does not use implicit arguments as there are no missing arguments.

3. Critical review of selected arguments

This section provides a critical review of selected arguments supporting the monoclausal or multiclausal analysis of lexico-semantic coordination when applied to data from Polish.

3.1. Distribution of question particles

Tomaszewicz (2011a) mentions a test based on the distribution of question particles and discusses it using data from Romanian cited after Rațiu (2009):

(10) Oare cine ce va spune?

Tomaszewicz 2011a, ex. (13a)
As the examples show, in Romanian the question particle *oare* can be used only once with multiple *wh*-questions, but it can be used with each conjunct under lexico-semantic coordination. This suggests that while multiple *wh*-questions are monoclausal, the structure of lexico-semantic coordination of *wh*-words is multiclausal in Romanian.

While the test itself seems convincing, it cannot be applied directly to Polish as there is no question particle in Polish which could be a counterpart of the Romanian *oare*.

It is possible, however, to consider the distribution of other elements which may occur only once per clause in Polish. Potential candidates include mood markers such as *by* (conditional) and *niech* (imperative), the reflexive marker *się*, the negative particle *nie* and agglutinate forms of the verb *BYĆ* ‘be’ (i.e., mobile inflections such as *-em in szedlem*).

To verify whether items listed above may be used with each *wh*-word conjunct under lexico-semantic coordination, it is possible to use the National Corpus of Polish (NKJP; http://nkjp.pl/; Przepiórkowski et al. 2011, Przepiórkowski et al. 2012), the largest annotated corpus of Polish containing over 1.8 billion segments. The following query template was used for searching NKJP:

(12) [base="kto|co|gdzie|jak" & (case=$1 | case!=".*")\] VAR
    i [base="kto|co|gdzie|jak" & (case!==$1 | case!=".*")\] VAR

VAR is a metavariable which is to be substituted (twice) for a relevant query element from the list provided above (mood marker, reflexive marker, negative particle, agglutinate verb form). The sequence [base="kto|co|gdzie|jak"&(case=$1|case!=".*")\] corresponds to a segment whose base form is *KTO, CO, GDZIE or JAK* (base="kto|co|gdzie|jak") and its case value is assigned to the $1 variable (case=$1) or it has no case at all (case!=".*"). While [base="kto|co|gdzie|jak"&(case!==$1|case!=".*")\] matches the same base forms, it requires that the case of this segment is not the same as the
one assigned to the variable $1$ (case!=$1$) or that the segment has no case whatsoever (case="".").

A sample query resulting from substituting by for VAR in (12) is provided below:

(13) \[
[\text{base=""kto|co|gdzie|jak"" } & (\text{case}=$1$ | \text{case}="".""})] \text{ by }
\]

i \[
[\text{base=""kto|co|gdzie|jak"" } & (\text{case}!=$1$ | \text{case}="".""})] \text{ by }
\]

Some constructed examples that would match the query in (13) are given below:

(14) *Kto by i kogo by uderzył?
(15) *Kto by i kiedy by uderzył?
(16) *Gdzie by i kiedy by uderzył?

The following table provides a short summary of the results of relevant NKJP queries (the entire corpus, NKJP1800M, was searched for results):

<table>
<thead>
<tr>
<th>metavariable used in (12)</th>
<th>by</th>
<th>niech</th>
<th>się</th>
<th>nie</th>
<th>[pos=aglt]</th>
</tr>
</thead>
<tbody>
<tr>
<td>NKJP results</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The results summarised above show that there is no evidence that it is possible to use elements which normally occur only once per clause (markers, particles, clitics) in Polish with each element of questions featuring lexico-semantic coordination. This suggests that there is no evidence supporting the multicausal analysis and therefore the monoclausal analysis should be given preference instead, as it is simpler.²

² Theoretically, it might be the case that counterexamples exist in larger text collections, but constructed examples, such as in (14)–(16), are unacceptable, so we conclude that corpus evidence is in accordance with judgements of native speakers here.
3.2. Overt pronouns

Kazenin (2001) advances an argument in favour of monoclausal analyses of lexico-semantic coordination on the basis of coreference effects with overt pronouns. He discusses the following examples from Russian:

(17) [Kogo i Petja izbil] i [za čto Petja ego i??pro, izbil]?
whom Peter beat and for what Peter him beat
‘Whom did Peter beat and what for did Peter beat him?’
Kazenin 2001, ex. (50)

(18) *Kogo, i za čto Petja ego izbil?
whom and for what Peter him beat
Kazenin 2001, ex. (52)

Kazenin (2001) notes that under a coordination of two questions such as in (17) the wh-word in the first clause (Kogo) may be coreferential with an implicit pronominal (pro) or an overt pronoun (ego) in the second clause. By contrast, an overt pronoun coreferential with one of the conjuncts cannot be used under lexico-semantic coordination, as shown in (18). This suggests that the structure of such examples is monoclausal – unlike in (17), Kogo and za čto belong to the same clause, which makes it impossible to use an overt pronoun as the object of izbil – this argument position is already filled by Kogo.

This test is applicable to Polish and the facts are very similar to Russian examples discussed above:

(19) Kogo i za co Piotr (*go) zbił?
who.ACC and for what Piotr he.ACC beat
‘Who did Piotr beat and what did Piotr beat him for?’

Unless one assumes some account of ellipsis that uses null pronouns to block the use of lexical pronouns, this test seems to yield reliable results and it suggests that examples of lexico-semantic coordination such as the one provided above are monoclausal.
3.3. Left-branch extraction (LBE)

Tomaszewicz (2011b) proposes a syntactic argument in support of the multiclausal analysis of constructions with conjoined wh-words based on the unavailability of a certain type of extraction in this environment. The argument is that while left-branch extraction is grammatical with multiple questions (see (20)) which are monoclausal, Tomaszewicz 2011b claims that such extraction is ungrammatical when lexico-semantic coordination is involved (compare (21)) and attributes this alleged contrast in grammaticality to the fact that the structure of lexico-semantic coordination is multiclausal.

(20) Jaki кто kupił samochód swojej żonie?
    which.ACC who.NOM bought car.ACC SELF.DAT wife.DAT

Tomaszewicz 2011b, ex. (27a)

(21) *Jaki i кто kupił samochód swojej żonie?
    which.ACC and who.NOM bought car.ACC SELF.DAT wife.DAT

Tomaszewicz 2011b, ex. (27b)

However, the existence of contrast in grammaticality claimed by Tomaszewicz (2011b) is dubious: counterexamples may be found in the literature discussing similar phenomena (Kallas 1993, see the example below):

(22) Jakie i skąd zdobywał informacje?
    what.ACC and from where obtained information.ACC

‘What information and where from did he obtain?’

Kallas 1993, p. 141, ex. (108)

Moreover, numerous attested examples are readily available:

(23) Jakie i кто miał rzucane klody pod nogi
    what and who had thrown logs under legs

‘Who has been put what obstacles in their way?’

NKJP

(24) Czy wiadomo jaki i кто będzie grał schwarzcharakter?
    PART known what and who AUX play villain

‘Do we know who is going to play which villain?’

NKJP
(25) Jakie i kto podjął w tej sprawie działania?
what and who took in this matter actions
‘Who took what action in this matter?’

Since the examples listed above provide rich counterevidence to the judgements of Tomaszewicz (2011b), the conclusion drawn on the basis of her judgements does not hold – there is no contrast in grammaticality between LBE with multiple \( wh \)-questions and under lexico-semantic co-ordination, so there is no reason to claim that the latter is multiclausal.

It must be noted, however, that undermining the argument of Tomaszewicz (2011b) does not provide strong, constructive evidence in support of the monoclausal representation of lexico-semantic coordination: LBE is possible in lexico-semantic coordination, whatever the representation.

### 3.4. Stranding

An argument in favour of the monoclausal analysis advanced by Paperno (2012) is based on the fact that there is a Russian pronoun, namely \( čto \), which requires adjectival modifiers to appear in a non-agreeing genitive case form, unlike other nominals which take adjectival modifiers fully agreeing in case.

Paperno (2012) offers a test based on the phenomenon of stranding, which is, in transformational terms, a kind of “partial \( wh \)-movement”, and illustrates it using the following example from Russian:

(26) \( čto \ i komu on xorošego sdelal? \)
what.ACC and who.DAT he good.GEN did
‘What good did he do, and to whom?’

Paperno 2012, ex. (49)

Paperno (2012) argues that the structure of this example must be non-elliptical (monoclausal) due to the fact that the adjectival modifier \( xorošego \) must depend on – and hence belong to the same clause as – the first conjunct, \( čto \). He provides the following example to demonstrate that the modifier cannot occur in the non-agreeing genitive form on its own:
(27) *Komu on xorošego sdelal?
   *who.DAT he good.GEN did
   ‘To whom did he do good?’

Paperno 2012, ex. (50)

Furthermore, Paperno (2012) shows that this argument is immune to those multiclausal analyses which claim that there is ellipsis in one of the conjuncts coupled with the use of an indefinite pronoun (as in Tomaszewicz 2011a, for instance):

(28) Komu on čto-libo xorošee sdelal?
   who.DAT he something good.ACC did
   ‘To whom did he do something good?’

Paperno 2012, ex. (51)

This example features an indefinite pronoun, čto-libo, which triggers full modifier agreement. The multiclausal analysis of Tomaszewicz (2011a) features an indefinite pronoun represented as something, see (6) and (8) which correspond to (5). However, on the assumption that the indefinite pronoun of Tomaszewicz 2011a behaves in the same way as čto-libo, (26) cannot be analysed as an instance of ellipsis of an indefinite pronoun – if this was the case, the modifier would be expected to appear in the agreeing form, as in (28).

The facts in Polish are similar: while adjectival modifiers usually fully agree in case with their nominal heads, there are pronominal forms which require the modifier to appear in a non-agreeing case, namely genitive. The following example is analogous to the one provided in (26):

(29) Co i komu ona ciekawego/*ciekawe powiedziała?
   what.ACC and who.DAT she interesting.GEN/ACC said
   ‘What interesting did she say, and to whom?’

There are, however, certain differences with respect to facts from Russian as Polish has more pronouns which display the (non-)agreement pattern shown above for the interrogative co. This class also includes elements such as coš (indefinite), cokolwiek (any-type pronoun) and nic (n-word).
Unfortunately, since such (non-)agreement is possible in Polish with the indefinite pronoun (*coś*), this test is potentially vulnerable to claims that one of the conjuncts features an indefinite pronoun which was deleted as a result of ellipsis.

Though it is not a definite argument against such ellipsis accounts, it is perhaps worth mentioning that, when discussing a similar possibility in Hungarian, Lipták (2012) noted that “there is no evidence for indefinite object deletion in other domains of the grammar of Hungarian” – the same seems to hold for Polish:

(30) *(Coś) ciekawego się stało.
    something.NOM interesting.GEN REFL happened
    ‘Something interesting happened.’

While this test does not provide a definite argument against multiclausal analyses, it poses many difficulties to such analyses, forcing them to use otherwise unmotivated mechanisms. As a result, the monoclausal analysis is given preference.

### 3.5. Coordination with a yes/no question particle

There are examples where *czy*, the Polish yes/no question particle, is coordinated with a *wh*-word:

(31) Tytuł brzmiał prosto i uczciwie: „Czy i jaki jest Bóg”
    title sounded simply and honestly PART and what is God
    ‘The title sounded simple and honest: “Does God exist and what is he like?”’

NKJP

(32) Nie wiemy wreszcie, czy i co kto chowa w rękawie.
    NEG know besides PART and what.ACC who.NOM hides in sleeve
    ‘Besides, we don’t know if they keep something up their sleeves and who keeps what up their sleeve.’

NKJP
While such examples are common and their grammaticality is rather uncontroversial, it is worth noting that removing the conjunction results in ungrammaticality:

(33) *Czy co kto chowa w rękawie?

This suggests that the question particle czy cannot be used with *wh*-words as dependents of the same predicate. Locality is a key factor in formulating this constraint – sentences where *wh*-words depend on a different predicate are grammatical, as shown below:

(34) Czy wiesz, co kto chowa w rękawie?

‘Do you know who keeps what up their sleeve?’

In this example the *wh*-words *co* and *kto* are dependents of the verb *chowa*, the clausal complement of the verb *wiesz* to which *czy* belongs – the particle and *wh*-words belong to distinct clauses: main and embedded clause, respectively. As a result, this example satisfies the requirement that there be no *wh*-words in the clause which contains *czy*.

If this constraint is accepted, it follows that the syntactic structure of lexico-semantic coordination featuring *czy* as one of the conjuncts cannot be monoclausal. Under the multiclausal analysis, however, the constraint

---

3 The anonymous reviewer questions this opinion. Also Danielewiczowa 1996, p. 83 (fn. 62), considers such constructions with *czy* as at best colloquial. It is not clear to us whether such differences in judgements reflect actual speaker variation, but the frequency of the construction speaks for accepting its grammaticality: there are 942 results of the query Czy/ii[base="’kto|co|jak|kiedy|jaki|ile’"] in the balanced (300-million-segment) subcorpus of NKJP, which contains mostly edited texts (newspapers and books constitute about 80%). Examples come from works by well-known authors (Jan Parandowski, Bruno Jasieński, Tadeusz Dolega Mostowicz, Tadeusz Bereza, Edward Stachura, Andrzej Sapkowski, Wistold Horwath, Artur Baniewicz, Sławomir Shuty are among the first 30 hits) published by respected publishers (PIW, Krajowa Agencja Wydawnicza, Czytelnik, W.A.B., Czarne – again, just among the first results). By comparison, Kto/ii[base="’kto|jak|kiedy|jaki|ile’"] (with *co ‘what.NOM’* removed, to prevent hits of the form *Kto i co ‘Who.NOM and what. NOM’*) returns only 487 results.
discussed above is satisfied because *czy* and *wh*-words belong to different clauses.

Lexico-semantic coordination with *czy* is a special case due to the fact that removing the conjunction in other lexico-semantic environments does not lead to ungrammaticality – the result of such an operation with coordinated *wh*-words is a monoclausal structure, a multiple question. However, this is not possible with *czy*, which suggests that lexico-semantic constructions involving *czy* – unlike other cases of lexico-semantic coordination – should be analysed as multiclausal.

4. Conclusion

The previous section provided a critical review of selected tests arguing for monoclausal or multiclausal representation of lexico-semantic coordination applied to Polish. It showed that while there is evidence which suggests that structures with *czy* should be analysed as multiclausal in Polish, there is no evidence which would support such an analysis when *czy* is not involved. On the other hand, there is no strong evidence arguing against multiclausal analyses – ellipsis is a very powerful operation. This is starkly visible when considering phenomena such as gapping – for instance, the head of a clause may be removed and there seems to be no requirement of strict identity of verb forms (singular *lubi* vs plural *lubią*); besides, the dependent of the gapped clause may bear different case than in the full clause (accusative *Marysię* vs genitive *Marysi*, triggered by negation):

(35) Janek lubi Marysię, a jego rodzice nie (lubią Marysi).

‘Janek likes Marysia, but his parents don’t (like Marysia).’

Though the multiclausal analysis often needs extra devices to account for relevant data (as in stranding, left-branch extraction or overt pronouns test), it nevertheless cannot be rejected altogether – it is a theoretical possibility, however demanding it may be.
While both analyses are available in theory, it seems preferable to choose the more economic and simple analysis if there is no reason to do otherwise. As a consequence, the monoclausal analysis emerges as the default analysis—it does not require the use of implicit pronouns and coindexing, it does not use ellipsis mechanisms which are hard to justify in other syntactic contexts. The multiclausal analysis seems to be motivated only for cases when one of the conjuncts is the yes/no question particle czy.

References

KAZENIN K. I., 2001, On Coordination of Wh-phrases in Russian, MS, University of Tübingen and Moscow State University.


**Lexico-Semantic Coordination in Polish: a Critical Review of Tests for Determining Representation. Summary**

This paper offers a critical review of five selected tests on the representation of lexico-semantic coordination – monoclausal or multiclausal – and applies them to Polish data. It shows that while there is no strong evidence that would definitely exclude either analysis, lexico-semantic coordination should rather be analysed as monoclausal, on the basis of considerations of economy of theoretical machinery needed for a successful account, with the possible exception of constructions involving the yes/no question particle *czy*, for which an argument for a multiclausal analysis may be constructed.