Chapter 2

Doubling in South Slavic relative clauses and the predictability of morphosyntactic features

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The paper investigates the morphosyntactic properties of relative markers in South Slavic. In Slavic languages, like in many other European languages, relative clauses can be introduced by two kinds of relative markers: (i) relative complementisers, which are invariant in their form, and (ii) relative pronouns, which are inflected (for case, number, and gender, depending on the language). Slavic languages regularly use wh-based complementisers and/or pronouns. Crucially, the two cannot co-occur: this ban is not grounded in the syntactic structure per se, but it derives from the feature incompatibility of two wh-based relative markers, which are regularly equipped with an uninterpretable relative feature. The only exception is Macedonian: in this case, however, there is independent evidence for the complementiser to have different features, suggesting that while morphological properties are good predictors for the relevant syntactic constraints, they are not deterministic.

Keywords: demonstrative pronoun, feature checking, finiteness, inflection, interrogative clause, relative clause

1 Introduction

There are various elements that can overtly mark and introduce relative clauses; two examples from English are given in (1) below:

(1) a. This is the problem *which* we should solve first.
     b. This is the problem *that* we should solve first.

On the one hand, there are differences in the etymology (cf. Hopper & Traugott 1993, Heine & Kuteva 2002): relative markers can be interrogative-based, like *which* in (1a) above (also: *who(m)*, *whose* etc.), or demonstrative-based, like *that* in (1b) above.

On the other hand, there are differences in the position of these elements: relative markers can be relative pronouns, like the interrogative-based English pronouns *which*, *who(m)* etc. and the demonstrative-based German pronouns *der*/*die*/*das* etc., or they can be relative complementisers, like the demonstrative-based English *that* and the interrogative-based South German *wo* (cf. Bayer 1984, Salzmann 2006, 2017, Brandner & Bräuning 2013, Weiß 2013). Given the positional differences, it is not surprising that doubling patterns consisting of an overt relative operator and an overt relative complementiser are attested, as illustrated in (2):

(2)   % This is the problem *which that* we should solve first.

As indicated (%), this pattern is not accepted in all varieties of English (it is, for instance, excluded from the standard variety).

Regarding Germanic, Bacskai-Atkari (2020) made the observation that while overt relative pronouns and overt relative complementisers can be combined, these combinations appear to be restricted by the etymology, in that only asymmetric combinations are attested as genuine REL+REL combinations; that is, as combinations where both elements are attested as relative markers on their own as well.[1] This observation raises several questions. First, it should be clarified how strong the generalisation is cross-linguistically: in this article, I am going to examine Slavic data in this respect, as Slavic languages are known to have the various kinds of relative markers mentioned above. Consider the following examples from Bosnian-Croatian-Serbian (henceforth BCS):

(3)   a. čovjek *što*   puši
          man   that smokes
          'a/the man that smokes/is smoking'   (Gračanin-Yuksek 2013: 27)

      b. čovjek *koji*   puši
          man   which.NOM smokes
          'a/the man who smokes/is smoking'   (Gračanin-Yuksek 2013: 26)

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[1]As will be discussed in §2, this is not merely the result of what items are available. Both in English and in German, wh-based pronouns are available; in addition, both of these languages have varieties where wh-based complementisers are attested. Nevertheless, WH+WH combinations are not attested in these varieties either.

The relative clause is introduced by the complementiser *što* in (3a) and by the relative pronoun *koji* (inflected for case) in (3b). Both of these elements are wh-based: as will be discussed in §3, this is the regular Slavic pattern (see Auderset 2020 for typological insights). The relevance of this pattern for testing the validity of the above-mentioned hypothesis is clear: while Germanic languages tend to have asymmetric patterns due to the availability of demonstrative-based relative markers, the wh-based Slavic patterns may provide us insights into whether the lack of wh+wh patterns is systematic or rather coincidental in nature.

Second, the question arises how apparently excluded combinations can be analysed synchronically: while pointing to the etymology may be satisfactory for descriptive purposes, it is highly unlikely that it can be taken as a grammatical constraint per se. In this article, I will argue that the etymological differences correspond to differences formulated in terms of morphosyntactic features.

Third, related to this, the question arises what independent evidence we have for the featural properties of individual elements. Without such independent evidence, simply translating etymological differences into features would again amount to mere descriptive adequacy. The present paper argues that the combinations are restricted by the distribution of [rel] features that are ultimately determined by the etymology, but can show subsequent deviations.

The paper is structured as follows. In §2, I am going to briefly discuss the observations for Germanic. In §3, I will present the data from (South) Slavic, and I will provide an analysis for the doubling patterns in §4.

2 Germanic

In Germanic languages, we can observe doubly-filled COMP effects involving an overt pronoun and an overt complementiser; these can be assigned the schematic structure shown in Figure 1.[2]

The combination of a wh-pronoun and a d-complementiser can be observed in non-standard varieties of English (see van Gelderen 2009) and marginally also in Swedish, as shown by the data in (4).

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[2]I adopt a single CP analysis for doubling in relative clauses, following Bacskai-Atkari (2020); under this view, there are no designated projections for left-peripheral elements, unlike in cartographic approaches (going back to Rizzi 1997). Note also that while doubling is attested in these languages, it is altogether not very frequent (unlike in embedded interrogatives, where doubly-filled COMP effects are widely attested). Bacskai-Atkari (2022) attributes this to discourse factors: the relative pronoun is essentially redundant (at least when the relative complementiser is overt).
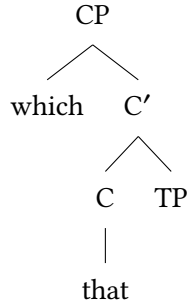
Figure 1: The structure of doubly-filled COMP

(4)　a.　It's down to the community *in which that* the people live.

<div align="right">(van Gelderen 2013: 59)</div>

　　b.　Detta är studenten　　*vilken som* bjöd　　in Mary.
　　　　this　is the.student　which that invited in Mary
　　　　'This is the student who invited Mary.'

<div align="right">(Bacskai-Atkari & Baudisch 2018: 247)</div>

The combination of a d-pronoun and a wh-complementiser can be observed in South German dialects (Brandner & Bräuning 2013, Weiß 2013, Fleischer 2017), illustrated for Hessian and for (North) Bavarian in (5a) and in (5b), respectively:[3]

(5)　a.　Des　Geld,　*des*　　*wo* ich verdiene, des　　geheert mir.
　　　　the.N money that.N REL I　　earn.1SG that.N belongs I.DAT
　　　　'The money that I earn belongs to me.'　　　　(Fleischer 2017)

　　b.　Mei Häusl　　(…), *dös*　*wos* dorten unten (…) steht
　　　　my　house.DIM　　that.N REL there　below　　　stands
　　　　'My little house, which stands down there'　　　(Weiß 2013: 780)

Given the differences between elements related to position and etymology, there are four logically possible configurations; out of these, only two are attested as genuine REL+REL combinations (that is, where both members are independently and productively attested as relative markers). This is shown in Table 1.

　　While the asymmetric combinations are straightforward, the D+D combination is at least questionable. On the surface, this kind of combination is attested in Waasland Dutch (Boef 2013), as shown in (6).

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[3]In these varieties, the wh-based complementisers also regularly introduce relative clauses on their own. The complementiser *wo* has a wider distribution geographically; note that it is not used as a declarative complementiser or as a mere finiteness marker.

Table 1: Combinations of genuine relative markers

	d-complementiser	wh-complementiser
d-pronoun	−/??	+
wh-pronoun	+	−

(6) Dat is de man *die dat* het verhaal verteld heeft.
    that is the man who that the story told has
    'That is the man who has done it.'   (Boef 2008: 93)

In this case, however, it is very probable that the combination cannot be considered as genuine REL+REL. In Dutch, relative clauses introduced by a single *dat* (as a complementiser) are found in Vlaams-Brabant Dutch (Boef 2013) and thus not in the same area where the doubling pattern is attested: in the doubling pattern in (6), then, the complementiser marks finiteness, not [rel].[4]

In other words, there is no strong evidence for the existence of genuine D+D doubling. More importantly, no combinations of the form "wh-pronoun + wh-complementiser" are attested (even though they would be logically possible in certain varieties, such as in English with the complementiser *what* and in South German with the complementisers *wo* and *was*).

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[4]The availability of *dat* as a finiteness marker is also independently motivated: it is also attested in embedded constituent questions across Dutch dialects, that is, in environments where it cannot be a declarative complementiser (see Schallert et al. 2018 for a recent discussion). Another potential counterexample to the generalisation in Table 1 comes from Old English (see van Gelderen 2009), as illustrated below:

(i) ac gif we asmeagaþ þa   eadmodlican dæda þa þe he worhte, þonne ne þincþ
    but if we consider those humble   deeds that that he wrought then   not seems
    us þæt nan wundor
    us that no   wonder
    'But if we consider the humble deeds which he wrought, that will seem no wonder to
    us.'   (*Blickling Homilies* 33; Watanabe 2009: 364, citing Allen 1980)

In Old English, we find the above doubling pattern as an intermediate stage in the process of reanalysis of one of the d-pronouns (*that*) into a complementiser, removing the original complementiser *þe* (van Gelderen 2009): this suggests that *þe* was possibly only a finiteness marker, or that the pronoun was initially still a demonstrative but not [rel]. This (and the Waasland Dutch pattern) crucially differs from the present-day English pattern, where *that*-relatives are common and productive: in other words, there is no reason to assume that patterns like (4a) would involve a mere finiteness marker.

3 The data

3.1 Relative markers in South Slavic

South Slavic languages are particularly interesting regarding the above generalisation, since these languages regularly use wh-based elements (cf. Kljajevic 2012: 36, Auderset 2020) as relative markers. In addition, both major strategies (that is, pronouns versus complementisers) are attested in (South) Slavic languages.

Consider again the examples from BCS in (3), repeated here for the sake of convenience as (7):

(7) a. čovjek *što* puši
        man   that smokes
        'a/the man that smokes/is smoking'   (Gračanin-Yuksek 2013: 27)

     b. čovjek *koji*   puši
        man   which.M.NOM smokes
        'a/the man who smokes/is smoking'   (Gračanin-Yuksek 2013: 26)

In (7a), the relative clause is introduced by the complementiser *što*; in (7b), it is introduced by the relative pronoun *koji*, which is, unlike the complementiser, inflected for case. This becomes evident if we compare the elements above, which occur in subject relative clauses, to their counterparts in direct object relative clauses, as shown in (8a) and (8b), and in indirect object relative clauses, as shown in (8c) and (8d):

(8) a. čovjek *što* ga   Jan vidi
        man   that 3SG.ACC.CL Jan sees
        'a/the man who Jan sees'   (Gračanin-Yuksek 2013: 27)

     b. čovjek *kojeg*   Jan vidi
        man   which.M.ACC Jan sees
        'a/the man who Jan sees'   (Gračanin-Yuksek 2013: 27)

     c. čovjek *što* mu   Jan   pokazuje put
        man.NOM that 3SG.DAT.CL Jan.NOM shows   way.ACC
        'a/the man to whom Jan shows/is showing the way'
                                                    (Gračanin-Yuksek 2013: 27)

     d. čovjek *kojem*   Jan   pokazuje put
        man.NOM which.M.DAT Jan.NOM shows   way.ACC
        'a/the man to whom Jan shows/is showing the way'
                                                    (Gračanin-Yuksek 2013: 27)

As can be seen, while *što* does not change its form, the relative pronoun is inflected for accusative and dative case.[5] Importantly, relative operators are phonologically identical to their interrogative counterparts (also inflected for case, number and gender); *što* is phonologically identical to the most unmarked interrogative form (nominative/accusative; the dative would be *čèmu*). The interrogative patterns are illustrated in (9) below:

(9)   a.   *Što*   je   Marija videla?
            what.ACC AUX Mary   seen
            'What did Mary see?'   (Halpern 1995: 77)

       b.   *Koji*   čovek je   voleo Mariju?
            which.M.NOM man   AUX seen   Mary.ACC
            'Which man saw Mary?'   (Halpern 1995: 78)

       c.   *Koju*   žabu   je   lane liznulo?
            which.F.ACC frog.ACC AUX fawn lick.PTCP
            'Which frog did the fawn lick?'   (Kljajevic 2012: 34)

The syntactic positions of the relevant elements are illustrated in Figures 2 and 3. We can observe the same variation between complementisers and pronouns in Macedonian, as shown in (10).

(10)   a.   Covekot   *koj*   vleze   e moj   sosed.
            man.the.M.SG who.M.SG come.AOR.3SG is my.M.SG neighbour
            'The man who came in is my neighbour.'   (Bužarovska 2009: 232)

       b.   Covekot   *što*   go   sretnavme   e moj   sosed.
            man.the.M.SG that 3SG.ACC.CL meet.AOR.1PL is my.M.SG neighbour
            'The man whom we met is my neighbour.'   (Bužarovska 2009: 232)

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[5]Note also another difference between the two strategies in (8), which cannot be seen in (7): the direct object and the indirect object relative clauses with *što* contain a resumptive pronoun (*ga* and *mu*, respectively), while this is not the case in the counterparts containing the relative pronoun. Resumptive pronouns are used to lexicalise the gap in certain languages: since in this respect they are similar to relative pronouns, it is actually expected that they should not co-occur with the relative pronoun while they can (and in the given cases, must, see Gračanin-Yuksek 2013: 27) surface when the relative clause is introduced by a complementiser. In this respect, the presence/absence of resumptive pronouns in (8) is yet another indicator for the structural difference between the relative markers under scrutiny. Note that the absence of resumptive pronouns in subject relative clauses is also expected: resumptive pronouns are more likely to occur in functions that are lower in the Noun Phrase Accessibility Hierarchy, and subjects constitute the highest function, so that the use of resumptive pronouns in this function is extremely rare cross-linguistically (Keenan & Comrie 1977).

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        CP                              CP
       /  \                            /  \
 koji/kojeg/...  C′               Op    C′
              /   \                    /   \
             C    TP                  C    TP
             |                        |
             ∅                        što
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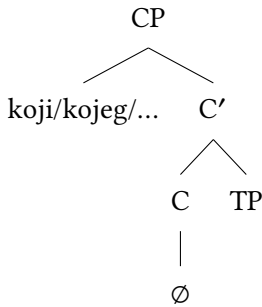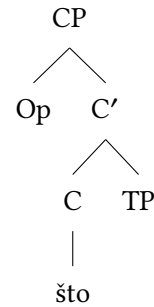
Figure 2: The position of relative pronouns in Slavic

Figure 3: The position of relative complementisers in Slavic

Again, both elements are interrogative-based. This is illustrated in (11) below:

(11) a. *Što* jade deteto?
       what eats child.the
       'What does the child eat?'   (Lazarova-Nikovska 2013: 134)

   b. *Koj*   te   potseti?
      who.CL 2SG.ACC.CL reminded.3SG.PERF.PRS
      'Who reminded you?'   (Tomić 2006)

Slovene also makes use of both strategies, as illustrated in (12):

(12) a. Poznam človeka, *katerega* so   iskali.
       know.1SG man.ACC which.ACC AUX.3PL looked.for
       'I know the man who they were looking for.'   (Hladnik 2010: 10)

   b. Poznam človeka, *ki* so   ga   iskali.
      know.1SG man.ACC that AUX.3PL M.ACC.CL looked.for
      'I know the man that they were looking for.'   (Hladnik 2010: 10)

The relative pronoun is inflected and it is obviously a wh-based element (Mitrović 2016: 225); the complementiser *ki* lacks an interrogative counterpart in the modern language (Mitrović 2016: 225) but it derives from Proto-Indo-European **kʷís* 'who, what' and Slovene *ki* developed into an interrogative complementiser after the 14th century (Mitrović 2016: 225). As Hladnik (2010: 38) notes, citing Cazinkić (2001), *ki* is often perceived to be a reduced form of the relative pronoun, which is etymologically wrong. Further, prescriptive rules favour the pronoun strategy over the complementiser strategy (Hladnik 2010: 38): this is in fact reminiscent of the situation in West Germanic.

3.2 A note on Bulgarian

Bulgarian represents a special case within South Slavic regarding relative markers. Both strategies (the pronoun strategy and the complementiser strategy) can be observed in Bulgarian, with the colloquial complementiser *deto* (Rudin 2014) and with regular relative pronouns, as shown by the corpus examples taken from Bužarovska (2009) in (13):

(13)   a.   Imaše   xora, *koito* ne viždaxa   ništo   pred
           have.IMPERF.3SG people who.PL not see.IMPERF.3SG nothing before
           sebe si.
           own CL
           'There were people who saw nothing in front of them.'
                                                  (Bužarovska 2009: 249)

       b.   Da bjaxa   mi   kazali,   če ima xora, *deto* bjagat
           SM be.PL.IMPERF 1SG.DAT.CL told.PL.PART that has people that run.3PL
           ot   dobroto   kato zajci   ot   kopoj...
           from good.the.N.SG like   rabbits from hound.M.SG
           'If I had been told that there are people who run away from good like
           rabbits from a hound...'   (Bužarovska 2009: 249)

The relative operator is evidently wh-based; as for *deto*, it also goes back to an interrogative operator (Bužarovska 2009: 234; see Krapova 2010: 1241 for a more detailed analysis) and, as mentioned above, it counts as colloquial, reminiscent of the prescriptive preferences for relative pronouns in Slovene and in West Germanic.

     Note that the situation in Bulgarian is in fact somewhat more complex, as wh-pronouns in relative pronouns are apparently complex: *koito* consists of the wh-base *koj* and the element *-to* (this pattern is productive, e.g. *kakvo-to* 'what' or *kolko-to* 'how much'), whereby the status of *-to* is subject to much debate, as discussed by Rudin (2014) in detail. The most important question in this respect is whether the combination is primarily syntactic (involving distinct syntactic positions) or morphological (involving a single syntactic node). Unlike *što*, *-to* is not available as a complementiser in other constructions and it does not resemble a wh-element either (Rudin 2014: 322). Rudin (2009) analyses this element as a specifically relative complementiser: in this case, Bulgarian would in fact show doubling, but note that as *-to* is not a wh-based element, this does not go against the generalisation under scrutiny here, i.e. that WH+WH combinations are regularly not attested; further, *-to* is not available as a relative marker on its

own, so that a genuine REL+REL doubling pattern would not arise either. Rudin (2014: 324) remarks that the complementiser approach faces problems with complex wh-phrases such as *kolkoto goljam* 'how big', where *-to* appears to be incorporated into the wh-phrase. According to Rudin (2014), a further problem lies in the fact that the complementiser account would predict more parallelism with *što*, which is problematic as e.g. *što* in Macedonian is banned from comparatives but Bulgarian *-to* is not. This is, however, not a strong counterargument: as argued by the present paper, relative complementisers may show different behaviour (and distribution) due to their different featural properties; further, relative complementisers appearing in comparatives show considerable variation, and *što* is in fact available in comparatives in BCS (see Bacskai-Atkari 2016 for discussion). Other analyses include treating *-to* as a definiteness marker (e.g. Izvorski 2000; see Rudin 2009 and Rudin 2014: 322–323 for counterarguments) or as a morphological marker of relative pronouns (Hauge 1999, see Rudin 2014: 325 for some concerns): in these cases, however, no complex left periphery is involved and these accounts would again not be problematic for the issues discussed in the present paper. For this reason, Bulgarian *-to* will not be discussed in §4.

3.3 Interim summary and outlook

In sum, it is evident that South Slavic languages by default show variation between the relative complementiser strategy and the relative operator strategy. It is worth mentioning that this kind of variation is not restricted to South Slavic but can be more generally observed across Slavic languages, though the exact distribution and acceptability patterns differ.

In West Slavic, the standard option seems to be the use of relative pronouns, but once non-standard varieties are also taken into account, we can also find relative complementisers in these languages, i.e. Czech and Polish *co* and Slovak *čo* (Šimík 2008, Guz 2017, Minlos 2012).

In East Slavic, both relative pronouns and relative complementisers are attested: while Russian *čto* is a markedly colloquial option (Meyer 2017), Ukrainian and Belarusian *ščo* seems to be more widespread (Danylenko 2018).

In other words, the variation between the relative complementiser strategy and the relative operator strategy is not restricted to South Slavic languages but can be found more generally in Slavic languages. The complementiser strategy is overall more restricted; South Slavic seems to offer the best testing ground for potential WH+WH combinations. For this reason, I am going to restrict myself to the discussion of South Slavic data in the discussion to follow.

4 Doubling

4.1 A note on features

I adopt standard minimalist assumptions regarding formal features, going back to Chomsky (1995); see also Zeijlstra (2014). According to this, the kind of features that can participate in morphosyntactic operations are called formal features: this set of features intersects with semantic features. Interpretable formal features are in the intersection; uninterpretable features are pure formal features (they cannot be interpreted at LF) and need to be checked off (or, in more recent terms, valued); this can be done via a matching interpretable feature. Note that the presence of any uninterpretable feature, [u-F], on a certain element implies only that the particular feature is not interpretable on that given element in LF, and it does not imply in any way that the given element would lack other semantic features (or meaning).

4.2 The analysis of doubling patterns

As mentioned in §2, doubling patterns appear to be asymmetric; this observation led Bacskai-Atkari (2020) to the hypothesis that the observed differences may be due to differences in the interpretability of [rel] features. According to this, we should have the following distribution: d-pronouns and d-complementisers are [i-rel] and wh-pronouns and wh-complementisers are [u-rel].[6]

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[6]One might wonder why this should be so: so far, this hypothesis gives the right empirical predictions, yet it would be desirable to detect more general properties behind the particular feature distribution. As far as Germanic is concerned, it is evident that demonstrative-based elements constitute the older strategy (see Ringe & Taylor 2014: 467 for Old English *þe* and Axel-Tober 2017: 46 for Old High German *the*): wh-based elements were introduced later into headed relative clauses, via analogy (from free relatives and interrogatives). Apart from this, note that the source elements differ in terms of definiteness features: demonstratives are definite, while the wh-base itself is indefinite (see Watanabe 2009, who also shows that the indefinite wh-base in English was also quantificational, turning the clause into a complete proposition, which was incompatible with headed relatives). Relative pronouns are co-referential with the head noun under a matching analysis (cf. Salzmann 2017: 55–179) and definite pronouns are thus natural candidates as anaphors. Indeed, the reanalysis of demonstrative markers into C-elements is traditionally considered to have evolved from paratactic structures involving a genuine demonstrative pronoun, since such examples are indeed possible and attested unlike with interrogative pronouns (but see Axel-Tober 2017 for a critical evaluation of this as the sole trigger of the relevant changes). In this sense, it is possible that the features [i-rel] and [u-rel] are ultimately related to the definite versus indefinite distinction, respectively. Future research will have to determine whether this idea is on the right track and, if so, how the diachronic feature inheritance can be modelled.

At any rate, the asymmetric patterns ensure proper feature checking, as shown in Figures 4 and 5. In both configurations, the uninterpretable feature is properly checked off by its interpretable counterpart. By contrast, symmetric patterns are essentially problematic for feature checking. In the case of two [i-rel] features, the movement of the operator is not motivated; in the case of two [u-rel] features, the uninterpretable feature cannot be checked off. Relative complementisers regularly encode finiteness, [fin].

CP
which$_{[u\text{-}rel]}$ C′
C$_{[i\text{-}rel],[fin]}$ TP
that$_{[i\text{-}rel],[fin]}$

Figure 4: Features in WH+D

CP
der$_{[i\text{-}rel]}$ C′
C$_{[u\text{-}rel],[fin]}$ TP
wo$_{[u\text{-}rel],[fin]}$
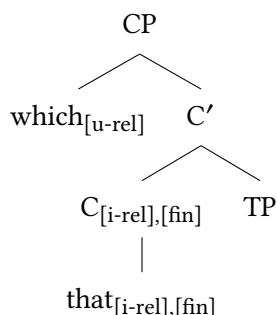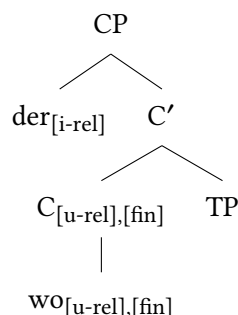
Figure 5: Features in D+WH

Regarding the former, we observed in §3 that some d-pronoun + d-complementiser combinations seem to exist, even though they were classed as not genuine. In the case of Waasland Dutch, the complementiser *dat* marks finiteness, and is thus underspecified for [rel]. In the case of Old English, *þe* was in the process of losing its [i-rel] specification, ultimately changing into being underspecified for [rel] and marking finiteness only, similarly to the Waasland Dutch combination.[7] This suggests that D+D patterns can be accounted for in this model: an underspecified complementiser is used to lexicalise the complementiser and the abstract [u-rel] feature can be checked off regularly by the pronoun, as illustrated for Waasland Dutch in Figure 6.[8]

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[7]Note that this does not make two projections necessary (i.e., one for clause type and one for finiteness, as in cartographic approaches like that of Rizzi 1997 or Baltin 2010), as also shown by Bacskai-Atkari (2020) for embedded interrogatives. Intervening elements (which are often used as arguments for designated projections in cartographic approaches) are not attested in Germanic between clause-type markers (including finiteness markers).

[8]The mismatch between the underlying syntactic feature bundle and the inserted vocabulary item is in line with the core property of Distributed Morphology called Underspecification, according to which the inserted Vocabulary Items (the phonological expressions of abstract words) are not necessarily fully specified for the particular syntactic positions where they are inserted (see McGinnis-Archibald 2016: 401–405 for a summary; see Halle & Marantz 1994, Harley & Noyer 1999). This is a basic property of Late Insertion and it does not go against inclusiveness (Chomsky 1995: 225).
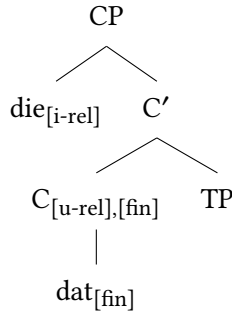
CP
die[i-rel]   C′
C[u-rel],[fin]   TP
dat[fin]

Figure 6: Doubling in Waasland Dutch

Note that there is independent evidence for the d-complementiser as under-specified for [rel]: the same complementiser appears in declaratives, where there are no head nouns. One might wonder why lexicalising the (finite) C position is necessary: this seems to be a general tendency in Germanic (Bacskai-Atkari 2018, 2020) and it is not of further interest in this paper.

Crucially, the more problematic wh+wh patterns are not attested in Germanic. However, South Slavic shows variation here: while such combinations are not attested in BCS (Goodluck & Stojanović 1996: 292) and Slovene (Hladnik 2010: 12–13), this pattern appears to be possible in Macedonian (Rudin 2014: 320). This is illustrated by the following example:

(14) čovekot *koj-što* zboruva
      the.man who-that talks
      'the man who is talking'   (Rudin 2014: 316)

The pattern in (14) seems to be productive: it is attested with all relative pro-nouns. The only exception is when the pronoun also has the form *što*, so that the sequence *što što* is ungrammatical (Rudin 2014: 320, citing Kramer 1999). This may well be a phonological constraint (and as such it is not direct evidence against the pronominal status of the second *što* element): as shown by Bošković (2002), similar constraints can be observed in multiple wh-fronting in Slavic lan-guages.

Importantly, both relative markers in (14) are clearly interrogative-based, as their surface-identical counterparts are available as interrogative operators, as shown in (11) above and in (15) below:

(15)   a. *Koj* zboruva?
          who talks
          'Who is talking?'   (Rudin 2014: 315)

b. *Što* sakaš?
 what want.2sg
 'What do you want?' (Rudin 2014: 320)

The data thus suggest that (14) apparently has a wh+wh pattern, which seems to contradict the hypothesis mentioned above. In order to determine to what extent (14) actually poses a problem for the theory, the distribution of the complementiser should be examined further. In Macedonian, *što* is also available as a declarative complementiser (Rudin 2014), as demonstrated in (16):

(16) Se raduvam, *što* ve gledam.
 refl rejoice.1sg that you.pl.acc see.1sg
 'I am happy that I see you.' (Tomić 2006: 419)

This differs from the wh-based complementisers in Germanic, which may also be the reason for the differences regarding the doubling patterns in relative clauses. Regarding the status of *što* in relative clauses, Rudin (2014: 320) provides strong arguments that it should definitely taken to be a complementiser (contrary to Tomić 2012). First, the doubly-filled COMP patterns such as (14) indicate that it cannot be a pronoun, as it appears in addition to the relative pronoun:[9] note that the word order constraint follows from the internal structure of the CP (Bacskai-Atkari 2018, 2020). Second, there is independent evidence for *što* being a complementiser otherwise, see (16) above. Third, prepositions cannot take relative *što* as a complement (the same applies to English *that*).[10]

Based on these observations, the structure in itself is not problematic, as it appears to demonstrate the same underlying syntax as the doubling patterns mentioned above and it can be derived from the structures in Figures 2 and 3 in a straightforward way, as shown in Figure 7.

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[9]Unlike interrogative pronouns, which can co-occur in a single clause, there can only be a single relative pronoun in a relative clause: the head noun is co-referential with the relative pronoun, which can be base-generated only in a single position. See also Rudin (2014: 320).

[10]This is shown by the following example:

(i) * studentkata, *za* *što* zboruvame
 student about that speak.1pl
 Intended: 'the student about whom we speak' (Rudin 2014: 320)

Rudin (2014: 320), citing Tomić (2012) and Kramer (1999), confirms that such patterns are impossible in relative clauses. Note that this of course does not imply anything about the interrogative pronoun *što* in questions.

```
                    CP
                   /  \
                 koj   C′
                      /  \
                     C    TP
                     |
                    što
```
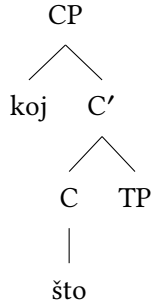
Figure 7: Doubling in Macedonian

The question is rather what the feature specification of *što* is. In essence, there are two possibilities: (i) underspecification for [rel], just like *dat* in Waasland Dutch, or (ii) specification as [i-rel].

Regarding the first hypothesis, we can establish the following. Underspecification in itself is plausible under a late insertion approach (Halle & Marantz 1993; see also the discussion in this section above), inasmuch as the abstract underlying head is lexicalised by a partial match (see Figure 6 for Waasland Dutch). This assumption is less problematic if the abstract head is [u-rel] than when it is [i-rel], since uninterpretable features are deleted anyway after check-off, so that Vocabulary Insertion taking place in the morphological component (after Spell-Out) does not actually see [u-rel]. The same argumentation does not follow automatically for [i-rel], though: leaving the C position in Macedonian as underspecified or as [u-rel] would require the relative pronoun to be specified as [i-rel], but there is no independent evidence for Macedonian wh-operators to be different from the general properties of wh-based relative markers, that is, creating an exception for wh-based relative pronouns in Macedonian as [i-rel] would be ad hoc.[11] In principle, this possibility cannot be excluded but making such an assumption without independent evidence would be merely descriptive at this stage.

On the other hand, however, we have independent evidence for *što* having different properties from the Germanic pattern. In the hypothesis formulated in (ii) above, *što* is [i-rel], which actually implies a difference from the Germanic pattern. There are two points of interest here. First, doubling patterns in Germanic are primarily attested in embedded interrogatives and much less in relative clauses (Bacskai-Atkari 2022), due to the lexicalisation preference on C: the

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[11]This crucially differs from the Dutch scenario, where the d-pronoun can regularly be assumed to have an [i-rel] specification, in line with the general hypothesis.

same does not apply to Slavic. In other words, while both language groups may show doubling patterns in relative clauses, the underlying reasons are likely to be different, and thus it cannot be expected that the two groups show parallel behaviour in all respects. Second, regarding the status of *što*, it should be noted that such relative declarative complementisers in South Slavic introduce factives and not all kinds of declarative clauses, unlike what we can observe in Germanic.

Consider the following examples from BCS:

(17) a. Jesam   ti   rekao *da*   je   Marija orišla na odmor?
          AUX.1SG you.DAT told   that AUX.3SG Marija gone on vacation
          'Did I tell you that Marija went on vacation?'   (Arsenijević 2020: 341)

      b. Jesam   ti   rekao *što* je   Marija orišla na odmor?
          AUX.1SG you.DAT told   that AUX.3SG Marija gone on vacation
          'Did I tell you that Marija went on vacation?' (it is a fact that she did)
                                                              (Arsenijević 2020: 341)

In (17a), the embedded clause is non-factive: it may or may not be true that Marija went on vacation. In (17b), however, the embedded clause is factive: this is the context where *što* can appear. As Arsenijević (2020) argues, *što*-declaratives have referential properties and are thus similar to relative clauses (see Krapova 2010: 1266 for Bulgarian and Macedonian and Bužarovska 2009 and Browne 1986: 69 for Macedonian; see also Aboh 2005 for factives being a special kind of relative clause).[12] However, notice that there is no head noun and no relative operator movement in such configurations: this indicates that *što* cannot be [u-rel] in these constructions, as there would be no element to check off this feature. In other words, while the interrogative element can be assumed to have a regular [u-rel] feature, this feature is lost in factive declaratives.[13] This leads to the configuration shown in Figure 8.

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[12]This may be related to the fact that *što*-relatives in BCS are used in relative clauses where the head noun is familiar (see Arsenijević 2020: 341–342). Note that the familiarity of the referent (as expressed by the head noun) does not equal definiteness on the relative pronoun, as familiarity and definiteness are distinct (though not unrelated) properties. Consider the following example:

  (i)   I saw a/the shopkeeper who was wearing a kilt.

In (i), the head noun is either indefinite or definite: this does not affect the relative marker (the pronoun *who*).

[13]Note that the similarities between (factive) declaratives and relative clauses do not make the two constructions equal. In particular, they differ in terms of operator movement, as shown by Arsenijević (2009). In (headed) relative clauses, the matrix correlate (the head noun) is co-
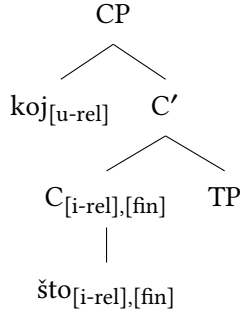
Figure 8: Features involved in doubling in Macedonian

Note that the loss of [u-rel] does not make [i-rel] automatically available on the inserted lexical items as an inherent property: in particular, there is no wh+wh doubling in ordinary relative clauses in BCS, so there is no reason to assume that BCS *što* in ordinary relative clauses would be [i-rel]. By contrast, we can observe wh+wh doubling in ordinary relative clauses in Macedonian, indicating that Macedonian *što* is available as [i-rel]. In this way, we can set up an implicational hierarchy: wh-based declaratives are a prerequisite for wh+wh doubling in ordinary relative clauses but not vice versa. That is, the existence of wh-based declaratives does not imply the existence of wh+wh doubling in ordinary relative clauses.

5 Conclusion

In this paper, I examined doubling in South Slavic relative clauses, concentrating on the effects of the morphological inventory: crucially, both wh-pronouns and wh-complementisers are available in these languages. The typological predictions based on Germanic and Slavic are the following: (i) genuine wh+wh combinations are not attested, and (ii) the only exception is Macedonian, where

referential with the relative pronoun, which is interpreted in the relativisation site (the base position) and in the CP-domain (the landing site): such elements undergo movement. By contrast, while Arsenijević (2009) assumes that there is also a matrix correlate in (factive) declaratives, the co-referential nominal element in the subordinate clause has its relativisation site at the top of their structure, that is, in the projection that specifies the illocutionary force of the clause. In other words, this configuration involves a higher projection site and no relative operator movement; consequently, the feature checking relation discussed in the present article does not apply.

the wh-complementiser *što* has different properties (as supported by independent evidence), indicating that further (featural) reanalysis is possible. This indicates that while morphological properties are decisive for most patterns, they do not prohibit further grammaticalisation even in languages where the original wh-element is still available. In this sense, morphological properties are not deterministic, as morphosyntactic features may deviate from the original, predictable patterns.

Abbreviations

1	first person	N	neutral
2	second person	NOM	nominative
3	third person	PART	particle
ACC	accusative	PERF	perfective
AOR	aorist	PL	plural
AUX	auxiliary	PRS	present tense
CL	clitic	PTCP	participle
DAT	dative	REFL	reflexive
DIM	diminutive	REL	relative
F	feminine	SG	singular
IMPERF	imperfective	SM	subject marker
M	masculine		

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References

Aboh, Enoch Oladé. 2005. Deriving relative and factive clauses. In Laura Brugè, Giuliana Giusti, Nicola Munaro, Walter Schweikert & Giuseppina Turano (eds.), *Contributions to the Thirtieth "Incontro di Grammatica Generativa"*, 265–285. Venice: Cafoscarina.

Allen, Cynthia. 1980. *Whether* in Old English. *Linguistic Inquiry* 11(4). 789–793.

Arsenijević, Boban. 2009. Clausal complementation as relativization. *Lingua* 119(1). 39–50. DOI: 10.1016/j.lingua.2008.08.003.

Arsenijević, Boban. 2020. Referential properties of subordinate clauses in Serbo-Croatian. In Teodora Radeva-Bork & Peter Kosta (eds.), *Current developments in Slavic linguistics: Twenty years after (based on selected papers from FDSL 11)*, 341–353. Frankfurt am Main: Peter Lang.

Auderset, Sandra. 2020. Interrogatives as relativization markers in Indo-European. *Diachronica* 37(4). 474–513. DOI: 10.1075/dia.19030.aud.

Axel-Tober, Katrin. 2017. The development of the declarative complementizer in German. *Language* 93(2). 29–65. DOI: 10.18148/hs/2017.v0i0.19.

Bacskai-Atkari, Julia. 2016. Towards a cross-linguistic typology of marking polarity in embedded degree clauses. *Acta Linguistica Hungarica* 63(4). 389–409. DOI: 10.1556/064.2016.63.4.1.

Bacskai-Atkari, Julia. 2018. Doubly filled COMP in Czech and Slovenian interrogatives. In Denisa Lenertová, Roland Meyer, Radek Šimík & Luka Szucsich (eds.), *Advances in formal Slavic linguistics 2016*, 1–23. Berlin: Language Science Press. DOI: 10.5281/zenodo.2545509.

Bacskai-Atkari, Julia. 2020. German V2 and doubly filled COMP in West Germanic. *The Journal of Comparative Germanic Linguistics* 23(2). 125–160. DOI: 10.1007/s10828-020-09117-x.

Bacskai-Atkari, Julia. 2022. Discourse-driven asymmetries between embedded interrogatives and relative clauses in West Germanic. In Nicholas Catasso, Marco Coniglio & Chiara De Bastiani (eds.), *Language change at the interfaces: Intrasentential and intersentential phenomena*, 189–214. Amsterdam: John Benjamins. DOI: 10.1075/la.275.06bac.

Bacskai-Atkari, Julia & Lisa Baudisch. 2018. *Clause typing in Germanic: A questionnaire and its results*. Potsdam: University of Potsdam. https://publishup.uni-potsdam.de/frontdoor/index/index/docId/40681.

Baltin, Mark. 2010. The nonreality of doubly filled Comps. *Linguistic Inquiry* 41(2). 331–335. DOI: 10.1162/ling.2010.41.2.331.

Bayer, Josef. 1984. COMP in Bavarian syntax. *The Linguistic Review* 3(3). 1–38. DOI: 10.1515/tlir.1984.3.3.209.

Boef, Eefje. 2008. Variatie in Nederlandse lange-afstandsrelatieven. *Taal en Tongval* 60. 90–120.

Boef, Eefje. 2013. *Doubling in relative clauses: Aspects of morphosyntactic microvariation in Dutch*. Utrecht: LOT.

Bošković, Željko. 2002. On multiple *wh*-fronting. *Linguistic Inquiry* 33(3). 351–383. DOI: 10.1162/002438902760168536.

Brandner, Ellen & Iris Bräuning. 2013. The particle *wo* in Alemannic: Only a complementizer? *Linguistische Berichte* 234. 131–169.

Browne, Wayles. 1986. *Relative clauses in Serbo-Croatian.* Zagreb: Institute of Linguistics.

Bužarovska, Eleni. 2009. Restrictive relative clauses in standard Macedonian and standard Bulgarian. In Mila Dimitrova-Vulchanova & Olga Mišeska Tomić (eds.), *Investigations in the Bulgarian and Macedonian nominal expression*, 230–260. Trondheim: Tapir Academic Press.

Cazinkić, Robert. 2001. Kategorizacija in razvrstitev oziralnikov *ki* in *kateri. Slavistična revija* 49. 55–73.

Chomsky, Noam. 1995. *The minimalist program.* Cambridge, MA: MIT Press.

Danylenko, Andrii. 2018. A tale of two pathways: On the development of relative clause chaining in East Slavonic. In Björn Hansen, Jasmina Grković-Major & Barbara Sonnenhauser (eds.), *Diachronic Slavonic syntax: The interplay between internal development, language contact and metalinguistic factors*, 361–386. Berlin: De Gruyter. DOI: 10.1515/9783110531435-013.

Fleischer, Jürg. 2017. *Relativsatz-Einleitung.* In *SyHD-atlas.* http://www.syhd.info/apps/atlas/#relativsatz-einleitung.

Goodluck, Helen & Danijela Stojanović. 1996. The structure and acquisition of relative clauses in Serbo-Croatian. *Language Acquisition* 5(4). 285–315.

Gračanin-Yuksek, Martina. 2013. The syntax of relative clauses in Croatian. *The Linguistic Review* 30(1). 25–49. DOI: 10.1515/tlr-2013-0002.

Guz, Wojciech. 2017. Definiteness and specificity in two types of Polish relative clauses. In Joseph Emonds & Markéta Janebová (eds.), *Language use and linguistic structure: Proceedings of the Olomouc Linguistics Colloquium 2016*, 323–342. Olomouc: Palacký University.

Halle, Morris & Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In Kenneth Hale & Samuel Jay Keyser (eds.), *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge, MA: MIT Press.

Halle, Morris & Alec Marantz. 1994. Some key features of Distributed Morphology. *MIT Working Papers in Linguistics* 21. 275–288.

Halpern, Aaron. 1995. *On the placement and morphology of clitics.* Stanford, CA: CSLI Publications.

Harley, Heidi & Rolf Noyer. 1999. Distributed morphology. *GLOT International* 4(4). 3–9.

Hauge, Kjetil Rå. 1999. *A short grammar of contemporary Bulgarian.* Bloomington: Slavica.

Heine, Bernd & Tania Kuteva. 2002. *World lexicon of grammaticalization.* Cambridge: Cambridge University Press. DOI: 10.1017/9781316479704.

Hladnik, Marko. 2010. *Restrictive relative clauses in Slovene and its spoken varieties.* Utrecht: Utrecht Institute of Linguistics OTS. (MA thesis).

Hopper, Mike & Elizabeth Traugott. 1993. *Grammaticalization.* Cambridge: Cambridge University Press.

Izvorski, Roumyana. 2000. A solution to the subcomparative paradox. In Roger Billerey-Mosier & Brook Danielle Lillehaugen (eds.), *WCCFL 19: The proceedings of the 19th West Coast Conference on Formal Linguistics*, 232–245. Somerville: Cascadilla Press.

Keenan, Edward L. & Bernard Comrie. 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8(1). 63–99.

Kljajevic, Vanja. 2012. *Comprehension of Wh-dependencies in Broca's aphasia.* Newcastle upon Tyne: Cambridge Scholars Publishing.

Kramer, Christina E. 1999. *Macedonian.* Madison: University of Wisconsin Press.

Krapova, Iliyana. 2010. Bulgarian relative and factive clauses with an invariant complementizer. *Lingua* 120. 1240–1272. DOI: 10.1016/j.lingua.2009.08.002.

Lazarova-Nikovska, Ana. 2013. On interrogative sentences in Macedonian: A generative perspective. *RCEAL Working Paper in English and Applied Linguistics* 9. 129–159.

McGinnis-Archibald, Martha. 2016. Distributed morphology. In Andrew Hippisley & Gregory Stump (eds.), *The Cambridge handbook of morphology*, 390–423. Cambridge: Cambridge University Press. DOI: 10.1017/9781139814720.015.

Meyer, Roland. 2017. The C system of relatives and complement clauses in the history of Slavic languages. *Language* 93(2). 97–113. DOI: 10.18148/hs/2017.v0i0.21.

Minlos, Philip. 2012. Slavic relative *čto / co*: Between pronouns and conjunctions. *Slověne* 1. 74–91. DOI: 10.31168/2305-6754.2012.1.1.5.

Mitrović, Moreno. 2016. A relative syntax and semantics for Slovenian. In Franc Marušič & Rok Žaucer (eds.), *Formal studies in Slovenian syntax*, 221–252. Amsterdam: John Benjamins. DOI: 10.1075/la.236.10mit.

Ringe, Donald & Ann Taylor. 2014. *The development of Old English.* Oxford: Oxford University Press. DOI: 10.1093/acprof:oso/9780199207848.001.0001.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar*, 281–337. Dordrecht: Kluwer. DOI: 10.1007/978-94-011-5420-8_7.

Rudin, Catherine. 2009. The Bulgarian relative marker *-to.* In Steven Franks, Vrinda Chidambaram & Brian Joseph (eds.), *A linguist's linguist: Studies in*

South Slavic linguistics in honor of E. Wayles Browne, 403–422. Bloomington: Slavica.

Rudin, Catherine. 2014. Sorting out *-to* and *što*: Bulgarian and Macedonian relative markers. In Jacek Witkoś & Sylwester Jaworski (eds.), *New insights into Slavic linguistics*, 315–326. Frankfurt am Main: Peter Lang.

Salzmann, Martin. 2006. Resumptive pronouns and matching effects in Zürich German relative clauses as distributed deletion. *Leiden papers in Linguistics* 3(1). 17–50.

Salzmann, Martin. 2017. *Reconstruction and resumption in indirect A'-dependencies: On the syntax of prolepsis and relativization in (Swiss) German and beyond.* Berlin: Mouton de Gruyter. DOI: 10.1515/9781614512202.

Schallert, Oliver, Alexander Dröge & Jeffrey Pheiff. 2018. Doubly-filled COMPs in Dutch and German: A bottom-up approach. Manuscript. Universität München / Universität Marburg. https://ling.auf.net/lingbuzz/003979.

Šimík, Radek. 2008. Specificity in (Czech) relative clauses. In Jacek Witkoś & Gisbert Fanselow (eds.), *Elements of Slavic and Germanic grammars: A comparative view*, 177–198. Frankfurt am Main: Peter Lang.

Tomić, Olga Mišeska. 2006. *Balkan Sprachbund morpho-syntactic features.* Dordrecht: Springer. DOI: 10.1007/1-4020-4488-7.

Tomić, Olga Mišeska. 2012. *A grammar of Macedonian.* Bloomington: Slavica.

van Gelderen, Elly. 2009. Renewal in the left periphery: Economy and the complementiser layer. *Transactions of the Philological Society* 107(2). 131–195. DOI: 10.1111/j.1467-968X.2009.01216.x.

van Gelderen, Elly. 2013. *Clause structure.* Cambridge: Cambridge University Press. DOI: 10.1017/CBO9781139084628.

Watanabe, Akira. 2009. A parametric shift in the D-system in Early Middle English: Relativization, articles, adjectival inflection, and indeterminates. In Paola Crisma & Giuseppe Longobardi (eds.), *Historical syntax and linguistic theory*, 358–374. Oxford: Oxford University Press. DOI: 10.1093/acprof:oso/9780199560547.003.0021.

Weiß, Helmut. 2013. Satztyp und Dialekt. In Jörg Meibauer, Markus Steinbach & Hans Altmann (eds.), *Satztypen des Deutschen*, 764–785. Berlin: Walter de Gruyter. DOI: 10.1515/9783110224832.764.

Zeijlstra, Hedde. 2014. On the uninterpretability of interpretable features. In Peter Kosta, Steven L. Franks, Teodora Radeva-Bork & Lilia Schürcks (eds.), *Minimalism and beyond*, 109–129. Amsterdam: John Benjamins. DOI: 10.1075/lfab.11.05zei.