

## **The Matching Analysis of Relative Clauses: Evidence from Upper Sorbian\***

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### **1 Introduction**

Relative clauses in Upper Sorbian are characterized by the peculiar feature that the suffix *ž* is obligatorily attached to the relativizer, as shown in (1).

- (1) Tón hólc, kotryž tam sedži, je mój bratr.  
the boy REL there sits is my brother  
'The boy who is sitting there is my brother.'

The aim of this paper is to argue that relative clauses in Upper Sorbian have the structure postulated by the Matching Analysis, and that the suffix *ž* is a reflex of the deletion of the head noun internal to the relative clause. According to this analysis, the relative clause in (1) has the structure shown in (2), with *ž* being the reflex of the deletion of the head noun *hólc*.

- (2) Tón hólc, [kotry ~~hólc~~ → ž]; tam t<sub>i</sub> sedži, je mój bratr.

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The paper is structured as follows. In section 2, I give a brief overview of the relativization strategies in Upper Sorbian. I discuss previous accounts to *ž*-suffixation and their inadequacy in section 3. In section 4, I provide evidence that relative clauses in Upper Sorbian require the Matching Analysis structure and that *ž*-suffixation is a morphological reflex of this structure. I will also argue for the inadequacy of the Head External Analysis and the Raising Analyses in this section. In section 5, I discuss some consequences of this analysis.

## 2 Relative Clauses in Upper Sorbian

Upper Sorbian has two strategies for the formation of relative clauses (cf. Bartels & Spiess 2012 for details). The first involves a relative pronoun — usually drawn from the set of interrogative pronouns — which agrees with the head noun in  $\phi$ -features, cf. (3a). The second involves an invariant relativizer, which does not agree in  $\phi$ -features with the head noun, cf. (3b).

- (3) a. Tón hólc, štóž/kotryž tam sedži, je mój bratr.  
the boy REL REL there sits is my brother  
b. Tón hólc, kiž tam sedži, je mój bratr.  
the boy REL there sits is my brother  
'The boy who is sitting there is my brother.'

The two strategies differ from each other in that the first puts no restriction on the relativized element, whereas the second is restricted to subject and objects<sup>1</sup>. The examples in (4) show that relativization of indirect objects is impossible with *kiž*, the examples in (5) show that relativization of comitative adjunct is impossible with *kiž* either<sup>2</sup>.

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<sup>1</sup> One sometimes reads in grammars of Upper Sorbian that *kiž* can be also used to relativize grammatical relations other than subject and direct object if a resumptive pronoun appears at the position of the relativized element (Bartels & Spiess 2012, pp. 230-1; Libš 1884, p. 198; Polański 1967, p. 79). It is not clear to me whether this is generally correct. My main informant rejected such sentences. It also clashes with the descriptions in grammars for both the standard language (Fasske 1981, p. 625; Šewc-Schuster 1976, p. 169) and the colloquial language (Schneider 1853, p. 104; Seiler 1830, p. 115). Moreover, the Lower Sorbian equivalent *kenž* is also incompatible with resumptive pronouns. I therefore stick to the restriction that *kiž* is only compatible with subject and object relative clauses.

<sup>2</sup> Note that the inflected forms of *štóž* other than the nominative diachronically represent inflected forms of *kiž*.

- (4) a. tón hólc, √komuž/√kotremuž ja sym tón knihu dał  
 the boy REL REL I am the book given  
 b. tón hólc, \*kiž ja sym tón knihu dał  
 the boy REL I am the book given  
 ‘the boy I gave the book to’
- (5) a. tón hólc, √z kimž/√z kotrymž ja sym rejwał  
 the boy REL REL I am danced  
 b. tón hólc, \*kiž ja sym rejwał  
 the boy REL I am danced  
 ‘the boy I danced with’

Importantly, irrespective of the strategy, the suffix *ž* has to appear on both types of relativizers, cf. (6)

- (6) a. \*Tón hólc, štó/kotry tam sedži, je mój bratr.  
 the boy REL there sits is my brother  
 b. \*Tón hólc, ki tam sedži, je mój bratr.  
 the boy REL there sits is my brother  
 ‘The boy who is sitting there is my brother.’

### 3 Previous Analyses of *ž*-Suffixation

There exist two approaches to *ž*-suffixation in Upper Sorbian. The first treats *ž* as a derivational suffix that turns an interrogative pronoun into a relative pronoun (Fasske 1981, p. 615; Polański 1967, p. 72; Šewc-Schuster 1976, p. 168), illustrated in (7).

- (7) relative pronoun = interrogative pronoun + *ž*

The second takes *ž* to be a variant of the Upper Sorbian subordination marker *zo* (Libš 1884, p. 190; Schaarschmidt 2002, p. 34). Accordingly, the relative clause in (1) would have the corresponding structure in (8)<sup>3</sup>.

<sup>3</sup> A variant of this approach is formulated in Šěrak 1973, p. 101. She speculates that *ž* is a general subordination marker. Therefore, it also attaches to relative pronouns and adverbial complementizers (cf. 10). However, given her broad definition of subordination, *ž* is expected to occur on *zo* as well, which it usually doesn't. It is moreover also expected that *ž* is able to attach to wh-items in embedded questions, contrary to fact (cf. 13).

(8) tón hólc [<sub>CP</sub> [<sub>SpecCP</sub> štó/kotry] [<sub>C'</sub> [<sub>C°</sub> ž] tam sedži]] je mój bratr

Each approach faces significant problems. The first approach runs into two problems. On the one hand, contrary to what this approach predicts, not every relativizer has an interrogative counterpart. There exists, for example, no interrogative counterpart to the relativizer *kiž*, cf. (9).

(9) \* Ki je to činiť?  
who is that done  
'Who has done that?'

On the other hand, not every element to which *ž* is suffixed is an interrogative element. For *ž* can also be suffixed to many adverbs, which operation turns them into adverbial complementizers, cf. (10).

(10) prjedyž	'before'	-	prjedy	'earlier'
dołhož	'as long as'	-	dołho	'long'
(hač)runjež	'despite'	-	runje	'just now'
ručež	'as soon as'	-	ruče	'quickly'

This second problem is more severe than it appears because the suffix *ž* has a very restricted distribution. More specifically, it either appears on relative pronouns or on adverbial complementizers. Moreover only very few monomorphemic words in Upper Sorbian end in *ž* (approximately 20), which means that this restricted distribution cannot be merely accidental. Given this restricted distribution, it is a serious defect of the approach treating *ž* as a derivational suffix that it is not able to provide any insight into the connection between adverbial complementizers and relative pronouns (cf. section 7 for an analysis establishing such a connection).

The second approach faces even more problems. The first problem it faces is that the general subordination marker presumably underlying *ž* is *zo* in Upper Sorbian, cf. (11), which means that an unmotivated chain of changes<sup>4</sup> is needed to get from *zo* to *ž*, cf. (12).

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<sup>4</sup> This chain of changes is unmotivated because it involves two changes that are otherwise unattested, namely, first, the drop of the final vowel and, second, the change from *z* to *ž*. Although the former change occurs with masculine pronouns in the accusative, turning *joho* into *joh*, it is part of a general change turning bisyllabic forms of personal pronouns into monosyllabic ones. Other instances of this change do not involve *o*-deletion, but

(11) Ja věm, zo je to wopak.  
 I know that is that mistake  
 'I know that that was a mistake.'

(12) tón hólc [CP [SpecCP štó/kotry] [C' [C° zo] tam sedži]] je mój bratr  
 → tón hólc [CP [SpecCP štó/kotry] [C' [C° ž] tam sedži]] je mój bratr

The second problem is that contrary to what is predicted, *ž* does not appear in all embedded clauses, but only in relative clauses, cf. (13).

(13) Ja věm, kotry/štó(\*ž) je to činił.<sup>5</sup>  
 I know who who is that done  
 'I know who did that.'

The last problem of the second approach is that it doesn't capture the position of *ž*. As the example in (14) demonstrates, *ž* can appear internal to a pied-piped constituent.

(14) To je ta žona, [NP čējuž knihu] sym ja čitał.  
 that is the woman whose book am I read.  
 'That is the woman whose book I read.'

This is unexpected because the whole NP in (14) occupies SpecCP so *ž* is predicted to be able to follow that whole NP; this, however, is completely ungrammatical, cf. (15b).

(15) a. To je ta žona, [CP [SpecCP [čēju knihu]<sub>i</sub>] [C' [C° ž] [TP t<sub>i</sub> sym ja čitał]]]  
 b. \*To je ta žona, čēju knihuž sym ja čitał.

Also this problem is more severe than it might appear. One could argue that (14) involves an instance of Left Branch Extraction. If so, then the

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dropping of the first syllable (for example, *jemu* → *mu*). And although the second change is attested in many inflectional paradigms, it is reflex of palatalization in all these instances, that is, a reflex of *z* being followed by a front high sonorant. This context does not appear in the case at hand, so the similarity is deceptive.

<sup>5</sup> Even though free relatives are formed with the same set of relativizers (*štož/kotryž/kiž*), the subordinate clause in (13) cannot be understood as a free relative because the predicate *wědžeć* does not accept NP objects.

sentence does not contain the bracketed NP from (14) in SpecCP but only the relativizer *čeju*, followed by *ž* in C°, as shown in (16).

(16) To je ta žona, [<sub>CP</sub> [<sub>SpecCP</sub> čeju<sub>i</sub>] [<sub>C</sub> [<sub>C°</sub> ž] [<sub>TP</sub> [<sub>NP</sub> t<sub>i</sub> knihu] sym ja čitał]]]

Although appealing, this alternative cannot be maintained. On the one hand, Left Branch Extraction is optional in Upper Sorbian so that (15b) would still be wrongly predicted to be grammatical. On the other hand, clitic interrogative particles such as *ha* or *da* (cf. Franks & King 2000: 175 for their clitic status), which occur in the same position as the subordination marker *zo*, are licit in both positions, cf. (17).

(17) a. √ Čeju knihu **ha/da** sy ty čitał?  
           whose book QPRT are you read  
       b. √ Čeju **ha/da** knihu sy ty čitał?  
           whose QPRT book are you read  
           ‘Whose book did you read?’

The data in (15) and (17) also show that *ž* is not a second position clitic similar to *ha/da*. For if it were one, its positional options should be identical to that of *ha/da*. But as the contrast between (17a) and (15b) shows, this is not the case.

In sum, the two previous approaches to *ž*-suffixation are empirically unsatisfactory.

#### 4 A New Analysis of *ž*-Suffixation

##### 4.1 *ž*-Suffixation as a Reflex of Ellipsis

The claim I want to put forward in this section is that *ž*-suffixation is the reflex of the syntactic structure of relative clauses in Upper Sorbian. As I will argue presently, the syntactic structure underlying relative clauses in Upper Sorbian is the one postulated by the Matching Analysis (Chomsky 1965, Cinque 2015, Citko 2001, Katz & Postal 1964, Salzmann 2006). The structure of the relative clause in (1) according to the Matching Analysis is shown in (18)<sup>6</sup>.

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<sup>6</sup> Here and throughout the paper, numerical indices indicate coreference relations, whereas alphabetical subscripts indicate antecedent-trace relations.

- (18) tón hólc<sub>1</sub> [<sub>CP</sub> [kotry ~~hólc<sub>1</sub>~~]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
 the boy REL there sits is my brother

As this structure indicates, the Matching Analysis embodies three claims about the structure of relative clauses. First, there are two instances of the head noun, one internal to the relative clause and one external to the relative clause. Second, these two instances are independently base-generated, that is, they are not related via movement to each other. Third, the instance of the head noun internal to the relative clause is elided. It is this ellipsis operation that I will argue ž-suffixation is a reflex of; cf. (19).

- (19) Ž-SUFFIXATION ACCORDING TO THE MATCHING ANALYSIS  
 Base Structure: tón hólc<sub>1</sub> [<sub>CP</sub> tam [kotry hólc<sub>1</sub>] sedži] je mój bratr  
                   the boy there REL boy sits is my brother  
 A'-Movement: tón hólc<sub>1</sub> [<sub>CP</sub> [kotry hólc<sub>1</sub>]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
 Ellipsis:      tón hólc<sub>1</sub> [<sub>CP</sub> [kotry ~~hólc<sub>1</sub>~~]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
 ž-suffixation: tón hólc<sub>1</sub> [<sub>CP</sub> [kotry-ž]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr

#### 4.2 Advantages of the Matching Analysis

The decisive argument in favor of the Matching Analysis of relative clauses in Upper Sorbian comes from what I call *special contexts*. Special contexts are contexts that require lexical NPs but disallow all sorts of non-lexical NPs, including personal pronouns and indefinite pronouns. Two such contexts are illustrated in (20) and (21).

- (20) Marko je na √te **wašnje**/\***njo**/\***něšto** rěčał.  
 Marko is on the way it something spoken  
 ‘Marko has spoken in that way (\*it/\*something).’
- (21) To so w √**tych padow** /\***nich** /\***něčim** wobkedźbuje.  
 that REFL in these cases them something observes  
 ‘That was taken care of in these cases (\*them/\*something).’

In the remainder of this paper, I will refer to the relevant requirement imposed by special contexts as the *lexicity requirement*.

The reason why special contexts provide the decisive argument in favor of a Matching Analysis is because only this structure allows to correctly capture the distribution of special contexts in relative clause

structures. As mentioned above, the Matching Analysis assumes that there are two instances of the head noun — one inside the relative clause, the other external to it — that both instances are base-generated, and that the instance of the head noun internal to the relative clause is elided. These three assumptions lead to three predictions with respect to special contexts and relative clauses. *First*, the relative pronoun should be able to be compatible with a special context. This is predicted because a relative pronoun is a lexical NP in disguise, due to the ellipsis of its lexical noun, and as such it should be able to satisfy the lexicality requirement. *Second*, the head noun appearing external to the relative clause should also be compatible with a special context. This is predicted because if the head noun appears external to the relative clause, then the position it appears in is internal to the clause in which the relative clause is embedded. And if this position defines a special context, then the head noun occurring in this position can satisfy the lexicality requirement. (This prediction appears trivial but as we will see in the discussion of the Raising Structure, it is not.) *Third*, the relative pronoun and the head noun external to the relative clause should be able to be simultaneously compatible with special contexts. This prediction follows from the assumption that the two instances are base-generated and that they can therefore independently satisfy the lexicality requirement imposed by the special contexts. As the sentences in (22)–(24) show, all three predictions are borne out.

- (22) √ Te *wašnje*, **na kotrež** je Marko *rěčał*, je mje *překwapilo*.  
the way on which is Marko spoken is me surprised  
‘The way in which he spoke surprised me.’
- (23) √ Marko je *rěčał* **na wašnje**, *kotrež* je mje *překwapilo*.  
Marko is spoken on way which is me surprised  
‘Marko spoke in a way that surprised me.’
- (24) √ Marko je *rěčał* **na te wašnje**, **na kotrež** je *hižo*  
Marko is spoken on the way on which is already  
*jeho nan rěčał*.  
his father spoken  
‘Marko spoke in the way that already his father used to speak in.’

The sentence in (22) has a relative clause in which the relativized element originates in a special context. Since the relative pronoun is in fact a lexical NP, no problem with respect to the lexicality requirement arises; cf. the structure for (22) according to the Matching Analysis in (25).

(25) te wašnje [<sub>CP</sub> [na kotre ~~wašnje~~]<sub>i</sub> je Marko t<sub>i</sub> rečał] je mje překwapilo

In (23), the head noun in the clause hosting the relative clause originates in a special context. As the head noun is lexical, no problem arises in connection to the lexicality requirement; cf. the corresponding structure for (23) according to the Matching Analysis in (26).

(26) Marko je rečał na wašnje [<sub>CP</sub> [kotre ~~wašnje~~]<sub>i</sub> je mje t<sub>i</sub> překwapilo]

Finally, (24) shows that both the head noun and the relative pronoun can appear in a special context. Since both items are lexical NPs, the lexicality requirement imposed by the two special contexts can be satisfied, as the structure for (24) according to the Matching Analysis in (27) illustrates.

(27) M. je rečał na te wašnje [<sub>CP</sub> [na kotre ~~wašnje~~]<sub>i</sub> je hižo jeho nan t<sub>i</sub> rečał]

In order to complete the argument for the Matching Analysis, one also needs to show that the competing alternative proposals for the structure of relative clauses are not able to capture the distribution of special contexts in Upper Sorbian. This is what I will do in the following two parts.

#### 4.3 *The Inadequacy of the Head External Analysis*

The first alternative to consider is the Head External Analysis (Chomsky 1977 et seq.). It assigns a structure to a relative clause according to which the head noun originates outside the relative clause, whereas internal to the relative clause an operator-like element co-indexed with the head noun undergoes extraction; cf. the structure in (28) for the relative clause in (1).

(28) tón hólc<sub>i</sub> [<sub>CP</sub> [<sub>OP</sub> kotry<sub>1</sub>]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
       the boy           REL    there sits   is my brother

Under this approach, ž-suffixation is a reflex of A'-movement internal to a relative clause, as indicated in (29).

(29) Ž-SUFFIXATION ACCORDING TO THE HEAD EXTERNAL ANALYSIS

Base Structure: tón hólc<sub>1</sub> [<sub>CP</sub> tam [<sub>OP</sub> kotry<sub>1</sub>] sedži] je mój bratr  
the boy there REL sits is my brother  
A'-Movement: tón hólc<sub>1</sub> [<sub>CP</sub> [<sub>OP</sub> kotry<sub>1</sub>]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
ž-suffixation: tón hólc<sub>1</sub> [<sub>CP</sub> [<sub>OP</sub> kotry<sub>1</sub>-ž]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr

This alternative account cannot be upheld because it runs into trouble with special contexts. First, it predicts that relative pronouns should be barred from special contexts. This is predicted because operators are not lexical, and therefore cannot satisfy the lexicality requirement imposed by the special contexts. One might suggest that the grammaticality of relative pronouns in special contexts is due to A'-movement. However, then one predicts A'-movement from special contexts to be generally fine. But as the ungrammaticality of (30) shows, this is not the case.

(30) \* Na kotre/čo je Marko řečal?  
on what what is Marko spoken  
'What did Marko speak in?'

Second, it predicts that at least A'-movement of relative pronouns is always possible from a special context. But this prediction is not borne out either, cf. (31).

(31) \* Wón je so na něšto wobćežował, na kotrež ja  
he is REFL on something complained on which I  
sym pječa řečal.  
am allegedly spoken  
'He complained about something that I had allegedly spoken in.'

The ungrammaticality of (31) is unexpected under the Head External Analysis because A'-movement in relative clauses should guarantee compatibility with special contexts. However, on the assumption that the structure of relative clauses corresponds to the one postulated by the Matching Analysis, the ungrammaticality of (31) is predicted. For as shown in example (20) above, the indefinite pronoun *něšto* is illicit in special contexts. As *něšto* is also included in the relative pronoun in (31), the NP contained in the relative pronoun is not lexical enough to satisfy

the lexicality requirement imposed by the special context inside the relative clause, cf. (32)<sup>7</sup>.

(32) něšto [<sub>CP</sub> [na kotre šťθ]<sub>i</sub>] ja sym pječa t<sub>i</sub> řečaľ

#### 4.4 *The Inadequacy of the Raising Analyses*

The other alternatives to consider are Raising Analyses. They come in two varieties, the Head Raising Analysis (Kayne 1994, Bianchi 2000, Vries 2002) and the Promotion Analysis (Heycock 2014, Schachter 1973, Vergnaud 1974). Both analyses agree that the head noun originates inside the relative clause, but differ with respect to its final position. According to the Head Raising Analysis, the head noun is moved to some left peripheral position of the relative clause. It therefore remains inside the relative clause; cf. the structure in (33) for the relative clause in (1).

(33) tón [<sub>CP</sub> hólc<sub>k</sub> [kotry t<sub>k</sub>] tam t<sub>i</sub> sedži] je mój bratr  
the boy REL there sits is my brother

According to the Promotion Analysis, the head noun originates inside the relative clause and is then moved outside the relative clause into the matrix clause; cf. the structure in (34) for the relative clause in (1).

(34) tón hólc<sub>k</sub> [<sub>CP</sub> [kotry t<sub>k</sub>]<sub>i</sub>] tam t<sub>i</sub> sedži] je mój bratr  
the boy REL there sits is my brother

Under both analyses, ž-suffixation is a consequence of the movement the head noun, cf. (35) & (36).

#### (35) Ž-SUFFIXATION ACCORDING TO THE HEAD RAISING ANALYSIS

Base Structure: tón [<sub>CP</sub> tam [kotry hólc] sedži] je mój bratr  
the there REL boy sits is my brother

A'-Movement: tón [<sub>CP</sub> [kotry hólc]<sub>i</sub>] tam t<sub>i</sub> sedži] je mój bratr

Head Raising: tón [<sub>CP</sub> hólc<sub>k</sub> [kotry t<sub>k</sub>] tam t<sub>i</sub> sedži] je mój bratr

ž-suffixation: tón [<sub>CP</sub> hólc<sub>k</sub> [kotry-ž t<sub>k</sub>] tam t<sub>i</sub> sedži] je mój bratr

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<sup>7</sup> The upper case *što* in (32) is used because I wish to remain agnostic at this point how precisely *něšto* is structurally represented inside the relative pronoun.

(36) Ž-SUFFIXATION ACCORDING TO THE PROMOTION ANALYSIS

Base Structure: tón \_ [<sub>CP</sub> tam [kotry hólc] sedži] je mój bratr  
                  the       there REL boy sits is my brother  
A'-Movement: tón \_ [<sub>CP</sub> [kotry hólc]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
Head Raising: tón hólc<sub>k</sub> [<sub>CP</sub> [kotry t<sub>k</sub>]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr  
Ž-suffixation: tón hólc<sub>k</sub> [<sub>CP</sub> [kotry-ž t<sub>k</sub>]<sub>i</sub> tam t<sub>i</sub> sedži] je mój bratr

Either version of the Raising Analysis makes incorrect predictions vis-à-vis special contexts and therefore cannot be upheld.

The Head Raising Analysis incorrectly predicts that only relative pronouns are licit in special contexts. But as shown in (23) and (24), the head noun is licit in special contexts, too. This prediction seems bizarre but it follows from a crucial ingredient of this analysis, namely that the head noun never leaves the relative clause. This means that (23) has the structure in (37).

(37) Marko je řečal na [<sub>CP</sub> wašnje<sub>k</sub> [kotre t<sub>k</sub>]<sub>i</sub> je mje t<sub>i</sub> překwapilo]

As indicated, *wašnje* is not internal to the matrix clause and can therefore not satisfy the lexicality requirement imposed by the special context in the matrix clause. Crucially, the grammaticality of sentences such as (23) cannot be explained with the help of some mechanism that makes elements in the left periphery of clauses visible to superordinate clause, cf. (38).

(38) To, kogo Maria widziała, jest tajemnicą.<sup>8</sup>  
      that who Maria saw is secret  
      ‘Who Mary saw is a secret.’  
      = something is a secret  
      ≠ someone is a secret

(Borsley 1997, ex. 8)

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<sup>8</sup> It is important to stress that even though (38) is not a relative clause but a complement clause to the determiner *to*, it nevertheless counts as an argument against the Head Raising Analysis. For the crucial ingredient of this analysis is that complement clauses and relative clause have the same structure, namely D° + CP. If so, overt manifestations of this structure, such as (38), are predicted to behave identically to relative clauses, contrary to fact.





#### 4.5 Summary

To summarize this section, I have argued that only the Matching Analysis captures the distributional properties of head nouns and relative pronouns vis-à-vis special contexts. On the basis of this demonstration, I conclude that *ž*-suffixation, which so far has not received a satisfactory analysis, is the result of the ellipsis of the head noun inside the relative clause.

### 5 Consequences of the New Analysis of *ž*-Suffixation

#### 5.1 Benefits

The first benefit of the analysis of *ž*-suffixation relying on the Matching Analysis is that it faces no problems with the position of *ž* internal to an NP, cf. (14), repeated here as (43).

- (43) To je ta žena, [NP *čejuž* knihu] sym ja čitał.  
that is the woman whose book am I read.  
'That is the woman whose book I read.'

This ceases to be a problem because the instance of the head noun originates next to the possessive determiner *čeju*, so that consequently *ž* will be attached to *čeju* and not to the NP pied-piped by *čeju*, cf. (44).

- (44) to je ta žena [NP [D°[POSS° *čeju*]] ~~žony~~ knihu] sym ja čitał

Incidentally, the case mismatch between the nominative marked form *žona* and the genitive marked form *žony* does not preclude ellipsis as ellipsis is known to be insensitive to case specifications (Citko 2001).

The second benefit of the analysis relying on the Matching Analysis is that it does not predict *ž* to appear in all embedded clauses, because not all embedded clauses are relative clauses.<sup>11</sup> Therefore, no stipulative change from *zo* to *ž* is needed, let alone the stipulative restriction that it

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<sup>11</sup> I should note here that I am in fact quite sympathetic to the idea that all subordinate clauses are in fact relative clauses (cf. Arsenijević 2009, Caponigro & Polinsky 2011). Under this view, across the board *ž*-suffixation is nevertheless unexpected because subordinate clause and relative clauses proper still differ in many respects, for example with respect to the base positions of the shared head noun. It will then be these differences that *ž*-suffixation is sensitive to.

applies only in relative clauses, but not in embedded clause or indirect questions.

## 5.2 Problems

The new analysis of *ž*-suffixation seems to inherit all the problems of the analysis treating *ž* as a derivational suffix. But as I attempt to show in this part, these problems are only apparent.

The first problem is that *ki* is not a determiner, as predicted by the new analysis relying on the Matching Analysis, cf. (45).

- (45) a. Tón hólc, kiž tam sedži, je mój bratr.  
= Tón hólc, [ki hóle] tam sedži, je mój bratr.  
b.\* ki hólc

The suggestion I want to make is that *ki* is a determiner after all, but one that puts two specific restrictions on its syntactic environment. First, it requires its nominal complement to be elided; and second, it is restricted to relative clauses<sup>12</sup>. Although both requirements seem dubious, they are attested in other languages as well. The first requirement, Sorbian shares with the German indefinite determiner *welch-*. This determiner can be used as an indefinite only when its nominal complement is elided, cf. (46).

- (46) Wir brauchen Milch; haben Sie hier welche (\*Milch)?  
we need milk have you here which milk  
'We need milk; do you have any?'

The second requirement, Sorbian shares with Greek, which possesses specialized determiners for interrogative (Q), relative (REL), and free relative (FR) uses, cf. (47a–c), respectively.

- (47) a. Ποιος έρχεται;  
who.Q comes  
'Who is coming?'  
b. Ο άντρας ο οποίος έρχεται θα πάρει ένα δώρο.  
the man who.REL comes FUT take a present  
'The man who is coming will get a present.'

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<sup>12</sup> If Matching Analysis is universally valid, the first requirement follows from the second.

- c. Όποιος έρθει πρώτος θα πάρει ένα δώρο.  
 who.FR comes first FUT take a present  
 ‘He who/whoever comes first will get a present.’

So, *ki* in Upper Sorbian is similar to a combination of *ο οποίος* or *όποιος* in being restricted to very specific uses, and like *welch-* in requiring its nominal complement to be elided.

The second problem the new analysis faces is that *ž* appears on many adverbial complementizers. The suggestion I want to make is that this is not a problem at all but in fact a desired consequence of the new analysis. The appearance of *ž* on adverbial complementizers is only a problem if one wishes to treat adverbial clauses and relative clause separately. But both past and recent research on adverbial clauses (Caponigro & Polinsky 2011, Demirdache & Uribe-Etxebarria 2004, Haegeman 2010, Geis 1970) indicate that adverbial clauses are relative clauses modifying silent nouns in the matrix clause. According to this analysis, the examples in (48) have the corresponding structures in (49) (silent nouns are set in upper case).

- (48) a. Wón je domoj šoł, prjedyž dało so do deščika.  
 he is home gone before gave REFL to rain  
 ‘He went home before it started raining.’  
 b. Wón je domoj šoł, hdyž dało so do deščika.  
 he is home gone when gave REFL to rain  
 ‘He went home when it started raining.’
- (49) a. Wón je domoj šoł prjedy [TIME X [[~~TIME X~~] dało so do deščika]  
 → Wón je domoj šoł prjedy [TIME X [[-ž ] dało so do deščika]  
 b. Wón je domoj šoł [TIME X [[hdy ~~TIME X~~] dało so do deščika].  
 → Wón je domoj šoł [TIME X [[hdy-ž ] dało so do deščika].

Independent evidence for this analysis comes from the distribution of the concessive particle *-kuli* (Engl. ‘-ever’). This particle can attach to relative pronouns (cf. 50a), must not attach to interrogative pronouns (cf. 50b), but is compatible with adverbial complementizers (cf. 50c). In other words, adverbial and relative clauses form a natural class<sup>13</sup>.

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<sup>13</sup> I should stress though that this idea needs to be worked in more detail because not all adverbial complementizers combine with *ž*, cf. Fasske 1981, chapter 9.2.

- (50) a. Ty směš jěśc, štož(kuli) ty cejš.  
 you are.allowed eat whatever you want  
 ‘You can eat what(ever) you want.’
- b. Ja so prašam, hdyž(\*kuli) ty mje zawołaš.  
 I REFL ask whenever you me call  
 ‘I wonder when(\*ever) you call me.’
- c. Ja přińdu, hdyž(kuli) ty mje zawołaš.  
 I come whenever you me call  
 ‘I come when(ever) you call me.’

The third problem (raised by a reviewer) concerns the fact that ellipsis defines less strict identity requirements than movement, and that this is a problem for the Matching Analysis of relative clauses. However, it seems to me that this difference in fact supports the Matching Analysis. First, morphological identity is not required; case mismatches are fine in relative clause (cf. 44), similar to cases of nominal ellipsis (Citko 2001). Second, both types of ellipsis allow identity of sense interpretations, cf. (51).

- (51) a. John bought a hat, and Mary bought one, too.  
 b. John ordered the meal that Mary had ordered, too.

In both examples, neither the hat nor the meal are necessarily referentially identical. Lastly, wh-movement gives rise to Principle C effects in questions, but not in relative clauses, cf. (52). Whatever turns out to be the exact source of this difference, it shows that movement dependencies differ from the dependency between a head noun and a relative pronoun.

- (52) a. \*Which picture of John<sub>i</sub> did he<sub>i</sub> see in the article?  
 b. ✓ The picture of John<sub>i</sub> which he<sub>i</sub> saw in the article was flattering.

## 6 Conclusion

Based on contexts requiring lexical NPs, I argued that relative clauses in Upper Sorbian require the Matching Analysis. I showed that this allows for a simple analysis of ž-suffixation as a morphological reflex of the ellipsis of the head noun inside the relative clause. I argued against alternative analyses of ž-suffixation as a reflex of A'-movement of the relative

pronoun or as a reflex of head raising. I finally discussed the consequences of the analysis for the syntax of determiners and adverbial clauses in Upper Sorbian. I suggested that some determiners require an elided nominal complement and that adverbial clauses are relative clauses in disguise.

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