AGREEMENT (AND DISAGREEMENT) AMONG RELATIVES*

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ABSTRACT This paper examines non-restrictive relative clauses headed by pronominals and the agreement patterns which they exhibit. One such pattern is characterised by a conjunction of two restrictions on person agreement between the pronominal and the finite verb of the relative clause, namely person agreement only obtains when the pronominal is nominative and when its extraction site is the highest subject position within the relative clause (Akmajian, 1970; Heck & Cuartero, 2012; Morgan, 1972; Ross, 1970). A new analysis of these restrictions will be proposed and some of their implications will be explored.

1 Introduction

Relative clauses (RCs) headed by pronominals are understudied. This paper aims to contribute to this area of study by focusing on non-restrictive pronominal-headed RCs. Its main empirical thrust concerns the patterns of agreement between the pronominal RC head and the finite verb in the RC whose subject is the extraction site of the RC head, as in (1).

- (1) I, who ___ am tall, was forced to squeeze into that VW.
- In (1), the pronominal RC head I is related to the subject position (indicated by ___) of the finite verb am. As can be seen, there is person and number agreement between the RC head and the finite verb.

The interesting agreement patterns begin to emerge when the Case of the pronominal RC head and the distance of relativisation are varied (see Section 2). However, the fact that we have any agreement at all between

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^{*} I would like to thank the following people for putting up with the examples and providing judgements: my family (also the inspiration for the title!), András Bárány, Anna Bruggeman, Guido Gambera, Georg Höhn, Damar Hoogland, Bettina Juszak, Peer Nowack, and Jenneke van der Wal. I would also like to thank Ian Roberts and the audience at SyntaxLab on 25th February 2014, University of Cambridge, for all their attention, questions, comments and further judgements.

the pronominal RC head and a finite verb within a *non-restrictive* RC is also somewhat surprising.

Non-restrictive RCs block reconstruction effects (see Safir, 1986, 1999, for instance) (although see Guilliot (2006) and Bianchi (1999) on apparent reconstruction for anaphor binding in Breton and Italian respectively). This suggests that the extraction site in (1) might not be a copy of the RC head in the sense of Chomsky (1995). But if it is not a copy, how do we account for agreement between the RC head and the finite verb? The only option that seems to be left is to say that agreement between the RC verb and the RC head is direct. However, this leads to several problems. First, non-restrictive RCs are outside the scope of the determiner of the RC head. In other words, there is no part of the RC head that c-commands the finite verb of the RC. Given the mechanics of Agree (the probe-goal c-command relation) (Chomsky, 2001), this is a severe problem. Second, some analyses claim that the RC head does configurationally c-command the RC in non-restrictive cases, but claim that there is a functional head between the RC head and the RC which blocks all syntactic relations between the two (see Cinque, 2013; De Vries, 2002, 2006, for examples of this 'conjunction' analysis). Although this correctly prevents the RC being interpreted as being in the scope of the external determiner, it also blocks all syntactic agreement between the RC head and the RC verb. Such difficulties are what make non-restrictive pronominal-headed RCs so interesting empirically and theoretically.

The structure of this paper is as follows. Section 2 will present the data and establish the main empirical generalisations. Section 3 will consider some of the major aspects of Heck & Cuartero's (2012) analysis and highlight several issues with it. A new analysis of these generalisations will be developed in Section 4. The analysis in Section 4 has some implications for phase theory and the issue of the strict locality restrictions on person agreement which will be explored in Section 5. Section 6 will briefly touch on some agreement patterns in pronominal-headed RCs in Italian and German, and suggest some directions for the future. Section 7 concludes.

2 Data

Before we begin, it should be noted that first and second person pronominal-headed RCs are somewhat unusual to most if not all speakers that I consulted, i.e. they are stylistically highly marked and many speakers offer circumlocutions to express the same thing. What should be borne in mind, therefore, is not the acceptability of the example *per se* but rather the agreement pattern found within. Indeed, the markedness of such constructions means that exposure to them during language acquisition is likely to be minimal or even negligible.

The agreement patterns found, therefore, likely tell us something about our innate syntactic capacity.

The English agreement patterns with which this paper is concerned were all identified in the early 1970's in the context of RCs and cleft constructions (Akmajian, 1970; Morgan, 1972; Ross, 1970) and have recently been discussed in Heck & Cuartero (2012). This paper will only be concerned with RCs. I have also found that Dutch pronominal-headed RCs follow essentially the same patterns as English, as shown below.

2.1 Short-distance relativisation

First, let's consider short-distance relativisation, i.e. cases where the extraction site of the pronominal RC head is the highest subject position within the RC (Akmajian, 1970: 153-154; Heck & Cuartero, 2012: 50; Ross, 1970: 251).

- (2) a. I, who am/?is/*are tall, was...
 - b. You, who *am/?is/are tall, was/were¹...
 - c. He/she, who *am/is/*are tall, was...
 - d. We, who *am/*is/are tall, were...
 - e. You, who *am/*is/aretall, were...
 - f. They, who *am/*is/are tall, were...

... forced to squeeze into that VW.

As can be seen, person and number agreement obtains between the pronominal RC head and the finite RC verb. Note that many speakers also allow the pattern where number but not person agreement obtains, and a few speakers only allowed this pattern.

The pattern in (2) is also true of Dutch, with the slight complication that person agreement seems to be obligatory for second but not first person pronominal RC heads, which I do not attempt to analyse here. To avoid excessive repetition, I will include the glosses and translations for the first person examples only.

(3) a. \mathbf{Ik} , die moe $\mathbf{ben/is}$, ... I who tired am/is

- (i) a. I, who am/is tall, am/is always happy to have more leg-room.
 - b. You, who are/is tall, are/is always happy to have more leg-room.

This raises the question of whether the overt pronominal RC head is part of the matrix clause or the RC, but I will largely set aside this issue here.

¹ Note the unexpected agreement between *you* and the matrix verb in (2b) and (7b) permitted by some speakers. It seems that person agreement can fail in case the pronominal is modified by an RC.

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'I, who am/is tired, ...'<sup>2</sup>
b. Jij, die moe bent/*is, ...
c. Hij/zij die moe is, ...
d. Wij, die moe zijn, ...
we who tired are
'We, who are tired, ...'
e. Jullie, die moe zijn, ...
f. Zij, die moe zijn, ...
```

In (2) and (3), the pronominal RC head is in the nominative Case, as assigned by the matrix clause. When it is in a Case that is non-nominative, however, person agreement is impossible in English, but number agreement still obtains (Akmajian, 1970: 154; Heck & Cuartero, 2012: 62; Ross, 1970: 251).

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(4) He had the nerve to say that to...
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a. ... me, who has/*have made him what he is today.
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b. ... you, who has/*have made him what he is today.

c. ... **him/her**, who **has/*have** made him what he is today.

d. ... us, who *has/have made him what he is today.

e. ... you, who *has/have made him what he is today.

f. ... them, who *has/have made him what he is today.

These judgements were the most robust of the three sets of judgements exemplified in this section. Note that (4b) where you agrees with the RC verb in singular number immediately falsifies Kayne's (1989, 2000) claim that English you is always grammatically plural. These data clearly show that English has both a singular and a plural second person pronoun which are homophonous.³

The same judgements given for English are essentially true of Dutch. Person agreement with a first person pronominal RC head is either highly degraded or impossible. Where possible, person agreement with a second person pronominal RC head is slightly less degraded, but it is degraded nonetheless and markedly different from the judgements in (3) where the pronominal RC head was in the nominative Case.

² One speaker permitted second person but not first person agreement. The other two speakers both found second person agreement was virtually obligatory whilst first person agreement was optional. Assuming this is a genuine syntactic effect, I do not have an explanation for this.

³ One speaker found *have* in (4b) somewhat acceptable, but nonetheless had a clear contrast between (4b) and (4e).

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a. ... mij, die moe ??/*ben/is, ... me who tired am/is

'... me, who is tired, ...'

b. ... jou, die moe ?/*bent/is, ...

c. ... hem/haar die moe is, ...

d. ... ons, die moe zijn, ...

... us who tired are

'... us, who are tired, ...'

e. ... jullie, die moe zijn, ...

f. ... hen, die moe zijn, ...
```

Note that these data speak against De Vries' (2002) claim that Dutch pronominal-headed RCs exhibit Case matching effects.

The first empirical generalisation to be made, then, is:

(6) Generalisation 1

Person agreement between the pronominal RC head and the RC verb is only possible when the pronominal RC head is in the nominative Case.

2.2 Long-distance relativisation

Let's now move on to long-distance relativisation, i.e. cases where the extraction site of the pronominal RC head is *not* the highest subject position. Morgan (1972: 284) observes that in English person agreement fails in cases of long-distance relativisation (see also Heck & Cuartero, 2012: 77).⁴ The data from my consultants supports this.

- (7) a. I, who Mary claims is/*am responsible, was...
 - b. You, who Mary claims is/*are responsible, was/were...
 - c. **He/she**, who Mary claims **is/*are** responsible, was...
 - d. We, who Mary claims are/*is responsible, were...
 - e. You, who Mary claims are/*is responsible, were...
 - f. They, who Mary claims are/*is responsible, were...

... not even there at the time.

⁴ In fact, Morgan (1972: 284) claims that there is no acceptable variant in cases of relativisation over only one clause boundary; the effect is only claimed to be visible at further depths of embedding:(i)I, who the FBI thinks *am/*is an anarchist, will doubtless be here.

My data support the overall observation but not the exact claim, as seen in (7). I therefore ignore this claim here (see also Heck & Cuartero, 2012: 77, fn 20).

As can be seen, person agreement is impossible in these cases, but number agreement still obtains. The judgements in (7) are somewhat simplified in that there are some speakers who permit person agreement in such cases, but even for such speakers person agreement generally becomes much more difficult the more deeply embedded the extraction site is, in accord with Morgan's (1972: 284) observation. This might indicate that, when judging (7), *Mary claims* is being treated more as a parenthetical element than one that is fully integrated in the syntactic structure. Whatever the reason, I will henceforth focus on the non-person agreement pattern only. Finally, note that number agreement obtains regardless of relativisation distance.

The same is also essentially true of Dutch.

- (8) a. **Ik**, die Mary denkt, dat moe *ben/?is, ...
 I who Mary thinks that tired am/is
 'I, who Mary thinks is tired, ...'
 - b. **Jij**,die Mary denkt, dat moe *bent/?is, ...
 - c. Hij/zij die Mary denkt, dat moe is, ...
 - d. **Wij**, die Mary denkt, dat moe **zijn**, ... we who Mary thinks that tired are 'We, who Mary thinks are tired, ...'
 - e. Jullie, die Mary denkt, dat moe zijn, ...
 - f. **Zij**, die Mary denkt, dat moe **zijn**, ...

I should point out that all the Dutch speakers I consulted found embedded subject relativisation particularly awkward, with some speakers even rejecting them entirely (see also Section 6.2 on German). These judgements thus represent those of speakers who accepted such examples. What is notable is the contrast between (8a) and (8b) on the one hand, and (3a) and (3b) on the other. Whilst person agreement is fully acceptable in the latter, it is impossible in the former. Once again, number agreement is unaffected by relativisation distance.

Finally, as is now expected given the data in (4) and (7), long-distance relativisation with a pronominal RC head in a non-nominative Case does not permit person agreement but does permit number agreement. Judgements are given for English only.

- (9) He had the nerve to say that to...
 - a. ... me, who Mary claimed has/*have made him what he is today.
 - b. ... you, who Mary claimed has/*have made him what he is today.
 - c. ... **him/her**,who Mary claimed **has/*have** made him what he is today.

- d. ... **us**, who Mary claimed *has/have made him what he is today.
- e. ... you, who Mary claimed *has/have made him what he is today.
- f. ... **them**, who Mary claimed ***has/have** made him what he is today.

The second empirical generalisation to be made, then, is:

(10) Generalisation 2

Person agreement between the pronominal RC head and the RC verb is only possible in cases of short-distance relativisation.

2.3 Summary

The agreement patterns exhibited by pronominal-headed RCs are striking and call for an explanation. The empirical generalisations are summarised in (11).

- (11) a. Number agreement between the pronominal head and the RC verb is obligatory.
 - b. Person agreement between the pronominal head and the RC verb is impossible, unless:
 - i. the pronominal head is in the nominative case, and
 - ii. relativisation is short-distance.

In Section 4, I will develop an account of why number agreement is always available whilst person agreement obtains only when the conjunction of the conditions laid out in (11bi) and (11bii) are met.

3 Heck & Cuartero's (2012) analysis

Heck & Cuartero (2012) (henceforth, H&C) provide an analysis of the RC facts (and related cleft construction facts) for English and German in terms of Agree conceived as a feature sharing relation (Frampton & Gutmann, 2000, 2002; Pesetsky & Torrego, 2007; Pollard & Sag, 1994). Their main concern is to account for the agreement facts whilst maintaining the strong version of the Phase Impenetrability Condition (Chomsky, 2000), which says that the complement of a phase head becomes inaccessible to syntactic operations outside of the phase upon completion of that phase. In other words, the RC head is able to value the features on T inside the RC because the feature matrix of T coalesces with that of C. Since C is in the phase edge, it is able to mediate a syntactic Agree relation between the RC head and T. H&C (2012: 59) note that their analysis is thus incompatible with cyclic spellout. This is because T

still needs to be 'in the structure' to receive feature values from the RC head via Agree.

I will pursue a different line. I will argue that we should adopt the weaker (and independently motivated) version of the Phase Impenetrability Condition (Chomsky, 2001) (see Section 5.1 below). Furthermore, instead of Agree as feature sharing, I will adopt the idea that Agree essentially forms feature chains. Interestingly, H&C end up implicitly departing from Agree as feature sharing in their analysis. Feature sharing involves the coalescence of two feature matrices. This leads to a spellout problem, however, since the interfaces must somehow be able to tell which features came from which syntactic heads. H&C (2012: 70) thus propose an economy principle which states that Agree should preserve the integrity of feature matrices as much as possible. In essence, then, we return to Agree as the formation of feature chains. I will argue that this allows us to retain the idea of cyclic spellout, leading to a simple explanation of the failure of person agreement in long-distance relativisation.

Finally, H&C (2012: 79) explicitly reject a raising analysis although they make clear that they have not ruled out such an analysis in principle. I explore the possibility of a raising analysis, which leads me to further depart from some of H&C's assumptions. For example, I will assume that English who is a relative pronoun that is specified for number but not person (unlike interrogative who, which is specified for neither). H&C argue that who (relative and interrogative) is not specified for person and number. Furthermore, they argue that when who serves as the subject in an RC, it is actually a C head and not a relative pronoun (although whom is still a relative pronoun according to their analysis).

Although there are many more aspects to H&C's analysis, this brief summary of their main ideas should suffice as points of departure for my analysis.

4 A NEW ANALYSIS

4.1 The raising analysis (Bianchi, 2000a, 2000b; Kayne, 1994)

According to the raising analysis of RCs, the RC head originates inside the RC and, according to Kayne's (1994) theory, moves to the edge of the RC, i.e. to SpecCP. The RC CP then becomes the complement of the external determiner: this is the complement hypothesis (cf. the adjunction hypothesis). The general structure is shown in (12).

(12) D [RC [DP RC head]
$$\dots$$
 tDP \dots]

In cases involving the relative pronoun who, this analysis would say that who and the RC head are first-merged as a constituent inside the RC. This is not very appealing for who since who+Noun never occurs overtly (cf. which)

(Aoun & Li, 2003; Borsley, 1997). Furthermore, if the RC head originates entirely within the RC, why is person agreement between the RC head and the RC verb restricted? Without look-ahead, how would the system know if the extraction site will end up being more deeply embedded or not, and furthermore, how would the system know what grammatical role the RC head will eventually play in the matrix clause? This suggests that at least the person specification of the RC head does not originate inside the RC. In contrast, note that number agreement is completely unrestricted suggesting that the number specification of the RC head does originate inside the RC.

4.2 The matching analysis (Chomsky, 1977; Sauerland, 2003)

According to the matching analysis of RCs, the RC head is first-merged in the matrix clause but is co-indexed with a relative operator inside the RC (the relative operator being moved from its first-merge position in the RC to the edge of the RC, i.e. SpecCP, which accounts for island effects (Chomsky, 1977)). The general structure is shown in (13).

(13) D
$$[[NP RC head]_i [RC [Rel Op]_i \dots t_{Rel Op} \dots]]$$

Note that whilst the matching analysis is typically described as involving an adjunction structure, a matching analysis can involve a complementation structure as pointed out by Aoun & Li (2003) and as demonstrated by Schmitt (2000).

(13) would seem to provide a straightforward solution for the restrictions on person agreement. The RC head could have been assigned its matrix Case prior to co-indexing thereby determining whether person agreement occurs or not. Furthermore, by the time co-indexing occurs, the system will be able to tell whether the extraction site (of the operator) is in the highest subject position or not.

However, if this is the case, it is still not clear why person and number agreement should pattern differently. In other words, why is number agreement not sensitive to the Case of the RC head as assigned by the matrix clause and why can number agreement penetrate to any arbitrary depth of embedding within the RC? What this seems to suggest is that at least the person specification of the RC head originates as part of the matrix clause, whilst its number specification is arguably present on the relative operator. Interestingly, Sauerland (2003) provides evidence from Antecedent Contained Deletion that the relative operator cannot be structurally null but instead must be a near-complete copy of the RC head. Combining these ideas we could say that the relative operator contains the same number, but not person, specification as the RC head.

4.3 Raising or matching?

As far as pronominal RC heads are concerned, the only difference between the raising and matching analyses lies in whether the number specification of the RC head is *also* present in the matrix clause independently of the relative pronoun in the RC. According to the raising analysis, it is not, but according to the matching analysis, it is. The difference is schematically represented below.

- (14) RC head $\begin{bmatrix} RC & who & t_{who} \end{bmatrix}$ Person $\begin{bmatrix} RC & Number \dots & t_{Number} \end{bmatrix}$ (raising)
- (15) RC head [RC who t_{who}] Person+Number [RC Number . . . t_{Number}] (matching)

The question comes down to how pronominal RC heads are formed: do they arise discontinuously as in the raising analysis where the number-part of the pronominal originates inside the RC and is only combined with the person-part at the stage represented by (14)? Or do they arise continuously where the number- and person-part of the pronominal arise as a constituent, as in (15)? I will opt for the latter (see Section 4.6).

4.4 The complement hypothesis and it

On the basis of the close relationship between the external determiner and the RC, I will adopt the complement hypothesis, i.e. an analysis where the RC is the complement of the external determiner D. This relationship is seen in the following set of examples.

- (16) a. Paris was a beautiful city. (No RC)
 - b. * The Paris was a beautiful city. (No RC)
 - c. *Paris that I visited was a beautiful city. (RC)
 - d. The Paris that I visited was a beautiful city. (RC)

As can be seen, the presence of a (restrictive) RC licenses *the* with proper names.

A potential difficulty with using this evidence to support the complement hypothesis for *non*-restrictive RCs is that non-restrictive RCs pattern with (16a,b) not (16c,d), i.e. they behave like the examples without an RC. In other words, non-restrictive RCs do not require an external determiner.

- (17) a. Paris, which I visited last year, was a beautiful city.
 - b. * The Paris, which I visited last year, was a beautiful city.

However, whilst this may be true for non-restrictive RCs with lexical heads, those with pronominal heads arguably show that a D-layer is necessary for the presence of a non-restrictive RC. To see this, consider the pronoun *it* in English.

- (18) a. *It (= the tree), which has grown too tall, will be cut down tomorrow.
 - b. *It (= the baby), which/who never sleeps at home, will sleep soundly in public.
 - c. *I remember planting it (=the tree), which was now threatening the foundations of the house.
 - d. *I looked at it (= the baby), which/who was now sleeping soundly.
 - e. * It, which is now sunny, was raining earlier.

No matter what kind of it we choose ((non-)referential, (in)animate, (non-)weather, etc.), this pronoun simply cannot serve as an RC head. Why not? A straightforward solution presents itself if we adopt Cardinaletti & Starke's (1994, 1999) distinction between strong and weak pronouns. For them, it is a weak pronoun (it lacks the D-layer), whilst the pronouns which can head RCs are strong (they have the D-layer). The inability of it to head an RC of any kind is paralleled by Dutch het 'it' and German es 'it'. Further evidence for the inability of weak pronouns to head any kind of RC can also be found in French. For example, if one wishes to have a first person singular pronoun serve as the RC head, the strong form moi must be used, weak je being ungrammatical. These facts strongly indicate that the D-layer is crucial to the presence of a non-restrictive RC just in case the RC head is pronominal.

This is especially interesting in the light of Kayne's (1994) proposal for the derivation of non-restrictive RCs. According to Kayne, restrictive and non-restrictive RCs are derivationally identical prior to LF. At LF, however, the TP of a non-restrictive RC moves out of the scope of the external determiner, whilst in restrictive RCs it remains where it is. The fact that both restrictive RCs and non-restrictive pronominal-headed RCs require the D-layer for their RC heads strongly suggests a derivational parallelism prior to LF. My analysis will therefore mainly focus on this pre-LF part of the derivation since this is presumably where the Agree relations which are relevant to this paper are established (but see Section 4.7).

4.5 The feature structure of pronouns and relative pronouns

A lot of research has been done into the internal structure of pronouns (see Adger, 2011; Cardinaletti & Starke, 1994, 1999; Déchaine & Wiltschko, 2002,

inter alia). The general consensus is that pronouns are not structural 'atoms' in the sense that they cannot be decomposed, rather they have 'sub-atomic' structure of various sizes. To give just one illustrative example, Adger (2011) proposes that all pronouns have an [ID] feature (which marks them out as variables). Referential pronouns have a D-layer with a [def] feature plus a φ -layer, whilst some resumptive pronouns lack the D-layer but have the φ -layer. This yields a three-way typology.

(19) a. [ID] b.
$$[\varphi_P \varphi \text{ [ID]}]$$
 c. $[D_P D_{\text{[def]}} [\varphi_P \varphi \text{ [ID]}]]$

Approximately, (19a) corresponds to bare resumptives (see also Adger & Ramchand, 2005), (19b) to bare bound pronouns, and (19c) to referential pronouns.

Such structures could also be captured in purely featural terms. For instance, we could say that (19) corresponds to

(20) a.
$$[DP D_{[ID]}]$$

b. $[DP D_{[\varphi, ID]}]$
c. $[DP D_{[def, \varphi, ID]}]$

If this is the case, it is unable to license an RC not because it lacks a D-layer but because it lacks a [def] feature. For ease of exposition, I will henceforth adopt the schematics of (20) rather than (19).

Now, for simplicity, I will assume that English pronominals have only three features: Person, Number and Case, where Person and Number are specified (whilst Gender might distinguish *he* and *she*, it plays no role in English agreement morphology on T, so I ignore it).

(21)
$$[DP D_{[Person, Number, Case]}]$$
 (pronoun)

To capture the difference between *it* and the strong pronouns, I will assume that *it* lacks Person features (to the extent that Person features are associated with D rather than any lower head in the nominal projection (see Longobardi, 2008; Lyons, 1999, for example), this is consistent with the claims of Section 4.4 above).

As for the relative pronoun who, I will assume, based on the generalisations uncovered in Section 2, that it is has Person, Number and Case features, but is only specified for Number (cf. Heck & Cuartero, 2012). Its Person feature is always unspecified. I will also assume that who moves to SpecCP because it has an interpretable wh-feature which moves to satisfy the uninterpretable wh-feature and EPP property of the C head.

4.6 Putting it together

We are now in a position to put these various strands (the structure of RCs, the structure of pronouns and the structure of relative pronouns) together. Consider the example in (23).

(23) I, who am ...

[Case: Nom]

This would be derived via the stages in (24) to (27) (RDP = relative pronoun = who). For simplicity I will not show the wh-features on the relative pronoun and C, nor the EPP properties on C and T.

- T(24)[Pers:] [Num:] [Case: Nom] Τ (25)who TP RDP [Pers:] [Pers:] [Num: Sg] [Num: Sg][Case: Nom] [Case: Nom] Τ [CP [RDP who $] C [_{TP} [_{RDP}]$ who (26)[Pers:] [Pers:] [Pers:] [Num: Sg] [Num: Sg] [Num: Sg] [Case: Nom] [Case: Nom] [Case: Nom] Ι who $] C [_{TP} [_{RDP}$ who Τ CP RDP (27) $|_{\rm DP}$ [Pers: 1] [Pers: 1] [Pers: **1**] [Pers: **1**] [Num: Sg] [Num: Sg] [Num: Sg] [Num: Sg]
- (24) starts with the T head of the RC. T has unvalued Person and Number features and a valued Case feature (valued as Nominative). We could view the Case feature as Tense features (see Pesetsky & Torrego, 2001, 2007), but I will continue to label this feature Case in what follows. (25) shows the stage where the relative pronoun is merged in SpecTP. As the subject of this clause, I assume that the relative pronoun is first-merged in SpecvP and is probed by T's Person and Number features, thereby establishing the Agree relation. Agree thus allows the relative pronoun to get its Case feature valued, and T to get its Person and Number feature valued. Note, however, that because the relative pronoun has an unvalued Person feature, the Person feature of T will also remain unvalued after Agree (an idea familiar from unification-based (or

[Case: Nom]

[Case: Nom]

[Case: Nom]

feature-sharing) approaches to Agree, see Pesetsky & Torrego (2007) and Heck & Cuartero (2012) for examples within Minimalism; outside Minimalism, see LFG, for example). The relative pronoun moves to SpecTP to satisfy T's EPP property (not shown).

(26) shows the stage where the C head has been merged and the relative pronoun moves from SpecTP to SpecCP on account of the unvalued wh-feature and EPP property on C (not shown) (I am ignoring issues to do with the Subject Criterion (Rizzi & Shlonsky, 2007)). Finally, (27) shows the stage when the external determiner, in this case the pronoun I, merges with the RC CP. Because the relative pronoun and the pronominal RC head must match, the two form a relation that permits the relative pronoun to assume the Person feature value of the pronominal RC head. Recall, that T and the relative pronoun are also in a feature-sharing Agree relation. T thus gets its Person feature valued due to the matching relation between the pronominal RC head and the relative pronoun. Note that this matching relation must also be sensitive to some sort of Human feature, as seen in the following contrasts.

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(28) a. the boy, who/*which . . .
b. the tree, *who/which . . .
c. the cat, *who/which . . .
d. you, who/*which . . .
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(28c) shows that the relevant feature is Human rather than Animate.⁵

Furthermore, for matching to lead to valuation of the Person feature, recall that the Case of the pronominal RC head must be nominative. This suggests that nominative Case marks out Person as being 'visible' for morphological agreement, i.e. only a nominative-marked DP has Person features that can agree with T. Incidentally, this idea also implies that the Person features of the relative pronoun are only 'visible' to Agree when the relative pronoun is valued Nominative. For ideas on capturing the link between Case and (person) agreement, see Baker (Baker, 2008) and H&C (2012: 64).⁶ Therefore, it is only

⁵ Interestingly, proper names always take *who*, even if the name belongs to an animal, e.g. a pet. It is possible that this reflects some form of anthropomorphism (a coerced Human feature, perhaps). In this regard, it is also interesting to note that *who* seems to be marginally acceptable for some speakers with typical pet animals, e.g. cat or dog, but virtually impossible with atypical ones, e.g. raccoon or komodo dragon.

⁶ There is some evidence to suggest that number agreement is not sensitive to Case. Kimball & Aissen (1971: 241), in their study of number mismatches in a variety of Boston English, show that an element in SpecCP can override the number specification on T given to it by the subject in SpecTP (see also Baker, 2008; Kayne, 1989, 2000).

⁽i) a. a.Mark knows the people who Clark thinks are in the garden.

b. b.Mark knows the **people** who Clark **think** are in the garden.

when both the RC head and the relative pronoun are nominative that they can share Person features.

This proposal for the Case restriction remains somewhat stipulative, but its general outline suggests that we are right in thinking that the Number feature of the pronominal RC head must be present both on the RC head and on the relative pronoun. Consider what would happen if the pronominal RC head had valued Person but unvalued Number features.

D and who must match in terms of the Human feature, but φ -feature sharing is dependent on X = Y = Nominative. If Y = Nominative, but $X \neq Nominative$, we would rule out feature sharing between D and who. This is correct insofar as it rules out person agreement, but then the question is how the pronominal RC head gets its Number feature valued (although see footnote 7).

Another reason for thinking the pronominal RC head is not formed discontinuously lies in the fact that the pronominal RC head must already have its Case feature valued in order to determine whether Person agreement takes place or not. If it did not already have Case, the system would presumably have to wait until the RC head DP is complete and merges with a Case-assigning functional head of the matrix clause. However, if DP is considered a strong phase, like CP (as hinted at by Chomsky, 2001), then T would have been made inaccessible by the time DP is assigned Case, and person agreement should fail. This suggests that the RC head is present as part of the matrix clause prior to the merger of the RC as its complement (see Lebeaux (1988, 1990) for the late merger analysis, and Sportiche (2005) for the idea that selection is a strictly local relation but need not necessarily be satisfied upon first merge). I thus conclude that the pronominal RC head must come with valued Person and valued Number features, i.e. it is not created discontinuously, and that the relative pronoun and pronominal RC head must match in terms of Number and Human features.

Both options in (i) are available in this dialect. Option (ib) shows that *think* agrees with *people* rather than *Clark* in number. Note that *people* is an extracted subject. From their later discussion of cleft and pseudocleft sentences (Kimball & Aissen, 1971: 245), it seems that extracted direct objects can also trigger such non-standard number agreement. In other words, from what I can gather, speakers of this variety would accept (ii) as a grammatical option (I have not been able to test this yet).

⁽ii) Mark knows the **people** who Clark **think** John met yesterday.

Now let's consider cases of long-distance relativisation. The derivation reaches the stage in (26), repeated below as (30), where the relative pronoun has moved to SpecCP.

However, because this is long-distance relativisation, the C head in (30) is only an intermediate C head. In other words, the relative pronoun is only passing through this SpecCP position on its way to a higher one. At this point, note that T is specified for Number but not for Person. As the data show, this is how T remains in all cases of long-distance relativisation. This is not predicted by unification-based models (recall from Section 3 that H&C argue for Agree as feature sharing but end up resorting to Agree as feature chain formation), where two items in an Agree relation literally become one item for the purposes of further Agree relations. If it did, we could imagine that long-distance agreement would be permitted between the pronominal RC head and a T head embedded to any arbitrary depth so long as there was a chain of feature-sharing elements between the two, in this case that would be the relative pronoun. In other words, although T does not have a valued Person feature in (30), because it is in a feature-sharing Agree relation with the relative pronoun, as soon as the relative pronoun gets a Person feature value, the whole feature-sharing unit would automatically receive the same Person feature value. But this is not the case. I therefore propose that cyclic spellout 'freezes' the feature values of a head exactly as they are when that head is transferred. This means that, even if the relative pronoun does eventually get a Person feature value, this will make no difference to the feature values of T if T has already been spelled out. If T arrives at the interfaces without a valued Person feature, this is interpreted as third person (perhaps by default). (31) summarises this schematically.

Adopting the Phase Impenetrability Condition (PIC) of Chomsky (2001), regardless of what happens to the copy of the relative pronoun in the highest SpecCP position in (31), because the most deeply embedded CP has already been spelled out (indicated by strikethrough), there is no longer any way of

valuing the Person feature on T. I will have more to say about the PIC in Section 5.1.

4.7 A final note on non-restrictive RCs

So far, I have remained largely silent on the issue of how the non-restrictiveness of the RC is derived. This is because I have been more concerned with the agreement phenomena. Nonetheless, a few brief words on non-restrictive RCs are in order.

Non-restrictive RCs are outside the scope of the external determiner. As pointed out in the introduction several ways of capturing this have been proposed in the literature. At the end of Section 4.4, I briefly introduced Kayne's (1994) analysis, which would involve covertly raising the RC TP out of the scope of D (Kayne specifically names SpecDP as the target location). There is a problem for Kayne's analysis, however. The overt counterpart of raising the RC TP to SpecDP is Kayne's analysis of prenominal RCs (see also Xu, 1997). However, typological evidence suggests that prenominal RCs can never be non-restrictive⁷ (De Vries, 2006; Del Gobbo, 2010). It is thus doubtful that we should maintain such a strong structural parallel between the syntax of non-restrictive RCs and prenominal RCs.

Alternatively, the conjunction analysis of non-restrictives (Cinque, 2013; De Vries, 2002, 2006) could be used (though see Citko, 2008 for criticisms). Essentially, it proposes that the overt RC head forms the first conjunct and the non-restrictive RC forms the second conjunct (the second conjunct itself being more akin to a restrictive RC, or false free relative). The functional 'conjunct' head blocks all syntactic relations between the two. This proposal could be maintained if we say there is a full copy of the RC head inside the RC as well. If this is the case, my analysis could be said to apply to the derivation of the second conjunct only.⁸

Thus, whilst I do not commit to any particular analysis of non-restrictive RCs, I believe my analysis is compatible only with those analyses which predict a strong parallelism between (non-restrictive) pronominal-headed RCs and restrictive RCs.

⁷ More specifically, they can never be non-integrated non-restrictive RCs (see Cinque, 2013 for diagnostics). Integrated non-restrictive RCs may be prenominal (Del Gobbo, 2010).

⁸ If the overt RC head is part of the second conjunct, this may account for the possible absence of person agreement in the matrix clause in (2b) and (7b), see footnote 2.

5 Some issues

5.1 Phase theory

Chomsky, in various publications (Chomsky, 2000, 2001, 2008, for example), introduces the idea of phases making parts of the syntactic derivation inaccessible to further syntactic computation. Chomsky (2000: 108), for instance, defines the Phase Impenetrability Condition (PIC) as follows.

(32) PIC (version 1) In a phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations.

According to this definition, as soon as α , i.e. HP, is complete, the domain of H, i.e. its complement, becomes inaccessible to operations initiated by elements outside HP. Chomsky (2001: 14) restates the original formulation in (32) with the one in (33), where ZP is the smallest strong phase after HP.

(33) PIC (version 2) The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

The definition in (33) is 'weaker' than the one in (32) in the sense that the domain of H remains accessible for longer according to (33), i.e. a stage intermediate between HP and ZP can access the domain of H according to (33) but not (32).

Note that HP and ZP are assumed to be 'strong' phases. Chomsky identifies C and transitive v (v*) as strong phases, but hints that D may also qualify. Whether the definition in (32) or (33) is adopted, the T head in long-distance relativisation cases will be inaccessible by the time the external determiner is merged. However, the case of short-distance relativisation raises a slight difficulty. If the definition in (32) is adopted, we would expect T to be become inaccessible upon completion of the RC CP. This presumably occurs prior to its merger with the external determiner since the external determiner takes the RC CP as its complement. However, this would predict that T should never be able to get a Person feature from the RC head. This prediction is false, suggesting that the definition in (33), i.e. version 2 of the PIC, is correct.⁹

⁹ Version 1 of the PIC could be maintained if the RC CP is a weak phase. However, this seems unlikely: conceptually, this move would be a convenient stipulation, and empirically, if phases have anything to say about island phenomena, it would be odd for an RC CP to be a weak phase but a strong island. As mentioned in Section 3, H&C assume version 1 of the PIC and Agree as feature sharing but must abandon the idea of cyclic spellout.

5.2 SCOPA

Baker (2008, 2013) argues that person agreement is subject to much stricter locality constraints than, say, number agreement. The generalisation, termed the Structural Condition on Person Agreement (SCOPA), is stated as follows (Baker, 2008: 52).

(34) The Structural Condition on Person Agreement (SCOPA)

A functional category F can bear the features +1 or +2 if and only if
a projection of F merges with an NP that has that feature, and F is
taken as the label for the resulting phrase.

For example, if F = T, the SCOPA says that T can bear first or second person features if and only if either its specifier or its complement is an NP with those features. Given this definition, how is it possible for the Person feature of the pronominal RC head to be transmitted to the relative pronoun once nominative Case licenses an Agree relation between the two? The analysis so far has said that the complement of the external determiner is the RC CP and that the relative pronoun is in SpecCP. This configuration ought to rule out person agreement.

A recent analysis of relative pronouns proposed by Kratzer (2009) may provide a solution. Kratzer argues that relative pronouns are locally bound by a C head (C being a verbal functional head) and receive their features from the C head via Feature Transmission (FT). FT is defined as follows (Kratzer, 2009: 195).

(35) Feature Transmission under Binding

The φ -feature set of a bound DP unifies with the φ -feature set of the verbal functional head that hosts its binder.

In other words, there is φ -feature sharing between C and the relative pronoun. The crucial point here is that this means that the RC CP has the same φ -features as the relative pronoun in its specifier. Person agreement between the pronominal RC head and the relative pronoun is thus permitted by the SCOPA because the agreement relation is mediated by the Person feature on C, whose maximal projection is the complement of the external determiner.

The preservation of person and number information in RC contexts also behaves differently with respect to certain binding and predication configurations, as pointed out by Adger (2011: 356).

- (36) a. I am the one that is proud of himself/myself.
 - b. We are the ones that are proud of themselves/ourselves.
 - c. * We are the ones who are proud of himself/myself.

As (36a) and (36b) show, the preservation of person information is not obligatory. Contrasting these examples with (36c), however, we see that preservation of number information is obligatory. Further work is needed to establish the various differences between person and number agreement, but these are nonetheless intriguing data for the present paper.

6 Future (cross-linguistic) directions

The aim of this section is to give some idea of the variation found in the agreement patterns of pronominal-headed RCs in some well-known European languages: Italian and German. Whilst some observations will be made, I must leave more thorough cross-linguistic analysis for future research.

6.1 Italian

The following examples are based on those in Maiden & Robustelli (2007).

- (37) a. **Io**, che non **ho** mai detto una bugia, ... I that not have.1.sg never told a lie 'I, who have never told a lie, ...'
 - b. **Tu**, che non **hai** mai detto una bugia, ...
 - c. Lui/lei, che non ha mai detto una bugia, ...
 - d. **Noi**, che non **abbiamo** mai detto una bugia, ... we that not have.1.pl never told a lie 'We, who have never told a lie, ...'
 - e. Voi, che non avete mai detto una bugia, ...
 - f. Loro, che non hanno mai detto una bugia, ...

As can be seen, Italian exhibits person and number agreement when the pronominal RC head is nominative and relativisation is short-distance. Unlike English and Dutch, however, there is also person and number agreement when the pronominal RC head is non-nominative.

- (38) a. ... me, che giocavo a tennis
 ... me that played.1.sg at tennis
 '... me, who played tennis'
 b. ... te, che giocavi a tennis
 c. ... lui/lei, che giocava a tennis
 - d. ... **noi**, che **giocavamo** a tennis ... us that played.1.pl at tennis

- e. ... voi, che giocavate a tennis
- f. ... loro, che giocavano a tennis

Furthermore, there is no doubt that in cases of long-distance relativisation, person and number agreement is obligatory (the Case of the RC head has no effect), unlike English and Dutch.

- (39) a. **Io**, che Maria pensa che non **ho** mai detto una bugia, I that Mary thinks that not have.1.sg never told a lie 'I, who Mary thinks has never told a lie, ...'
 - b. **Tu**, che Maria pensa che non **hai** mai detto una bugia, ...
 - c. Lui/lei,che Maria pensa che non ha mai detto una bugia, ...
 - d. **Noi**, che Maria pensa che non **abbiamo** mai detto una we that Mary thinks that not have.1.pl never told a bugia, ...

lie

- 'We, who Mary thinks have never told a lie, ...'
- e. Voi, che Maria pensa che non avete mai detto una bugia, ...
- f. Loro, che Maria pensa che non hanno mai detto una bugia, ...
- (40) a. ... **me**, che Maria pensa che **giocavo** a tennis ... me that Mary thinks that played.1.sg at tennis
 - "... me, who Mary thinks played tennis"
 - b. ... te, che Maria pensa che giocavi a tennis
 - c. ... lui/lei, che Maria pensa che giocava a tennis
 - d. ... noi, che Maria pensa che giocavamo a tennis
 - ... us that Mary thinks that played.1.pl at tennis
 - "... us, who Mary thinks played tennis"
 - e. ... voi, che Maria pensa che giocavate a tennis
 - f. ... loro, che Maria pensa che giocavano a tennis

This pattern is also found in other null subject Romance languages, for example, Spanish (Butt & Benjamin, 2011) and Catalan (Wheeler, Yates, & Dols, 1999). This suggests that null subject languages have a null 'resumptive' subject inside the RC (see Chomsky, 1981: 240ff, 253ff; Rizzi, 1982) which is responsible for agreement.¹⁰

¹⁰ A quick Google search for the French 'moi, qui suis' ('I, who am') vs. 'moi, qui est' ('I, who is') will lead one to many grammar forums where the former option is deemed the only correct one. The very existence of such forum debates suggests that real usage might include the latter option too, suggesting that French may be closer to English and Dutch

A further point of interest lies in the use of *che* in the previous examples. *Che* ('that') can be used in restrictive and non-restrictive contexts. There are other options for non-restrictive contexts as well, for example, *il quale* ('the which'). Interestingly, non-restrictive pronominal-headed RCs are only compatible with *che* (exactly the same pattern is found in Spanish and Catalan). I take this as further evidence that the derivation of pronominal-headed RCs closely resembles that of restrictive RCs (see Section 4.4 above) more so than that of 'typical' non-restrictive RCs.

6.2 German

German exhibits a highly unusual pattern where the pronominal RC head is repeated inside the $RC.^{11}$

```
a. Ich, der ich müde bin, ...
I who I tired am
'I, who am tired, ...'
b. Du, der du müde bist, ...
c. i. Er, der (er) müde ist, ...
ii. Sie, die (sie) müde ist, ...
d. Wir, die wir müde sind, ...
we who we tired are
'We, who are tired, ...'
e. Ihr, dieihr müde seid, ...
f. Sie, die (sie) müde sind, ...
```

Repetition of the subject pronoun is virtually obligatory for first and second persons, but preferably absent for third person. Note that the pronouns in (41ci) and (41cii) may be replaced by demonstrative der and die respectively. This might suggest that er and sie are verging on being too weak to license the RC (see Section 4.4), which might in turn support the various analyses which argue that first and second person pronouns are 'stronger' than third person pronouns (see, for example, Déchaine & Wiltschko, 2002).

in showing restrictions on person agreement in pronominal-headed RCs. This might not be too surprising given that Italian, Spanish and Catalan are all null subject languages whilst French is a non-null subject language. The null resumptive pronoun option found in null subject languages might thus not necessarily be available to non-null subject languages like English, Dutch and non-standard French.

¹¹ H&C ignore this particular strategy. They note that, if the pronoun is not repeated, person agreement only appears in plural contexts. They attribute this to the absence of Case on the plural relative pronoun *die* (see their paper for details).

Note that this repetition strategy makes it impossible to tell whether the Case of the RC head affects the availability of person agreement.

```
a. ... mich, der ich müde bin
... me who I tired am
'... me, who is tired'
b. ... dich, der du müde bist
c. i. ... ihn, der (er) müde ist
ii. ... sie, die (sie) müde ist
d. ... uns, die wir müde sind
... us who we tired are
'... us, who are tired'
e. ... euch, die ihr müde seid
f. ... sie, die (sie) müde sind
```

Furthermore, German does not appear to permit long-distance subject relativisation at all, even though the pronominal RC head is repeated (recall that a slightly less extreme dispreference for such structures was seen for Dutch).

- (43) Der Mann, der Maria sagt, dass er mich gesehen hat, ...
 the man who Mary says that he me seen has

 "The man, who Mary says saw me, ...'

 The man, who says to Mary that he saw me, ...'

 (44) * Ich der du sagst dass ich mide bin
- (44) *Ich, der du sagst, dass ich müde bin, ...
 I who you say that I tired am
 (Intended) 'I, who you say is tired, ...'

It is far from clear how to analyse such repeated pronouns. It is unlikely that they are resumptive pronouns given that German does not really use resumptive pronouns elsewhere. The obvious generalisation is that they are present because the finite verb needs them for Person feature valuation. Third person pronouns need not be repeated because the relative pronoun is also 'third person'. The question this raises is why the constraint exists such that the finite verb inside the RC must exhibit full agreement with the RC head, i.e. why not simply use a default third person inflection on the verb? Although German is not a null subject language, the presence of a fully-specified subject inside the RC corresponding to the pronominal RC head does suggest a structural parallel with null subject languages. However, I must leave these issues for future research.

7 Conclusion

This paper has examined non-restrictive pronominal-headed RCs where the pronominal RC head is related to a subject position in the RC. We saw that number agreement between the pronominal RC head and the relevant finite RC verb always obtains, but that person agreement is subject to two conditions: (i) the pronominal RC head must be nominative, and (ii) relativisation must be short-distance.

Some morpho-syntactic parallels between non-restrictive pronominal-headed RCs and restrictive RCs were noted, which motivated treating the derivations of both in the same way (at least in all overt stages of the derivation) (Kayne, 1994). I proposed that the relative pronoun who enters the derivation with a valued Number feature and an unvalued Person feature and forms an Agree relation with finite T in the RC. The pronominal RC head enters the derivation outside of the RC proper and has both Person and Number features valued. A matching relation (which includes the Number feature) is argued to hold between the RC head and who and, if both are Case-marked Nominative, an Agree relation for Person does as well. If who gets a Person feature value in this way, it can pass it on to T via its Agree relation with it. But this only happens if T has not yet been spelled out. If it has, then even if who gets a Person feature value, T will only be spelled out with number but not person agreement. The analysis was found to be compatible with version 2 of the PIC (Chomsky, 2001) and with the SCOPA (Baker, 2008).

Finally, null subject languages such as Italian, Spanish and Catalan were observed not to have any restrictions on person agreement (or number agreement) in non-restrictive pronominal-headed RC contexts. German was seen to have an unusual strategy of repeating the pronominal RC head inside the RC thereby overcoming any restrictions on person agreement. An analysis of this variation was set aside for future work.

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