FISSION AND IMPOVERISHMENT IN VERNACULAR CATALAN CLITIC CLUSTERS

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1. Introduction: the phenomenon

The fact that clitic clusters constitute a locus of variation, idiosyncratic constraints, and incompatibilities is not new in any sense (Bastida 1976; Bonet 1994, 1995, 2002; Harris 1995; Harris and Halle 2005; Heap 1998). Catalan, which can admit grammatical sequences of up to six clitics (Bonet 1991), is a prime exemplar of this variability.

In a vernacular variety of Central Catalan (henceforth VCC), standard clitic clusters like that in (1)a, which combine the clitic of an inherently reflexive verb like *presentar-se* ('to show up') with a 1st or 2nd person object clitic, are substituted by a nonstandard cluster in which the 1st or 2nd person reflexive (which normally shares the φ-features of the co-indexed subject) is replaced by the clitic /s/ (*se*) as shown in (1b):

(1) a. Te' **m** presento per sorpresa[1] Standard Catalan (SC)
2sg-OBJ 1sg-OBJ show up-1sg-SUB by surprise
b. **Se**'t presento per sorpresa[2] VCC-SUBSTITUTION
se 2sg-OBJ show up-1sg-SUB by surprise
'I show up (to you) by surprise.'

Mascaró (1986) and Vilà i Comajoan (1989) described this phenomenon. Mascaró, in addition, noted that there appears to be an intermediate step between the *fully* specified SC clitic sequences (1a) and the *substituted* VCC clitic sequences (1b): *splitting*. Due to splitting, the inherently reflexive clitic arguably splits into two: one clitic that seems to carry the reflexive feature (/s/) and one that carries the person features. Therefore, (1a), before becoming (1b), goes through an intermediate stage as depicted by (2):

(2) **Se** te' **m** presento per sorpresa VCC-SPLITTING
se 2sg-OBJ 1sg-OBJ show up-1sg-SUB by surprise
'I show up (to you) by surprise.'

Though descriptively accurate, Mascaró's (1986) account does not explain why, how, or where this phenomenon originates, nor why the "extra" clitic is always /s/.

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[1] The abbreviations we will use in this study are the following: OBJ = object, ACC = accusative, DAT = dative, PART = partitive, LOC = locative, NEU = neuter, ABL = ablative, SUB = subject, 1/2/3 = 1st/ 2nd/3rd person, sg = singular, pl = plural, FUT = future.

[2] Catalan clitics have an underlying phonological form whose allomorphs change according to syllabic structure requirements (Bonet 2002). For example, clitic *es,* whose phonological form is /s/, may surface as /s/ (*s'*) before a vowel, as /sə/ (*se*) before *s* and as /əs/ (*es*) before any other consonant.

The present study aims to describe and explain the phenomenon in (1a-b) and (2), while exploring its restrictions and constraints. We argue that both splitting and substitution are different stages of the same morphological phenomenon. Using morphological rules within the framework of Distributed Morphology, our study also explains why this phenomenon only affects certain clusters but not others. The structure of the article is the following: in 1.1, we discuss attested and impossible clitic sequences in VCC. In section 2, we provide arguments to support our claim that these phenomena are, in essence, morphological. In section 3 we argue both splitting and substitution are, in fact, stages of the same phenomenon and we describe some motivations behind it.

1.1 Extent of splitting and substitution

The phenomenon described in the previous section is not tied to any person, number, or tense. Though it can occur with any combination of these, it cannot occur across the board (cf. section 1.2):

(3)	a.	Us **ens** vam trobar a la botiga 2pl-OBJ 1pl-OBJ go-1pl-SUB find at the shop[3]	SC
	b.	**S**'us **ens** vam trobar a la botiga *se* 2pl-OBJ 1pl-OBJ go-1pl-SUB find at the shop	VCC-SPLITTING
	c.	**S**'us vam trobar a la botiga *se* 2pl-OBJ go-1pl-SUB find at the shop[4] 'We found you at the shop.'	VCC-SUBSTITUTION
(4)	a.	Us **m**' uniré 2pl-OBJ 1sg-OBJ join.FUT-1sg-SUB	SC
	b.	**S**' us **m**' uniré *se* 2pl-OBJ 1sg-OBJ join.FUT-1sg-SUB	VCC-SPLITTING
	c.	**S**' us uniré *se* 2pl-OBJ join.FUT-1sg-SUB 'I will join you (pl.)'	VCC-SUBSTITUTION
(5)	a.	No **te** li mengis l'entrepà neg 2sg-OBJ 3sg-DAT eat-2sg-SUB the sandwich	SC
	b.	No **se te** li mengis l'entrepà neg *se* 2sg-OBJ 3sg-DAT eat-2sg-SUB the sandwich	VCC-SPLITTING
	c.	No **se** li mengis l'entrepà neg *se* 3sg-DAT eat-2sg-SUB the sandwich	VCC-SUBSTITUTION

[3] Periphrastic past tense in Catalan is formed with the auxiliary *anar* 'to go' conjugated in the present tense for the subject together with the infinitive form of the verb.

'Don't you eat his sandwich (on him).'

The position of the clitic cluster (in enclisis or proclisis) does not affect this phenomenon:

(6) a. Nosaltres podem endur-te'**ns** d'aquí SC
we can-1pl-SUB take-2sg-OBJ-1pl-OBJ from here
b. Nosaltres podem endur-**se**-t'**ens** VCC-SPLITTING
we can-1pl-SUB take-se-2sg-OBJ-1pl-OBJ
c. Nosaltres podem endur-**se**'t VCC-SUBSTITUTION
we can-1pl-SUB take-se-2sg-OBJ
'We can take you from here.'

Interestingly, this phenomenon allows for features that are necessarily lost in SC to surface in VCC. In order to illustrate this, we will make use of the predicate *imaginar-se* 'to imagine', which is typically an inherently reflexive verb. It is often the case that the reflexive clitic referring to the *imaginer* and the object clitic referring to the *imaginee* form a cluster that, in VCC, is subject to splitting and substitution:

(7) a. Te **m**' imagino a la platja SC
2sg-OBJ 1sg-OBJ imagine-1sg-SUB at the beach
b. **Se** te **m**' imagino a la platja VCC-SPLITTING
se 2sg-OBJ 1sg-OBJ imagine-1sg-SUB at the beach
c. **Se** t' imagino a la platja VCC-SUBSTITUTION
se 2sg-OBJ imagine-1sg-SUB at the beach
'I imagine you at the beach.'

However, if the imaginer and the imaginee are the same person (that is, if one imagines oneself), the reflexive clitic (i.e. the imaginer, in this case) is necessarily dropped in SC, as shown in (8). It is plausible to assume that the loss of this clitic is the result of applying the Obligatory Contour Principle (OCP), which bans certain identical consecutive features (Leben 1973, as adapted to clitic sequences by Heap (1998)).

(8) (*Em) **m**' imagino a la platja SC
1sg-OBJ 1sg-OBJ imagine-1sg-SUB at the beach
'I imagine myself at the beach.'

However, VCC, with its clitic substitution, allows for both to surface without violating the OCP because the substitution of the reflexive clitic leads to a dissimilated clitic:

(9) **Se m**' imagino a la platja VCC-SUBSTITUTION
se 1sg-OBJ imagine-1sg-SUB at the beach

Although the substitution is completely grammatical, the splitting is not since the OCP is still violated by the consecutive presence of the two /m/ clitics:

(10) ***Se**'m **m**' imagino a la platja VCC-SPLITTING
se 1sg-OBJ 1sg-OBJ imagine-1sg-SUB at the beach

The same contrast observed in (8-10) is true for all the other persons. Sentence (11) exemplifies the same contrast with the reflexive verb *enfadar-se* 'to get angry'. Sentence (11) is ambiguous because it has two alternative interpretations: *no t'enfadis* ('don't get angry') could mean don't get angry in general or don't get angry at yourself. The fragment in parenthesis disambiguates between the two possible alternative meanings:

(11) No **t**' enfadis (amb tu mateix) SC
neg. 2sg-OBJ annoy-2sg-SUB (with you same)
'Don't get angry (at yourself).'

VCC allows the mere presence of a clitic to disambiguate this sentence. In (12) it is clear that the person who gets angry and the one that is gotten angry at are the same:

(12) No **se t**' enfadis VCC-SUBSTITUTION
neg *se* 2sg-OBJ annoy-2sg-SUB

Importantly, /s/ is not a random string of sounds (Bonet 1991:91). As in many other Romance languages, /s/ appears in a wide variety of constructions in Catalan. Crucially, /s/ is also the 3rd person reflexive clitic in Catalan, both for singular and plural. Despite this overlap, none of the impoverished sentences that we have seen are ambiguous, thanks to the φ-features of the verb agreement, which are bound to the subject and, consequently ensure the reflexive pronominal reference of the sentence.

1.2 Ungrammatical sequences

Although these phenomena affect 1st and 2nd person singular and plural reflexive clitics in a wide variety of tenses, we do not find splitting and substitution of clitics across the board. In this subsection, we examine some of the substituted sequences that are not possible in VCC. Clitic clusters that involve a neuter (13), partitive (14), or locative (15) clitic do not admit splitting or substitution of clitics, even with clear subject reference:

(13) a. **T**' ho emportes SC / VCC
2sg-OBJ neut-OBJ take-2sg-SUB
b. ***Se t**' ho emportes
se 2sg-OBJ neut-OBJ take-2sg-SUB
c. ***S**' ho emportes
se neut-OBJ take-2sg-SUB
'You take this (from here).'

(14) a. **Me** n' emporto SC / VCC
1sg-OBJ PART take-1sg-SUB
b. ***Se me** n' emporto
se 1sg-OBJ PART take-1sg-SUB
c. ***Se** n' emporto
se PART take-1sg-SUB
'I take some (of these) (from here).'

(15) a. **M'** hi acosto SC / VCC
1sg-OBJ LOC approach-1sg-SUB
b. ***Se m'** hi acosto
se 1sg-OBJ LOC approach-1sg-SUB
c. ***S'**hi acosto
se LOC approach-1sg-SUB
'I get closer to it.'

One other ungrammatical sequence merits special attention. Clitic splitting and substitution cannot take place when the non-reflexive clitic in the cluster is an accusative 3rd person clitic (16). We refer to 3rd person clitics as accusative (and not object, as elsewhere) since this is the only person that overtly contrasts accusative and dative case.

(16) a. **Te** la vas trobar? SC / VCC
2sg-OBJ 3sg-ACC-fem go-2sg-SUB find
b. ***Se te** la vas trobar?
se 2sg-OBJ 3sg-ACC-fem go-2sg-SUB find
c. ***Se** la vas trobar?
se 3sg-ACC-fem go-2sg-SUB find
'Did you find her by chance?'

It should be noted that the 3rd person is not the source of the ungrammaticality. With a 3rd person dative clitic in the cluster, splitting and substitution are still grammatical in VCC:

(17) a. **Me** li acosto SC
1sg-OBJ 3sg-DAT approach-1sg-SUB
b. **Se me** li acosto VCC-SPLITTING
se 1sg-OBJ 3sg-DAT approach-1sg-SUB
c. **Se** li acosto VCC-SUBSTITUTION
se 3sg-DAT approach-1sg-SUB
'I get near him/her.'

In the following section we try to provide an explanation for all the attested instances of clitic splitting and substitution in VCC as well as for the ungrammatical ones. As we argue below, this phenomenon originates in the morphology of the VCC grammar.

2. A morphological phenomenon

In this study, we assume the Distributed Morphology framework (henceforth DM), introduced by Halle and Marantz (1993) as an alternative to previous approaches to the role of morphology within the grammar. Under this model, all derivations of complex structures are syntactic, whether they be sentence, phrase, or word structures. DM sees morphological operations, in the default case, as no different from syntactic operations.

Syntax itself does not manipulate lexical items but morphosyntactic features such as [plural] or [feminine], by combining them into hierarchical structures via syntactic operations such as Merge and Move. It is at Spell-Out that Vocabulary Insertion occurs. Vocabulary Insertion is the mechanism that supplies phonological expressions to the abstract features that were output by the syntax (Embick and Noyer 2007). A Vocabulary List contains a set of Vocabulary Items, which are pairings of phonological exponents together with information regarding where the given item may be inserted (Harley and Noyer 1999).

Under normal circumstances, a single Vocabulary Item is inserted at a specific terminal node (or morpheme). The Item that is selected for insertion is decided by fulfillment of the *Subset Principle* (Halle 2000). This principle dictates that an Item is inserted whenever it matches all or, crucially, a subset of the features specified by the terminal morpheme. An Item cannot be inserted if its specification contains features that are not required by the morpheme. This principle also posits that in the event that more than one Item can be inserted, it is the one that shares the greatest number of specified features that is inserted. Therefore, in the default case, the structure at PF is the linearization of the hierarchical structure of features output by the syntax (Embick and Noyer 2007).

For Catalan clitics, we propose the Vocabulary List under (18) as an initial template to which appropriate amendments will need to be made throughout this study. As shown in (18), there is no feature [reflexive], [feminine], or [dative] for [+participant] clitics because these features are not overtly expressed in these clitics in Catalan.

(18)

/m/	↔	[+participant +speaker -pl]
/t/	↔	[+participant -speaker -pl]
/nz/	↔	[+participant +speaker +pl]
/wz/	↔	[+participant -speaker +pl]
/li/	↔	[-participant -pl +dative]
/lz(i)/[5]	↔	[-participant +pl +dative]
/l(ə)/	↔	[-participant -pl ±feminine]
/l(ə)z/	↔	[-participant -pl ±feminine]
/u/	↔	[-participant +neuter]
/i/	↔	[-participant +oblique]

[5] /lz/ corresponds to the SC form whereas /lzi/ encodes the same features in VCC.

/n/ ↔ [-participant +oblique +partitive]
/s/ ↔ *elsewhere*

The content of the clitic /s/ is typically a source of debate. Because the difference between /s/ and the /l/ clitics is reflexivity, it could be argued that /s/ has the feature [+reflexive]. However, proposing that /s/ is [+reflexive] is problematic for two reasons. Firstly, the feature [+reflexive] would only exist for this purpose and, secondly, it would not accommodate other uses that the /s/ clitic has in Catalan (and other Romance languages), such as the impersonal (19) or the aspectual use (20).

(19) S' hi menja molt bé, aquí
se LOC eat-3sg-SUB very well here
'One eats very well here.'

(20) Es menja tot el que troba
es eat-3sg-SUB everything that find-3sg-pres
'He eats (up) everything he finds.'

For now, we will leave the /s/ clitic without any features – as a 'clitic with no properties' that may be inserted in an *elsewhere* fashion (Bruhn de Garavito et al. 2002). However, it will be shown that this is not consistent with some accounts of our data. Using the List in (18) as a starting point, we will examine possible sources of splitting and substitution observed in VCC data. We claim that these phenomena are located in the morphology (at Spell-Out, specifically). Before claiming this, we examine why these phenomena cannot be phonological or syntactic, and why they are not cases of mere syncretism.

2.1 A phonological phenomenon?

Proving that these are not phonological phenomena is relatively simple. Sequences of *te* (realized as [tə]) preceding [m] are common in Catalan (21), as are sequences where [uz] is followed by [nz] (22) or [əm] (23). In the following examples, these sequences, presented between square brackets, appear in different contexts that are not clitic clusters:

(21) Corrup[te m]alvat
corrupt mischievous
'Mischievous corrupt'

(22) [Us ens]enyarem a cantar
2pl-OBJ teach-1pl-SUB to sing
'We will teach you to sing.'

(23) [Us am]enaço
2pl-OBJ threaten-1sg-SUB
'I threaten you.'

In short, the phonological sequences produced by the fully specified clitic clusters in SC that disappear in the substitution of the VCC are perfectly acceptable in VCC. So it cannot be the difficulty of the phonological sequences that is triggering this substitution.

2.2 A case of syncretism?

The phenomena studied here might seem like a case of syncretism in VCC, in which 1st and 2nd person reflexive clitics (or [+participant] reflexive clitics) lose their distinction with respect to the 3rd person reflexive /s/. A similar type of syncretism is observed in a comprehensive study by de Benito Moreno (2015) of plural persons clitics in several Spanish and Catalan dialects. Although most of her data concerns reflexive clitics, she includes some instances of non-clustered non-reflexive clitics (24), from a variety of Catalan spoken in Penedès, and of non-reflexive clitic clusters (25), from a variety spoken in Girona. In the paradigms she studies, the 1st person plural, and more significantly, the 2nd person plural, merge with the 3rd person reflexive:

(24) S' enviaràs el paquet
se will.send-2sg-SUB the parcel
'You will send us the parcel.'

(25) Ja s' en daré
yet *se* PART will.give-1sg-SUB
'I will eventually give you of that.' (de Benito Moreno 2015:119-120)

Unlike varieties described by de Benito Moreno (2015), VCC does not show systematic syncretism of any persons because [+participant] clitics are distinct from [-participant] clitics when not in a cluster or when they occur in a cluster with certain clitics.

2.3 A syntactic phenomenon?

Let us turn our attention to why these cases of splitting and substitution should not be considered a syntactic phenomenon. First of all, it should be remembered that, according to DM, syntax does not have access to Lexical Items but to (bundles of) features. In order for splitting and substitution to take place, it is not enough to have a clitic cluster with a [+participant] object clitic or/and a [+dative] clitic. The non-reflexive verb *acostar* 'to bring closer' in (26) is a three-place predicate (i.e. someone brings someone/something closer to someone/something). In the clitic cluster, there is a 2nd person object clitic and a 3rd person dative clitic. As in (17) above, this cluster yields splitting and substitution if and only if the predicate is inherently reflexive (and, consequently, one of the clitics in the cluster is reflexive). In sentences (26b-c) below, neither splitting nor substitution are allowed because the 2nd person object clitic is not coindexed with the subject of the verb.

(26) a. Nosaltres **te** li vam acostar SC / VCC
we 2sg-OBJ 3sg-DAT go-1pl-SUB bring closer

b. *Nosaltres **se te** li vam acostar
we *se* 2sg-OBJ 3sg-DAT go-1pl-SUB bring closer
c. *Nosaltres **se** li vam acostar
we *se* 3sg-DAT go-1pl-SUB bring closer
'We brought you closer to him.

Because of this, it seems unlikely that a syntactic phenomenon is triggering splitting and substitution. As argued in the next section, we consider this phenomenon morphological.

2.4 A Morphological Phenomenon

Since this phenomenon is neither phonological nor syntactic nor the result of syncretism, it follows that it must be morphological. We assume that syntax provides fully specified syntactico-semantic features (Bonet 1991, Embick and Noyer 2007) which sometimes fail to be instantiated after Spell-Out. Reflexive clitic clusters in VCC represent a case of mismatch between fully specified features output by the syntax and the clitics supplied by the morphology. We assume that splitting and substitution take place at Spell-Out.

Before explaining how a clitic can be split and, ultimately, substituted, we need to address what triggers (or prevents) this syntax-morphology mismatch. At first sight, it seems strange that 3rd person dative patterns with 1st and 2nd person object clitics while 3rd person accusative patterns with partitive, locative, and neuter clitics. In order to see how these groupings arise, we must look past the Vocabulary List proposed in (18). All [+participant] objects, by definition, must be [+animate] (Croft 1988:161). Locative, partitive, and neuter objects, on the other hand, must refer to [-animate] instances. Dative and accusative (3rd person) objects are not so straightforward to classify. Whereas accusative objects may often be [+animate], [-animate] objects are just as likely to occur.

With regard to dative objects, it is less often the case that they can be [-animate]. In the two sentences below we see a [+animate], in (27), and a [-animate], (28), dative object in Spanish. In Spanish, the same 3rd person dative clitic is used for both cases.

(27) Juan le puso un sombrero (a su hermano) Spanish
Juan 3sg-DAT put-3sg-SUB a hat (to his brother)
'Juan put a hat on his brother.'

(28) Le puse sal (a la sopa) Spanish
3sg-DAT put-1sg-SUB salt to the soup
'I salted the soup.' (literally, 'I put salt in the soup.')

In Catalan, however, only the [+animate] 3rd person dative clitic is /li/ (as in (29)) while its [-animate] counterpart surfaces as /i/, as illustrated in (30):

(29) En Joan li va posar un barret (al seu germà) SC / VCC
the Juan 3sg-DAT go-3sg-SUB put a hat (to his brother)
'Juan put a hat on his brother.'

(30) Hi vaig posar sal (a la sopa) SC / VCC
3sg-DAT go-3sg-SUB put salt to the soup
'I salted the soup.' (literally, 'I put salt in the soup.')

This leads Rigau (1982) to propose that Catalan has, in fact, two ways of marking an indirect object: with the dative /li/, 'li', and the dative /i/, 'hi', with the only difference between the two being that the former marks a [+animate] dative object while the latter marks a [-animate] dative object (see Rigau (1982:147-149) for an explanation on why the dative [-animate] /i/ should not be considered a locative). Therefore, in (both standard and non-standard) Catalan we are not forced to propose that dative objects are always [+animate] (Sancho Cremades 1993:368). We can, instead, claim that dative /li/ bears the [+animate] feature whereas dative /i/ bears the [-animate] one. Since no similar animacy distinction exists with respect to accusative clitics, we are going to assume that such objects are not specified for animacy. Thus, the Vocabulary List for dative object clitics in Catalan should be extended to the one represented in (31) below:

(31) /li/ ↔ [-participant -pl +dative +animate]
/i/ ↔ [-participant ±pl +dative -animate]
/lz(i)/ ↔ [-participant +pl +dative +animate]

Seeing that animacy is overtly encoded in Catalan morphology and that [+animate] is a feature that only [+participant] and most [+dative] clitics share (the two types of clitics involved in our phenomenon), we propose that animacy is a determining feature in the phenomenon at study here. Specifically, we believe that when two [+animate] clitics appear in the same cluster, the clitic that is reflexive (if there is one) will be subject to this phenomenon.

3. Towards an Account

3.1 Fission

In the previous section, we explained how Vocabulary Insertion takes place under normal circumstances where a single phonological expression represents a single morpheme or terminal node (which is made up of a bundle of features). In (32) below we see a fully specified terminal node output by the syntax that corresponds to the reflexive 1st person clitic /m/ as in *em pentino* ('I comb myself'). In the second step (32b), only three features [+participant, +speaker, -plural] are discharged by the insertion of /m/ while three other features, [-feminine, +animate, +reflexive], are not. As syntax outputs fully specified terminal nodes and Vocabulary Items are underspecified, features are typically lost during Vocabulary Insertion. This is the case for the three features not matched in (32).

(32) a. [+participant, +speaker, -feminine, -plural, +animate, +reflexive] →
b. /m/ - [-feminine, +animate, +reflexive]

While (32) depicts the default scenario, in other cases the mapping between Vocabulary Items and morphemes might be 2-to-1. This phenomenon is known as *Fission* (Embick and Noyer 2007, Halle 2000, Harley and Noyer 1999). Because of Fission, the features that are not discharged in the first insertion create a subsidiary node that is subject to a subsequent insertion. This seems to be the phenomenon that accounts for the observed splitting of clitics in VCC. There are two ways how Fission might operate in VCC clitics.

In the first possibility, we need to propose that the clitic /s/ is specified as [+reflexive], changing the specification we proposed in (18) to the one in (33). In (34) we exemplify a case of splitting (which we henceforth refer to as Fission) in the VCC sentence *se li vaig encarar* ('I confronted him/her'). In (34a) we see fully specified terminal nodes that are subject to insertion. In (34b), three features of the 1st person and three features of the 3rd person dative clitic remain undischarged after Vocabulary Insertion. The remaining 1st person features undergo Fission, as shown in (34c).

(33) /s/ ↔ [+reflexive]

(34) a. [+participant, +speaker, -plural, -feminine, +animate, +reflexive]
[-participant, -speaker, -plural ,+feminine, +animate, +dative, -reflexive] →
b. /m/ - [-feminine, +animate, +reflexive]
/li/ - [-speaker +feminine, -reflexive] →
c. /m/ - /s/ [-feminine, +animate]
/li/ - [+feminine, -reflexive]

After Fission applies, the feature [+reflexive] is discharged by the insertion of the Item /s/. The morphology then supplies three clitics, /m/, /s/, and /li/, which are then linearized, perhaps according to Harris's (1995) slogan *Syncretism Precedes Contrast*: /s/, the least specified clitic, surfaces to the left of more specified clitics.

Alternatively, one might propose that /s/ is not inserted because of its [+reflexive] feature but because it is inserted in an *elsewhere* fashion, as we initially proposed in (18). Since we do not find /s/ in all clitic clusters, its *elsewhere* condition needs to be constrained. It is not uncommon for Fission to operate under prerequisites in the DM framework (Harley and Noyer 1999). To account for the data in section 1, the insertion of /s/ as an *elsewhere* Item would require the previous discharge of two [+animate] morphemes, as expressed in (35). This possibility, however, implies that the two [+animate] features have to be discharged prior to /s/ insertion, which, in turn, means that such features are specified in [+dative] clitics (unsurprisingly) and crucially in [+participant] clitics as well. The updated specification of [+participant] and [+dative] clitics needed to retain this theory appears in (36) below. If this type of Fission were retained, the Vocabulary Insertion would unfold as exemplified in (37).

(35) /s/ ↔ *elsewhere* ([+animate][+animate])

(36) /m/ ↔ [+participant +speaker -pl +animate]
/t/ ↔ [+participant -speaker -pl +animate]
/nz/ ↔ [+participant +speaker +pl +animate]
/wz/ ↔ [+participant -speaker +pl +animate]
/li/ ↔ [-participant -speaker -pl +dative +animate]
/lz(i)/ ↔ [-participant -speaker +pl +dative +animate]

(37) a. [+participant, +speaker, -plural, -feminine, +animate, +reflexive]
[-participant, -speaker, -plural ,+feminine, +animate, +dative, -reflexive] →
b. /m/ - [-feminine, +reflexive]
/li/ - [-speaker +feminine, -reflexive] →
c. /m/ - /s/ [-feminine, +reflexive]
/li/ - [-speaker +feminine, -reflexive]

In both accounts of Fission, the implications for the Vocabulary List are not ideal. That is, in both cases we are forced to propose features that otherwise seem redundant. In the first alternative, the redundant feature is [+reflexive] for the specification /s/. Although making such a claim is detrimental if one intends to find a specification of /s/ that accounts for all of its uses, it is not an unwarranted choice: 3rd person clitics are the only ones that mark reflexivity overtly. In the second alternative account of Fission, [+participant] clitics need to include [+animate] in their specification. This seems, a priori, a much less felicitous proposal since no [-animate] 1st or 2nd person could ever exist, thus rendering this feature, at the very least, highly redundant.

Fission seems to account for the process that we observe in VCC reflexive clitic clusters. However, it still needs to be determined what triggers Fission. Understanding exactly why and under which constraints Fission operates remains an open question. It is generally claimed that those morphemes that are subject to Fission are simply marked for it (Halle 2000). However, our data shows that Fission in VCC is conditioned by two [+animate] clitics appearing in the same cluster. Disregarding the nature of the Vocabulary List, the general rule in (38) could be deduced to account for the Fission observed in VCC:

(38) [+participant, +animate, +reflexive] → /s/ [+participant] /___ [+animate]

3.2 Impoverishment[6]

The substituted reflexive clitic clusters in VCC could be argued to operate under the rule (39). In this case, the [+participant] clitic would be subject to feature deletion or delinking (as in Bonet 1991) thus yielding an *impoverished* clitic.

(39) [+participant, +animate, +reflexive] → /s/ /___ [+animate]

[6] Impoverishment that entails the complete deletion of the clitic in question might better be termed "Obliteration", following Arregi and Nevins (2007).

Retaining rule (39) would imply that the split and impoverished clitic sequences in VCC are the result of different processes; one exemplifying Fission and the other one, feature deletion. However, both Fission and Impoverishment occur in the same variety of Catalan (frequently in the same speaker) and only under the conditions stated above. Therefore, rather than two distinct processes, they seem to illustrate two different stages of the same phenomenon that occur sequentially (i.e. Impoverishment after Fission). We refer to this phenomenon, with its two stages, as *Reflexivity Cluster Remapping*.

3.3 Reflexivity Cluster Remapping: how and why

As claimed in the previous section, the phenomenon of Reflexivity Cluster Remapping (henceforth RCR) in VCC would include two consecutive stages: Fission and Impoverishment. Although we have explained what triggers this phenomenon, namely two [+animate] terminal nodes in the same reflexive clitic cluster, it should be addressed why such a cluster causes it.

It could be argued that this process is the result of the OCP, preventing two [+animate] clitics from clustering together. However, sentences like (40) below, despite having two [+animate] clitics in the same cluster, are never subject to RCR:

(40) Te li presentarem
2sg-OBJ 3sg-DAT introduce-1pl-SUB
'We will introduce you to him/her.'

Because two non-reflexive [+animate] clitics do not seem to violate the OCP, it should not be claimed that when the same cluster is reflexive, it violates the OCP, either. It is clear, then, that the [+reflexive] feature output by the syntax is the trigger of the RCR.

Bonet (1991:38) is, to our knowledge, the first author to stress the importance of *recoverability* of opaque clitic forms. The principle of recoverability requires the features of opaque clitics to be recoverable (i.e. their features must surface in one way or another). In fully impoverished sequences (i.e. in the last stage of RCR), where reflexive clitics are replaced by /s/, the features of the original pronouns are still recoverable through the agreement morphology of the verb. Recoverability (or the lack thereof) seems to account for the fact that the cluster in (40) is not impoverishable. This raises a pertinent question: could clitics in VCC be, by default, subject to the aforementioned mismatch but be blocked because, unless a clitic is reflexive, its features are not recoverable? Our answer is no. The notion of recoverability itself is not enough because in two cases where the clitic is recoverable the remapping is still not attested: with non-clustered reflexive clitics, and with clusters where the reflexive clitic occurs with a [-animate] clitic. In summary, there are two conditions for RCR to occur in VCC: that the clitic be recoverable (i.e. reflexive) and that it appear in a [+animate] [+animate] clitic cluster.

The last question to be addressed here is why RCR occurs. One point is clear: the larger the specification of a clitic, the more marked it is. Fully specified clitic clusters, then, form highly marked units of meaning, which could be cognitively taxing. The final

stage of the RCR, through the loss of features, would remove some of the markedness from the clitic by avoiding the Spell-Out of features that are otherwise recoverable through the φ-features of the verb. If such a hypothesis proves correct, then RCR would not be an accidental morphological phenomenon of VCC and would instead "reflect traits intrinsic to human cognitive apparatus" (Noyer 1992). While this seems a plausible justification for the impoverishment stage, the Fission stage might be more complex to account for. It is possible that the split clitic provides a *crescendo* effect that allows for easier processing of the cluster. These possibilities are presented only tentatively in this study and naturally require further research.

4. Discussion and conclusions

In this study we describe Fission and Impoverishment in Vernacular Central Catalan reflexive clitic clusters, and show that they constitute two stages of the same phenomenon, Reflexivity Cluster Remapping. In this phenomenon, when a [+participant] reflexive clitic occurs in a cluster with another [+participant] or [+dative +animate] clitic, the reflexive clitic splits into the original clitic and an /s/ clitic (an instance of morphological Fission). In the second stage, referred to as Impoverishment, the original clitic is replaced by the clitic /s/. In order for RCR to occur, two conditions are necessary: the impoverishable clitic must be recoverable via the φ-features of the verb and this clitic must appear in a cluster with another [+animate] clitic.

This study has not addressed whether the two stages of RCR represent a language change in progress or two synchronic degrees of syntax-morphology mismatch. In the former possibility, it might be the case that previous generations of VCC speakers only produced Fission (i.e. accomplished only the first stage of the phenomenon) while present generations have taken it one step further and are avoiding the redundant clitic, thus giving rise to the Impoverishment stage. In the second alternative, both stages of RCR coexist in VCC in free distribution. This question would require further study and, crucially, access to a diachronic or stratified sociolinguistic corpus of VCC speech.

While Fission is typically a last resort to justify the insertion of certain Items in DM, we have been able to articulate and justify the case of Fission in VCC. This, in turn, raises the question whether other cases of Fission can be accounted for and appropriately justified with a more detailed description of the morphology of the language in question.

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