

Syntactic Doubling and the Encoding of Voice in Eastern Abruzzese¹

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1. Introduction

Eastern Abruzzese (EA), a southern Italian dialect spoken in Central Italy, exhibits an auxiliary-selection pattern that commonly surfaces in Central and Southern varieties of Italian: as illustrated in (1), it is person- rather than argument structure-driven:²

- | | | | | | | |
|-----|----------------|-------|---------------------|-------|----------------------|--------------------|
| (1) | a. So | viste | b. Si | viste | c. A | viste |
| | am-1S | seen | are-2S | seen | have-3 | seen |
| | 'I have seen' | | 'You (s) have seen' | | 'He/she/it has seen' | |
| | d. Seme | viste | e. Sete | viste | f. A | viste ³ |
| | are-1P | seen | are-2P | seen | have-3 | seen |
| | 'We have seen' | | 'You have seen' | | 'They have seen' | |

As (1) shows, 1st and 2nd person subjects in EA select *be*, while 3rd person selects *have* (cf. Rohlfs 1968, Giammarco 1979, D'Alessandro & Ledgeway 2006 and D'Alessandro & Roberts 2006 for further discussion). One question that arises in the context of this type of auxiliary-selection system is how passive meanings such as 'I am seen' and 'you are seen' are to be expressed: as the glosses associated with (1a, b, d, e) reveal, the perfect *active* in the 1st and 2nd person would seem to involve precisely the auxiliary+participle combination one might expect to realize the passive. Compare Standard Italian (2) in this regard:

- | | | | | | | | | |
|-----|-------------|-------|--------------------|-------|---------------|-------|----------------|-------|
| (2) | a. Sono | visto | b. Sei | visto | c. Siamo | visti | d. Siete | visti |
| | am-1S | seen | are-2S | seen | are-1P | seen | are-2P | seen |
| | 'I am seen' | | 'You (s) are seen' | | 'We are seen' | | 'You are seen' | |

Investigation of EA active/passive alternations reveals a peculiar system which draws on a highly unusual disambiguation mechanism: as shown in (3), the active/passive distinction in this variety is signaled by means of *Raddoppiamento fonosintattico* (RF), a sandhi phenomenon involving the gemination of initial consonants (cf. Rohlfs 1966, Nespor 1993, Loporcaro 1997):

- | | | | | | |
|-----|------------|---------------|-------|---------------------|-------|
| (3) | a. ACTIVE: | So | viste | Si | viste |
| | | am-1S | seen | are-2S | seen |
| | | 'I have seen' | | 'You (s) have seen' | |

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² We will only address the variety of EA spoken on the coast in this paper. The western variety is a central dialect which exhibits completely different features.

³ The data contained in this paper are from the dialect spoken in Arielli (Chieti).

b. PASSIVE:	So	[v]viste	Si	[v]viste
	am-1S	seen	are-2S	seen
	‘I am seen’		‘You(s) are seen’	

In the plural, no RF effects are visible, due to the fact that the plural auxiliaries are not phonological triggers (see below). The reading in this case is therefore ambiguous between active and passive.

RF famously surfaces in Standard Italian and also in some Central and Southern varieties of Italian and is, in the canonical case, triggered by a word that either bears final stress or consists of a strong monosyllable. Syntax is often said to play a conditioning role in this phenomenon as there are various cases where doubling fails to apply despite the fact that the appropriate phonological conditioning requirements are met (cf. Nespor & Vogel 1986, Loporcaro 1997). With the possible exception of cases in which RF carries number and gender information (Adam Ledgeway, p.c.), it has not previously been believed to be able to express syntactic information, however. That it should play a role in encoding voice alternations is therefore unexpected. In this paper, we take a closer look at the peculiar manner in which voice alternations are encoded in EA and at the way in which RF facilitates the expression of these alternations. In particular, we focus on the following questions:

- (a) the nature of the BE-auxiliary in EA;
- (b) the phasal status of active vis-à-vis passive vPs in this language; and
- (c) the way in which information from Narrow Syntax (NS) is “converted” into PF form.

The paper is structured as follows: section 2 briefly outlines relevant background on RF, whereafter section 3 establishes the empirical facts relating to the occurrence of RF in active/passive structures in EA. Based on these, two possible analyses suggest themselves: a relatively traditional, lexically oriented one and a more novel, phase-based one. In Section 4, we consider the phase-based analysis in more detail and show how it is superior to the lexical alternative. We also demonstrate how the insights derived from a phase-based analysis of EA RF offer a transparent window on matters as diverse as the position of auxiliaries in clause structure, the phasal status of different kinds of vPs, the role that syntax may play in conditioning “phono-syntactic” phenomena and the internal architecture of PF. Section 5 concludes the paper.

2. Raddoppiamento fonosintattico (RF): some background

Traditionally, RF-triggers have been assumed to be of two kinds (cf. Rohlf's 1966, Loporcaro 1997, Waltereit 2004, for detailed discussion):

- (a) *phonological* triggers – specifically, oxytones, i.e. words with a strong (final) syllable – which systematically trigger RF wherever they are present – cf. (4); and
- (b) *lexical* triggers which do not conform to the phonological profile associated with RF-triggers, but nevertheless activate RF wherever they occur – cf. (5)⁴:

- | | | | |
|-----|--|---|--------------------------------|
| (4) | a. città [p]pulita
city clean | b. andò [v]via
went away | c. tre [c]case
three houses |
| (5) | a. come [m]me (weak final syllable)
like me | b. a [m]me (unstressed monosyllable)
to me | |

As noted above, syntax has often been said to play a conditioning role in RF phenomena as it has been observed that RF does not always occur where the relevant phonological and lexical conditions are met:

- (6) La volpe ne aveva mangiato metà prima/*[p]prima di addormentarsi
the fox of-it had eaten half before of falling-asleep
‘The fox had eaten half of it before falling asleep’ (Nespor & Vogel 1986)

⁴ Cf. Loporcaro (1997) for discussion of the idea that synchronically irregular RF may in fact be viewed as the residue of a previously productive consonant assimilation process in Latin.

In this case, RF fails to take place after *metà*, despite this word's oxytone status. The standard (though not uncontroversial⁵) account of this kind of non-application of RF is due to Nespors & Vogel (1979, 1986), who propose that RF – or, more accurately, RF in Florentine Italian – is blocked across phonological phrase boundaries. In (6), RF would therefore be blocked because the word following the RF-trigger is part of a PP-adjunct, i.e. a structure which is phonologically “sealed off” from the main clause structure. As they are not relevant here, we leave aside the details of Nespors & Vogel's (*op.cit.*) phonological proposals, including their definition of ‘phonological phrase’, and also the refinements proposed by i.a. Kaisse (1985) and Nespors (1993). Our main concern here will be to show that phonological phrasing is, despite initial appearances, also an ingredient in understanding EA voice alternations and, furthermore, that a very simple syntax-PF mapping algorithm, crucially implemented on a phase-by-phase basis, can account for all the relevant data. We turn now to more detailed consideration of the EA data and its analysis.

3. RF in EA

3.1 Identifying possible sources of the RF-mediated active/passive distinction

Outside the active/passive domain, EA exhibits both phonologically and lexically triggered RF. Thus oxytones such as *tre* (‘three’), *pi* (‘for’) and *chi* (‘what’) trigger RF on the strength of their phonological profile, while forms like *a* (‘to’), *ndra-* (‘quickly’), systematically result in RF in spite of their non-oxytone status. Against this background, it is therefore conceivable that the active/passive alternation in (3) could fall out from either factor. On the one hand, *so/si*, as strong monosyllables, meet the phonological condition on RF-triggers, with the result that RF in passive structures may be the consequence of phonological triggering, while the absence of RF in the corresponding actives may follow from some “masking” effect (cf. the discussion of phonological phrases as one relevant consideration in section 2 above). On the other hand, it could also be the case that we are dealing with lexical idiosyncrasy, which may take one of two forms: firstly, we could be dealing with two lexical items (auxiliaries), one of which is an RF-trigger, while the other is not; alternatively, it could also be the case that the active/passive distinction is systematically lexically encoded via the participles, with the active participle taking on a “neutral” form, whereas the passive participle necessarily surfaces with RF (i.e. RF serves a specific morphosyntactic function in the participial domain). The following possibilities therefore present themselves as sources of the RF-mediated voicing distinction in EA:

- (7) a. there is a single BE-auxiliary in each case (*so*, *si*), which is an RF-trigger, but whose effects are systematically masked in active contexts;
 b. there are two BE-auxiliaries in each case, of which one (the passive) is an RF-trigger, whereas the other (the active) is not; or
 c. there is a single BE-auxiliary in each case, but RF serves directly to encode the passive nature of the participles that surface in passive structures, i.e. RF encodes morphosyntactic information.

3.2 Evaluating the possibilities

In evaluating the possibilities in (7), one can immediately discount (7c), in terms of which RF is viewed as the phonological reflex of specific morphosyntactic information encoded on participles. The example in (8) makes this very clear:

- (8) So [s]sembre viste da tutte quinde
 am-1S always seen by all how-many
 ‘I am always seen by everybody’

As (8) shows, RF applies between *so* and the element that follows it, with the passive participle failing to exhibit doubling in this case. Evidently, therefore, it is not possible to think of the EA active/passive distinction as one which is specifically lexically encoded in the participial domain.

⁵ Cf. Loporcaro (1997) for discussion.

We are thus left with the two remaining possibilities listed in (7): either there is just a single, RF-triggering auxiliary, with an additional factor determining the (non-)occurrence of RF ((7a)) or the EA lexicon contains pairs of homophonous auxiliary lexemes, one of which (e.g. passive *so*) is an RF-trigger and the other of which (e.g. active *so*) is not ((7b)). *A priori* the latter option is less appealing since it necessitates the postulation of a more complex lexicon, namely one containing two pairs of homophonous auxiliaries, which do not differ in any aspect of their phonological make-up, but nevertheless have different RF-triggering capacities. Clearly, therefore, if a plausible “masking” factor can be identified to account for the non-occurrence of RF in active contexts, (7a) is to be preferred over (7b). In the following section, we propose a phase-based analysis of the active/passive alternation in EA which, we argue, supplies precisely the motivation required to establish (7a) as the most explanatorily adequate analysis.

4. A phase-based account of RF in EA

4.1 RF-conditioning factors

In this section, we propose that EA RF falls out as the consequence of the interplay of very specific lexical, syntactic and prosodic conditions. On the lexical front, the presence of an RF-trigger is crucial, and we argue that some of the forms of BE in EA meet this requirement (1st and 2nd person). On the syntactic front, two factors are crucial: the functional categories (FCs) stored in the lexicon and also the Phase Impenetrability Condition/PIC of Chomsky (2000 *et seq.*). As our proposals relate only to the *units* that are sent to Spellout in accordance with the PIC and not to the *timing* of this Spellout (sooner under the *Minimalist Inquiries* PIC than under the *Derivation by Phase* one), we will, for expository convenience, couch our discussion in terms of the earlier (more restrictive) version given in (9):

(9) **Phase Impenetrability Condition/PIC** (cf. Chomsky 2000: 108)

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.

i.e. $[_{ZP} \dots Z^0 [_{XP} \dots X^0 [_{HP} \dots [H^0 [_{YP} \dots Y^0 [_{WP} \dots [W^0 \dots$ where only **bold material** is accessible to X^0, Z^0 , etc; material in *outline* font has already been sent to Spellout.

The prosodic condition that interacts with the lexical and syntactic ones mentioned above is that RF can only apply to elements that are assigned to the same prosodic domain (φ). We follow here the simple, but for present purposes adequate assumption that at least certain aspects of prosodic domain formation are achieved via syntax-PF mapping of the kind assumed by i.a. Selkirk (1984 *et seq.*) and Truckenbrodt (1999). In particular, we assume the following general mapping algorithm:

(10) a. **ALIGN-(XP, L/R; φ , L/R)**

Align the left/right edge of every maximal projection with the left/right edge of a phonological phrase (φ)

b. **ALIGN-(X⁰, L/R; ω , L/R)**

Align the left/right edge of every syntactic head with the left/right edge of a phonological word (ω)

In terms of this mapping algorithm, (superficially) “head-initial” languages like English and Italian opt for the R(ight) alignment option, i.e. the right edge of every XP/X is required to align with the right edge of a φ/ω . What we would like to argue here is that the PIC and the mapping-mediated prosodic domain formation operation outlined in (10) interact in a very specific way to determine which elements can ultimately be assigned to the same φ . More specifically, we would like to argue that there are circumstances under which the operation of the PIC will affect the manner in which (10) creates prosodic domains. To get a sense of how this works, let us first consider an English example:

- (12) a. Ggià so (??ggià) [v]viste da tutti quinde
 already am-1S already seen by all many
 ‘I am already seen by everyone’
- b. Ggià li so’ (ggià) viste cullù
 already him am already seen him
 ‘I have already seen him’

As (12) shows, “passive” *so* differs from “active” *so* in that it may not precede the *vP*-adverbial *ggià*. Following Cinque (1999), this may be interpreted as indicative of the fact that “passive” *so* is in fact located in a lower clausal position than its active counterpart (cf. also Ledgeway & Lombardi 2005 for discussion of the different positions to which Romance verbs seem to raise, despite the usual assumptions about uniform V-to-T raising in this family).

Further evidence that “active” *so* occupies a higher clausal position than “passive” *so* and also that the latter, but not the former occupies an aspect-related position is supplied by compound auxiliary data:

- (13) a. Li so ‘ve viste
 it am-1S had-IMP seen-pp
 ‘I had seen that’
- b. ???Ji so ‘ve state viste
 I am-1S had-IMP been seen
 ‘I had been seen’
 (cf. D’Alessandro & Ledgeway 2006)

As (13) shows, only “active” *so* is compatible with imperfective ‘*ve*. This follows directly if we assume that (a) “passive” *so* is itself merged in an FC that encodes aspectual information, making it impossible for a second verb encoding this information to be merged, and (b) “active” *so* is, as proposed above, merged in a higher projection which does not itself encode aspect; in (13b), a specific aspectual auxiliary (‘*ve*) is present, with the consequence that imperfective meaning is assigned. In sum, therefore, it seems that there is a range of data that supports the proposal that “active” and “passive” *so* are merged in different clausal positions. On its own, however, this still does not account for the differences in their RF-triggering capacities, a matter to which we now turn.

Recall that we assume the PIC to play a crucial role in determining which elements are sent to Spellout together, with only elements that are sent to Spellout at the same time being assignable to the same ϕ (cf. (11) above). If we maintain the standard assumption that the effect of RF-triggers is only visible when they occur in the same ϕ as the element that surfaces adjacent to them (cf. section 2), it is clear that we would expect the EA active/passive structures to differ in respect of the way in which the PIC operates in these two cases. More specifically, on the assumption that there is indeed only a single set of consistently RF-triggering BE-auxiliaries, we would expect the RF-triggers *so*, *si*, etc. in passive structures to be sent to Spellout together with the VP-internal elements that surface to their right, whereas we would have the opposite expectation in the case of active structures containing these auxiliaries. The question now is how this difference can be derived?

What we would like to argue is that Chomsky’s (2000: 8ff *et seq.*) assumptions about the defective nature of passive *v* offer precisely what is required to account for the difference between active and passive structures in EA. If we follow Chomsky in viewing passive *v* as defective, i.e. as a non-phasal FC which does not independently define a Spellout domain distinct from that of the next phase-head (C), we expect the material in a passive structure to “survive” longer before being sent to Spellout than that in a corresponding active, where *v* is non-defective: instead of VP being spelled out upon completion of the *vP* phase, as would be the case in active *vPs*, this structure is only sent to Spellout, along with the material contained in *vP* and TP, when the CP phase is complete. To see more clearly how this works, consider (14) which presents a simplified schematic representation of the active and passive structures illustrated in (3) above (for ease of exposition, we assume that both “active” and “passive” *so* raise into the TP-domain, although it should be noted that these elements do not appear to occupy precisely the same surface position in the clause structure; cf. the discussion above):

- (14) a. [_{TP} *so* [_{vP} [_{VP} *viste*]]] (active): *viste* sent to PF independently of *so* → no RF
 b. [_{TP} *so* [_{vP} ~~ϕ~~ [_{VP} *viste*]]] (passive): *so viste* sent to PF together → RF: *viste* → *vviste*

As shown in (14a), the operation of the PIC in active structures will always ensure that VP is sent to Spellout independently of the material in the vP -domain and above. It is therefore not possible for *so* to trigger RF here. In the case of passives like (14b), however, the non-phasal status of passive vP ensures that all the material in this particular structure is sent to Spellout together. Consequently, it is possible for the mapping algorithm in (10) to assign *so* and *viste* to the same φ (cf. the RIGHT-alignment requirement in head-initial EA), with the consequence that the RF-trigger *so* is able to trigger RF. Note that, without the PIC, we would not be able to distinguish between (14a) and (14b) as the mapping algorithm in (10) would, if operating in isolation, assign *so* and *viste* to the same φ in both cases. The PIC therefore crucially allows us to establish distinct φ s in the active case.

The same explanation extends to the more complex passive illustrated in (8) above: as all the material in this structure is sent to Spellout together, *so* and the VP-adverb *sembre* (“often”) can be assigned to the same φ , with the consequence that RF is able to apply. At this point, we are able to make a prediction: the same adverb would *not* be expected to exhibit RF in the active counterpart of (8). As shown in (15), this prediction is borne out:

- (15) So *sembre* *viste* *cullù*
 am-1S always seen him
 ‘I have always seen him’

Our proposal also makes a number of further predictions, which we will now briefly consider. Firstly, it predicts that we would expect to see “active” *so* – which is, after all, the same lexical item as “passive” *so* and, thus, an RF-trigger – triggering RF wherever it is sent to Spellout together with an element that is assigned to its φ . VP-adverbs like *sembre* in (15) clearly do not qualify, but clitic pronouns provide the relevant testing ground in this case. Consider (16) in this connection:

- (16) a. Te *so* *ditte*
 to-you am-1S said
 ‘I have said it to you’
 b. So [t]te *ditte*
 am to-you said
 ‘I have said it to you’

Here (16a) exhibits the usual lack of RF as *so* and *ditte* are not sent to Spellout at the same time, thereby precluding the formation of a single φ in this case. In (16b), which features the enclitic version of the pronoun in (16a), *so* does, however, trigger RF. This is precisely what one would expect if *te* has in fact cliticized onto T here and *so* is indeed, as we argue, an RF-trigger. Crucially, the facts in (16) remain mysterious on the two-homophonous-*sos* proposal (cf. (7b) above): in terms of this proposal, “active” and “passive” *so* are expected to differ consistently in respect of their RF-triggering capacity, otherwise it becomes impossible to account for any of the RF vs non-RF alternations discussed above. The data in (16) therefore constitute a strong piece of empirical support in favour of our argument that the single-BE analysis ((7a) above) is in fact the correct one.

Further evidence supporting the correctness of our analysis and undermining the plausibility of the homophonous *sos* proposal emerges in interrogative contexts. Consider (17):

- (17) a. So *viste* *Marije?* *Quande?!*
 am-1S seen Mario when
 ‘Have I seen Mario? When?!’
 b. So *state* *viste?* *Addo?'*
 am-1S been seen where
 ‘Was I seen? Where?’

If the homophonous *sos* proposal were correct, we would once again expect “active” *so* not to trigger RF, whereas “passive” *so* would be expected to do so. The data in (17), however, reveal that only the former prediction is borne out: “active” *so* does not trigger RF, as expected, but “passive” *so* does not do so either. In the context of a phase-based analysis of the kind we assume, this discrepancy receives a ready explanation: on the assumption that the auxiliary in interrogatives moves to C, *so* in both of the structures in (17) will in fact be located in this position. Consequently, we would expect the two elements to behave identically in this context, as is indeed the case. That this identical behaviour does not involve RF, in turn, follows from the action of the mapping algorithm: as it is in C in both cases, the right-alignment requirement will ensure that *so* cannot be assigned to the same φ as any element to its right, thereby correctly precluding the possibility of RF in this context.

A final issue that we wish to consider before concluding relates to the matter of unaccusatives: in Chomsky's terms, non-defective v exclusively heads "verb phrases with full argument structure"; therefore *not* passives or unaccusatives (cf. Chomsky 2006: 12). If this assumption is correct, we would expect unaccusatives in EA to pattern with passives, i.e. we would expect RF. This is not, however, the case, as (18) shows:

- | | | |
|------|--|--|
| (18) | a. Ji so minute
I am-1S come
'I have come' | b. Me so rotte
refl am-1S broken
'I have broken myself', i.e. 'I am bored' |
|------|--|--|

As (18) shows, both intrinsically unaccusative verbs, like *minute* in (18a), and verbs which have an unaccusative use, like *rotte* in (18b), do not exhibit RF. In our terms, this means that *so* and the relevant participle are not sent to Spellout together (i.e. VP-material is sent to Spellout before that in the TP-domain), with the consequence that they cannot be assigned to the same ϕ . In other words, unaccusative v in EA must be non-defective in the same way as active v , leaving passive v as the only defective v in this language. We tentatively suggest that this fact may be interpreted as indicative of the possibility that the defectiveness of different species of v may in fact be subject to parametric variation, with languages, for example, being able to select among options such as the following: all v s are non-defective vs active and unaccusative v are non-defective, while passive v is defective vs only active v is non-defective, while passive and unaccusative v are defective (i.e. the state of affairs that Chomsky proposes to be universal). We submit that languages may make the specific "choices" that they do on the basis of non-syntactic system-internal considerations, such as, for example, the nature of the lexical items in the language (e.g. is there a distinctive passive participle?) or the availability or otherwise of morphological marking (e.g. is there distinctive marking for agentive verbs?). If this is on the right track, the crucial considerations in EA may well be its person-sensitive auxiliary system combined with the absence of a distinctive passive participle. We leave this interesting question for further research.

5. Conclusion

This paper set out to account for the peculiar RF-mediated voicing alternations shown in EA (cf. (2)). What we have shown is that this RF phenomenon is indeed both genuinely phonological and syntactic, and that it is best understood as the consequence of the interplay of very specific lexical, syntactic and prosodic conditions. In particular, we have shown that a phase-based, syntax-PF mapping implementation of a system featuring only a single, featurally underspecified set of BE-auxiliaries (i.e. (7a) above) seems to fare very well in accounting for the peculiarities associated with this variety's active/passive structures. Specifically, we have proposed that RF in active/passive constructions can be understood if we assume that it is triggered under adjacency to an RF-trigger (the relevant BE-auxiliary) which is part of the same ϕ , with ϕ s being constructed phase by phase (cf. also Biberauer 2006). This proposal allows us to predict, correctly, that BE-auxiliaries will consistently fail to trigger RF in active structures where the relevant auxiliary does not surface adjacent to TP-internal material, while RF is always triggered in passive declaratives. The proposal also allows us to account for the fact that structures in which the BE-auxiliary has undergone raising to C systematically lack RF, regardless of whether they involve an active or a passive. Since RF fails to surface in unaccusative structures in EA, we have concluded that unaccusative v must, like active v , be non-defective in this language. We have also speculated, *contra* Chomsky (2000 *et seq.*), that the (non-) defectiveness of various species of v may in fact be a point of parametric variation, a matter that we leave to future research. Clearly, the proposals made in this paper also open up a number of further research questions, notably the extent to which the insights gleaned from EA RF can facilitate understanding of other previously noted cases of application vs non-application of RF and similar phonological processes (e.g. lenition, mutation, etc.) in what appear to be appropriate conditioning environments.

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