Should I stay or should I go? Optional focus movement in Italian

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1. Introduction

One well known problem in the analysis of focus is the apparent optionality of fronting of the focus constituent in languages like Italian, as seen in (1B'):¹

- (1) A: So che Gianni ha invitato Lucia ... I know that John invited Lucy ...
 - B: No, ha invitato [MaRIna]_F. (focus *in situ*) no, (he) invited Marina
 - B': No, $[MaRIna]_F$ ha invitato. (focus *ex situ*) no, Marina (he) invited

Optional movement is problematic in two respects. First, recent syntactic analyses assume that the displacement of a constituent is triggered by the need to satisfy a formal requirement, which is implemented in terms of features. According to this view, in (1B') the direct object bears a [focus] feature, which must be licensed in an appropriate scopal position in the left periphery of the clause (Rizzi 1997). But such featural requirements are assumed to be mandatory, and therefore, the optionality observed in (1B)/(1B') is unexpected.²

A similar problem emerges with respect to the interpretation of focus. In the Alternative Semantics approach (Rooth 1992), the focus constituent is interpreted *in situ*, whereas in one version of the Structured Meaning approach (Krifka 2006), the focus constituent must be displaced in order to create a partitioned structure that can be transparently mapped into a structured meaning (§3.3): from either perspective, optional movement is once again unexpected.

The structures (1B) and (1B') are commonly taken to be fully equivalent with respect to their interpretive properties; in this paper we argue that they are not. In \$2 we show that it is possible to distinguish (at least) two types of interpretation, which are felicitous in different

© 2012 Valentina Bianchi and Giuliano Bocci *Empirical Issues in Syntax and Semantics 9*, ed. Christopher Piñón, pp. 1–18 **EISS** http://www.cssp.cnrs.fr/eiss9/

^{*}For useful comments we wish to thank the audiences at CSSP 2011 (Université Paris 8) and at the Workshop *Left Periphery: Where Syntax and Discourse meet* (University of Verona, July 2011), the editor Christopher Piñón, as well as an anonymous EISS reviewer. Many thanks to Ad Neeleman for discussion of the issues raised in §4. All remaining errors are ours. Valentina Bianchi takes responsibility for §1, §3 and §4.1–§4.2; Giuliano Bocci takes responsibility for §2, §4.3 and §5.

¹The main prosodic prominence is indicated by putting the corresponding syllable in capitals.

 $^{^{2}}$ As a response to this problem, the view has emerged that certain instance of movement may be triggered by interface requirements which optimize the mapping between syntax and the external components. We discuss this view in §4.1.

contexts; we provide experimental evidence showing that one of the two is incompatible with focus fronting. In §3 we propose a semantic characterization of these interpretations, and in §4 we reconsider the optionality issue and we discuss the consequences of our findings for the syntax-semantics interface and the syntax-prosody interface.

2. Contrastive and corrective import

Consider the statements in (2) and (3) by speaker A:

- (2) A: Maria era molto elegante l'altra sera a teatro. Maria was really elegant yesterday night at (the) theatre
- (3) A: L'altra sera a teatro, Maria si era messa uno straccetto di H&M. yesterday night at (the) theatre, Maria wore a cheap-dress from H&M

Suppose now that a speaker B replies to (2) or (3) by means of (4):

(4) B: Si era messa un ArMAni, non uno straccetto di H&M. (focus *in situ*) (she) wore an Armani (dress), not a cheap-dress from H&M

In the context of (2), (4) constitutes an elaboration of speaker A's assertion: the focus structure simply contrasts the focussed direct object with another alternative provided by speaker B in the negative tag. In this case, the focus structure conveys a merely *contrastive* import.

In the context of (3), instead, the reply in (4) clearly entails the denial of speaker A's assertion: as a matter of fact, part of the denied assertion is repeated in the negative tag. (4) thus conveys a conversational move of correction; in this case, the focus structure is again contrastive, but it bears an additional *corrective* import. (Correction will be explicitly analysed in §3.)

In 1 we show that this distinction is relevant in determining the possibility of focus fronting in Italian.³

2.1 The experiment

Following our native speaker intuitions, we hypothesized that only the corrective import may license focus fronting in Italian, while the merely contrastive import cannot. In order to substantiate this insight, we carried out a two-alternatives forced-choice experiment, with stimuli presented in written form. We created 18 pairs of experimental sentences, minimally differing in the position of the focus element: *in situ* versus *ex situ*. The pairs of experimental sentences were presented in fictional dialogues, which were designed to induce either a merely contrastive or a corrective interpretation of the focus structure. Moreover, the experimental items occurring in corrective contexts were presented with or without the negative tag. The independent factor had thus three levels: (i) the context inducing a corrective interpretation and negative tag in the target sentence; (ii) the context inducing a corrective interpretation and negative tag in the target; (iii) the context inducing a corrective interpretation and negative tag in the target sentence; (ii) the context inducing a corrective interpretation and negative tag in the target; (iii) the context inducing a corrective interpretation and negative tag in the target; (iii) the context inducing a corrective interpretation and negative tag. The three conditions are exemplified in Table 1.

³We are not claiming that these are the only available interpretations for focus in Italian: see Brunetti 2009 for detailed discussion. We do claim, however, that precisely these two interpretations can be clearly distinguished in the contexts that introduce our experimental stimuli.

Con	dition 1: Merely contrastive context, +	negative tag		
Con	text: A: Maria era molto elegante l'alt Maria was really elegant yeste			
B:	focus <i>in situ</i> Si era messa un ArMAni,	focus <i>ex situ</i> B': Un ArMAni si era messa,		
	non uno straccetto di H&M. (she) wore an Armani (dress), not a cheap dress from H&M	non uno straccetto di H&M. an Armani (dress) (she) wore, not a cheap dress from H&M		
Con	dition 2: Corrective context, + negative	tag		
Con	text: A: L'altra sera a teatro, Maria si			
	yesterday at the theatre, Maria	a wore a cheap dress from H&M		
	yesterday at the theatre, Maria focus <i>in situ</i>	a wore a cheap dress from H&M focus <i>ex situ</i>		
B:		-		
B:	focus <i>in situ</i> Si era messa un ArMAni, non uno straccetto di H&M.	focus <i>ex situ</i> B': Un ArMAni si era messa, non uno straccetto di H&M.		
B:	focus <i>in situ</i> Si era messa un ArMAni,	focus <i>ex situ</i> B': Un ArMAni si era messa,		
	focus <i>in situ</i> Si era messa un ArMAni, non uno straccetto di H&M. (she) wore an Armani (dress),	focus <i>ex situ</i> B': Un ArMAni si era messa, non uno straccetto di H&M. an Armani (dress) (she) wore, not a cheap dress from H&M		
Con	focus <i>in situ</i> Si era messa un ArMAni, non uno straccetto di H&M. (she) wore an Armani (dress), not a cheap dress from H&M adition 3: <i>Corrective context, - negative</i> text: A: L'altra sera a teatro, Maria si o	focus <i>ex situ</i> B': Un ArMAni si era messa, non uno straccetto di H&M. an Armani (dress) (she) wore, not a cheap dress from H&M		
Con	focus <i>in situ</i> Si era messa un ArMAni, non uno straccetto di H&M. (she) wore an Armani (dress), not a cheap dress from H&M adition 3: <i>Corrective context, - negative</i> text: A: L'altra sera a teatro, Maria si o	focus <i>ex situ</i> B': Un ArMAni si era messa, non uno straccetto di H&M. an Armani (dress) (she) wore, not a cheap dress from H&M <i>tag</i> era messa uno straccetto di H&M.		
Con	focus <i>in situ</i> Si era messa un ArMAni, non uno straccetto di H&M. (she) wore an Armani (dress), not a cheap dress from H&M adition 3: <i>Corrective context, - negative i</i> text: A: L'altra sera a teatro, Maria si o Yesterday at the theatre, Maria	focus <i>ex situ</i> B': Un ArMAni si era messa, non uno straccetto di H&M. an Armani (dress) (she) wore, not a cheap dress from H&M <i>tag</i> era messa uno straccetto di H&M. a wore a cheap dress from H&M		

Table 1. Examples of experimental stimuli

18 monolingual speakers of Italian volunteered for the experiment. They were asked to choose the more natural alternative between the two presented replies of speaker B, minimally differing in the position of the focus element (dependent factor: focus *in situ* versus *ex situ*). The items were rotated through the three conditions, so that each subject saw each item only in one condition. Each subject judged 18 experimental trials along with 18 filler trials.⁴ The order of the trials was pseudo-randomized, and the presentation order of the minimal pairs was counter-balanced. The experiment was implemented in PraatMCF (Boersma & Weenink 2012).

The response percentages across conditions are reported in Figure 1. In contexts evoking mere contrast (Condition 1), focus *ex situ* was virtually never preferred over focus *in situ*: 1.9% versus 98.1%. In corrective contexts, focus *ex situ* was preferred over focus *in situ* 25% of the time when the negative tag did not occur (Condition 3), and 13% of the time when the negative tag occurred (Condition 2). We analyzed the data with a mixed logit model (Baayen 2008), in

⁴The fillers were identical in format to the experimental trials but concerned the subject position in questions: pre-verbal versus post-verbal.

which we included random intercepts for both subjects and items. As summarized in Table 2, the results showed that the probability of preferring a focus *in situ* was indeed significantly higher in a corrective context than in a contrastive one, whether the negative tag was present (p=.002) or not (p<.0001).



Figure 1. Summary of the experimental results

Predictor	Coefficient	SE	Wald Z	p
Intercept	5.946	(1.030)	5.771	<0.0001***
Corrective, – neg. tag	-4.133	(0.941)	-4.391	<0.0001***
Corrective, +neg. tag	-2.839	(0.929)	-3.057	.002**

Table 2. Summary of the fixed effects in the mixed logit model for focus *in situ* versus focus *ex situ*. (Reference Category = Contrastive context (treatment coding); number of observations = 324; subjects = 18; logLik = -89.35)

In light of these results, we conclude that focus $ex \, situ$ is not legitimate in contexts of mere contrast. Conversely, in corrective contexts, focus $ex \, situ$ is a possible option – regardless of the occurrence of the negative tag –, though not the preferred choice.

3. Focus and correction

In order to explain this correlation, the next step is to give an explicit semantic characterization of the corrective versus merely contrastive import.

3.1. Contrastive focus

As for contrastive focus, we assume a minimal characterization: it simply conveys that one focus alternative is salient in the context, but it does not associate any particular presupposition to this alternative.⁵

In a sentence like (4) (in the context of (2)), we take the whole structure to be contrastive: the symmetrically contrasting alternatives are specified in the antecedent clause and in the negative tag. (For concreteness, we analyze the latter as an elliptical clause).

(2)	A:	Maria era	molto elegante	l'altra sera	a teatro.
		Maria was	really elegant	yesterday night	at (the) theatre

 $\begin{array}{ll} (4) & [[Si \mbox{ era messa } [un \mbox{ ArMAni}]_F \] \sim p_1], \ \ non \ [[\ si \ era \ messa } [un \ straccetto \ di \ H\&M]_F \sim p_2] \\ & (she) \ wore \ \ an \ Armani \ (dress) \ \ not \ \ (she \ wore) \ \ a \ cheap \ dress \ from \ H\&M^6 \\ \end{array}$

In both the first clause and the elliptical clause, a focus operator ~ adjoins at the clausal level and introduces a free variable (p_1/p_2) . The value of the variable is constrained to be a member of the focus semantic value of the clause, which in both cases consists in a set of alternative propositions of the form **wear(mary**, x) (where x is a member of the domain of individuals D_e) or Y([$\lambda x.wear(mary, x)$]) (where x is an individual variable and Y is a quantifier of type <et,t>). The context must then specify a salient proposition of the required form as the value of each variable. In the case of p_1 , the value is the proposition expressed by the first clause.

As for the corrective import, we will first outline a general characterization of correction ($\S3.2$), and we will then consider the role of focus ($\S3.3-\S3.4$).

3.2. The corrective move

Correction is a complex conversational move which, as we saw, involves the denial of a previously asserted proposition and the assertion of a distinct proposition. We rely on van Leusen (2004)'s analysis, which we restate in terms of Stalnakerian context update. We equate van Leusen's context with the common ground, consisting in a set of propositions to which all the conversational participants are publicly committed, and which represents a shared information state.⁷ A conversational move is then a particular way of updating such a context.

Like any conversational move, correction is subject to a number of felicity conditions. The general consistency condition requires that both the input context and the output context be a consistent set of propositions; the informativity condition requires that the propositional content of an updating move is not already entailed by the input context (because this would correspond to a vacuous update).⁸ The more specific felicity conditions are the following:

⁵Cf. Rooth 1992:14.

⁶If one wants to analyze ellipsis along the lines of Merchant 2001, the ellipsis remnant must be extracted from the clausal constituent that undergoes ellipsis; we assume that such movement is triggered by an EPP-like feature borne by the functional head that licenses ellipsis.

⁷The common ground in turn characterizes a set of possible worlds, the context set, which includes all the worlds that are compatible with the shared information. We will refer to the common ground, rather than to the context set, as this is the simplest way to reformulate van Leusen's analysis. See also the last paragraph of this section for a more refined approach.

⁸Consistency and informativity correspond to Stalnaker's (1978:154) principle 1.

- **Locality condition**: The propositional content of a discourse move is interpreted as relative to a contextually given spatio-temporal-modal setting (or type of setting).⁹
- Antecedent condition: For a correction to be felicitous in a context C, C must entail an antecedent proposition which is the target of correction.
- **Incompatibility condition:** The context resulting from updating C with the corrective claim must entail the denial of the antecedent proposition (possibly via pragmatic strengthening).

To see how these conditions apply, consider for instance the corrective context (1). (1A) constitutes the antecedent proposition. Incompatibility and locality imply that the corrective claim (1B)/(1B') is inconsistent with (1A) in the context of interpretation C: in other terms, the antecedent proposition and the corrective claim 'are interpreted as mutually exclusive claims about a common local setting' (i.e. a specific situation).

In this way, correction achieves a complex update effect: the corrective claim entails the denial of the antecedent proposition; thus, in order to update the context with the content of the corrective claim without incurring a violation of Consistency, it is first necessary to retract the antecedent proposition from the context.¹⁰ This results in a (non-monotonic) retraction update, followed by a monotonic update.

Notice that we can avoid the retraction step if we assume that a correction takes place at a stage of the conversation in which the antecedent proposition is still at issue, namely, it has been asserted but it has not yet been entered in the common ground. This is possible if we adopt a more structured view of the discourse context, following Farkas & Bruce 2010: an asserted proposition immediately becomes part of the speaker's public commitments, but it is entered in the common ground only after it has been accepted (if tacitly) by all the conversational participants. From this perspective, correction is a type of 'reversal' move; anyway, it still holds true that the corrective claim is presupposed to be incompatible with the antecedent proposition.¹¹

3.3. The role of focus

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The next step is to define the role of focus in implementing a correction.¹² In this respect, van Leusen (2004:§5) provides a very interesting observation (cf. also Asher 2004:§2.3.2):

- A: I got the president a nice Delft china tray that matches the set he has in the living room. Was that a good idea?
- B: Nope. The president HATES the Delft china set. (Asher 2004:(26))

Our impression is that similar cases with a constituent in focus would not allow for focus fronting in Italian. We leave this problem for future investigation.

¹²Van Leusen (2004:§5) suggests that incompatibility follows if focus in the corrective claim triggers an exhaustivity presupposition: for example, in (1B)/(1B'), the only person that Gianni invited is Marina. This is sufficient to exclude the truth of the proposition asserted by speaker A. However, focus *ex situ* in Italian is not inherently exhaustive (Brunetti 2004); therefore, van Leusen's suggestion cannot be a general solution.

⁹Locality: For a discourse context C and a discourse contribution resulting in an update C[u], there is a local spatio-temporal-modal setting (or type of setting) s such that the semantic content of the contribution is situated in s and s is bound in C (C[u^s]). In the text we will leave implicit the reference to the local settings.

¹⁰As van Leusen notes, in virtue of incompatibility, the corrective claim need not contain any explicit marker of negation. This possibility was indeed tested in our experiment: as shown in Table 1, in condition 3 the target sentence in a corrective context did not include any marker of negation.

¹¹The notion of correction that we adopt here is clearly narrower than the one proposed by Asher (2004): the latter also subsumes cases where the corrected proposition has not been entered in the common ground by speaker A, but it is assumed by speaker B to be believed by A. For example, in (i) (due to Vallduví), speaker B corrects A's assumption that the president has some positive attitude about the china set:

The information structure of the corrective claim induces a 'parallelism constraint' relative to the antecedent in the context of interpretation. The background of the corrective claim must in a certain sense be 'shared' by the antecedent, and the focus must be contrastive to the parallel element in the antecedent.

This suggests that focus in a corrective claim is a specific type of contrastive focus: it contrasts the focussed element with a focus alternative that has been previously asserted.

This insight can be straightforwardly formulated in terms of Alternative Semantics.¹³ Consider again example (1) ((1B) and (1B') will have the same analysis):

 (1) A: Gianni ha invitato Lucia. John invited Lucy
 B': [[[MaRIna]_F [*pro* ha invitato]] ~ p₂] Marina (he) invited

Assume that in the corrective claim (1B'), the focus operator ~ adjoins at the clausal level and introduces a free variable p_2 . Recall that the value of this variable must be a member of the focus semantic value of the clause, which consists in a set of alternative propositions of the form **invite(john**, x) (where x is a member of the domain of individuals).¹⁴ Note that the antecedent proposition expressed by (1A) – **invite(john**, **lucy**) – is in fact a member of this set.

We can then recast incompatibility as a focus-related presupposition: namely, the presupposition that the context already supports a distinct member of the focus semantic value of the corrective claim, which is inconsistent with the corrective claim itself. (We return in §4 to the source of the incompatibility presupposition.)

(5) Incompatibility presupposition (Alternative Semantics version):

For a corrective claim Z and context C, $\exists p \in [\![Z]\!]^f [p \neq [\![Z]\!]^0 \land p = p_2 \land incomp(p, [\![Z]\!]^0, C)]$ where: $incomp(p, p', C) \leftrightarrow C \models p \land (C + p' \models \neg p)$.¹⁵

The free variable p_2 introduced by the focus operator (the incompatible alternative) must receive a value from the context: this will be a contextually salient proposition. This salient proposition will be the proposition expressed in the previous assertion. The latter thus qualifies as the target of the correction.

In (1), the incompatibility presupposition is satisfied in virtue of the fact that, as we noted above, the ordinary value of (1A) is a member of the focus semantic value of (1B'):

Presupposition: $\exists p \in [[(1B')]]^{f} [p = p_{2} = [[(1A)]]^{0} \land incomp(p, [[(1B')]]^{0}, C)]$ $[[(1A)]]^{0} = invite(john, lucy)$ $[[(1B')]]^{0} = invite(john, marina)$

¹³Below we briefly discuss another implementation in terms of Structured Meanings.

¹⁴If one assumes that illocutive operators are introduced in the compositional interpretation of the syntactic structure (Haegeman 2004, Krifka 2011), it is possible to define alternatives even at the level of the speech act (Tomioka 2010). We do not explore this possibility here, but leave it for future research. (See also §4.2 for further discussion of illocutive operators.)

¹⁵Incompatibility is formulated along the lines of van Leusen (2004:§4.1). However, as noted at the end of §3.1, with a more structured view of the discourse context this can be weakened to the effect that the relevant focus alternative has been introduced in the context, but has not yet been accepted by all the participants as part of the common ground, and hence is not entailed by it.

$$\begin{split} \llbracket (1B') \rrbracket^f &= \{ \textbf{invite}(\textbf{john}, x) \mid x \in D_e \} \\ & \longrightarrow \llbracket (1A) \rrbracket^0 \in \llbracket (1B') \rrbracket^f \end{split}$$

Note that the focus structure of the antecedent proposition (1A) is completely irrelevant, since we only use its ordinary value: thus, the presupposition is satisfied even if the corrective claim is under-focussed with respect to the antecedent (i.e. its focus constituent is smaller that that of the antecedent). This is a welcome consequence: as a matter of fact, (1A) need not have narrow focus on the direct object, parallel to (1B'), but it may have predicate focus or even broad focus on the whole sentence, and the correction conveyed by (1B') remains equally felicitous.

On the other hand, the exchange in (6) exemplifies a case where the incompatibility presupposition is not satisfied, leading to an infelicitous correction in (6C):

- (6) A: Dove studia Gianni ora? where studies Gianni now? 'Where does John study nowadays?'
 - B: Studia all'SOAS di Londra.(he) studies at the SOAS in London'He studies at the SOAS in London.'
 - C: No, [alla Royal Ballet SCHOOL]_F studia (# danza classica). no, at the Royal Ballet School (he) studies (# classical dance) 'No, he studies (classical dance) at the Royal Ballet School.'

The problem with (6C) is the presence of additional material (*danza classica*) with respect to the proposition asserted in (6B). (6B) is thus not a member of the focus semantic value of (6C):¹⁶

$$\begin{split} \llbracket (6B) \rrbracket^0 &= \exists e \text{ (study (e, john) } \land \text{ at}(e, \text{ SOAS})) \\ \llbracket (6C) \rrbracket^0 &= \exists e \text{ (study (e, john, cl.dance) } \land \text{ at}(e, \text{ RBS})) \\ \llbracket (6C) \rrbracket^f &= \{\exists e \text{ (study (e, john, cl.dance) } \land \text{ at}(e, x)) \mid x \in D_e\} \\ & \rightarrow \llbracket (6B) \rrbracket^0 \notin \llbracket (6C') \rrbracket^f \end{split}$$

Therefore, the incompatibility presupposition is not satisfied, and (6C) is not a felicitous correction of (6B). (Obviously, (6C) becomes a felicitous correction if we remove the offending additional material.)

To conclude this section, we wish to highlight some crucial aspects of this analysis:

- i. The focus semantic value is exploited at the level of the proposition. (Technically, the focus operator adjoins at the clausal level.)
- ii. Corrective focus conveys a *contrast across utterances*: the incompatible alternative comes from a previous speech act (it is the antecedent proposition).
- iii. The incompatibility presupposition has a direct impact on the discourse context, triggering the retraction (or rejection) of the antecedent proposition.

¹⁶Here we make explicit use of the Davidsonian event position (which was omitted for simplicity in the previous formulae) in order to analyse the locative modifier.

3.4 Partial incompatibility

Up to now, we have been reasoning in terms of incompatibility between two whole propositions. However, in a very intuitive sense not all of the corrective claim is incompatible with the antecedent proposition: only the focus is.

(1)	A:	John invited Lucy.		(antecedent proposition)
	B:	[Marina] _F	[he invited t]	(corrective claim)
		INCOMPATIBLE	COMPATIBLE	

In other terms, B's reply conveys a *partial denial*: the two speakers agree on the background information and disagree on the focus. This insight can be straightforwardly expressed with a Structured Meaning format along the lines of Krifka (2006). (1B) will have the following focus-background partition (disregarding for the moment the focus alternatives): the focus is the denotation of the direct object, and the background is the property of being invited by John.

(1) B: <marina, $[\lambda y.invited(john, y)]$ >

Suppose that we now assume a parallel partition of the antecedent proposition (1A):

(1) A: <**lucy**, [λ y.invited(john, y)]>

We can then say that the two foci are incompatible in that, when combined with the *same* background, they yield two propositions that are inconsistent in the context of interpretation. In other terms, corrective focus 'breaks up' the proposition into an incompatible part (the focus) and a validating part (the background with respect to which incompatibility is calculated).

If, following Krifka (2006), we enrich the structured meaning with a set of contextually salient focus alternatives (ALT([[FP]])), we can give a different formulation of the Incompatibility presupposition which expresses the idea of a partial denial:

(7) Incompatibility presupposition (Structured Meanings version):

 $\exists y \in ALT(\llbracket FP \rrbracket)$ incomp($\llbracket FP \rrbracket$, y, $\llbracket B \rrbracket$, C), where

 $-ALT(\llbracket FP \rrbracket) = a$ set of salient alternatives to the focus phrase denotation

-**incomp**(x, y, $\lambda z.B(z), C) \leftrightarrow C \models B(y) \land C + B(x) \models \neg B(y)$

(In prose: the presupposition that there is one member in the set of focus alternatives of the corrective claim which, combined with the same background B, yields a proposition that is inconsistent with the corrective claim in the context of interpretation C.)¹⁷

This will trigger a partial revision of the information conveyed by the corrected assertion.

The reader will immediately spot one shortcoming of this solution: it requires that the antecedent proposition and the corrective claim have a fully parallel focus-background partition, essentially equivalent to the congruence observed in question-answer pairs. But as we noted above, this is too strict a requirement: in the felicitous exchange (1), (1A) may have focus on the direct object, on the predicate, or on the whole clause. One possibility could be to invoke

¹⁷Note that this presupposition has purely existential force; no direct anaphoric link is established with the previous assertion, contrary to the Alternative Semantics version. However, the corrective import might be achieved if the set of salient alternatives is restricted to include only the alternative introduced in the previous assertion.

focus projection, and require that the focus-background partition of the corrective claim be parallel to one of the possible partitions of the antecedent proposition. However, the following example suggests that this will not do either:

(8)	A:	Cosa ne ha fatto Gianni della sua vecchia Fiat? what of-it has made John of his old Fiat?
		'What did John do with his old FIAT car?'
	B:	pro_k la_i ha [venDUta] _F . (focus on the verb)
		(he) it.F.SG. has sold.F.SG
		'He sold it.'
	C:	No, $[la ToYOta]_F$ pro _k ha venduto. (focus on the direct object)
		no, the Toyota (he) has sold
		'No, he sold his Toyota car.'

The focus-background partition of the corrective claim (8C) does not constitute one of the possible partitions of the antecedent (8B) according to the usual focus projection rule, since in (8B) the direct object does not bear the main sentence prominence:

[[(8B)]] = <[λx.[λy.sell(y, x)]], [λP.P(fiat)(john)]>
 under some assignment g such that g(k)= john, g(i)= fiat (John's old Fiat car)
[[(8C)]] = <toyota, [λx.sell((john, x)]>
 under some assignment g such that g(k)= john

This forces us to the conclusion that the original partition of the antecedent proposition can be revised 'on the fly'. This is perhaps not completely implausible, in view of the fact that correction does not constitute a canonical responding move in the same way as an answer to a question; therefore, unlike question-answer pairs, in this case a strict congruence cannot be imposed *a priori*. We leave this problem open for future investigation.

3.5 Intermediate conclusions

Under either of the analyses sketched above, we can identify two properties that are characteristic of corrective focus, as opposed to merely contrastive focus.

First, the domain of corrective focus is necessarily at the level of the *proposition*, whereas the domain of merely contrastive focus can also be defined at lower compositional levels (cf. e.g. Rooth's (1992) farmer example (11)).

Second, corrective focus is strictly tied to the *conversational dynamics*: the contrasting alternative comes from a previous speech act, and corrective focus conveys its rejection. In the case of merely contrastive focus, instead, both the contrasting alternatives are typically provided within a single speech act, as in (4) above.

We can now reconsider in the light of these observations the different availability of the two types of focus with respect to the *in situ* and *ex situ* positions, and the issue of optional movement.

4. General discussion

4.1 Optional movement and interface strategies

The experimental evidence provided in §2.1 allows us to make three preliminary, very general points:

- i. An undifferentiated notion of focus is inadequate to capture the syntactic distribution of focus elements in Italian, since it would leave unexplained the fact that in the merely contrastive condition, as opposed to the corrective condition, focus *ex situ* was virtually never preferred.
- ii. It has been suggested that focus fronting may be triggered by emphasis (Hartmann & Zimmermann 2007 on Hausa). However, unless this notion is explicitly defined and some diagnostic criteria are identified, it is impossible to compare such a view with our proposal.
- iii. Focus fronting cannot be analyzed as a purely 'stylistic' phenomenon occurring in the PF branch of the derivation: once again, from this perspective we could not explain why the availability of the fronted position is restricted to the corrective condition, namely, it is sensitive to interpretive properties of the context.

On the contrary, the interpretive distinction that we identified affects the syntactic distribution of the focus element. The next question, then, is: Why can corrective focus occur *ex situ*, and why cannot merely contrastive focus do the same?

Recall our earlier observation (§3.3) that corrective focus involves a contrast across utterances, whereas merely contrastive focus typically involves contrast within an utterance. This suggests that the core difference may lie in the extension of the domain of focus,¹⁸ and optional movement may be thought of as a way of marking the focus domain.

This insight fits with the 'flexible' approach to focus proposed by Neeleman and van de Koot 2008. In this approach, no syntactically active focus feature triggers movement, nor is movement necessary in order to make the focus structure readable at the interface (*contra* Rizzi 1997, Cinque & Rizzi 2008). Optional movement is triggered by an *interface strategy* aimed at disambiguating the extension of the domain of focus: an element freely adjoins to a dominating node, and at the interface, a templatic mapping rule may interpret the adjoined element as the focus, and the lower part of the adjunction structure as the domain of focus.¹⁹ Then, given that the domain of corrective focus must be a whole proposition, we expect that the focus element can adjoin to the upper edge of the clause.

The problem with this solution is that as far as we can see, it cannot really exclude focus fronting in the case of merely contrastive focus. This can in principle take as its domain any compositional level dominating the focus (Rooth 1992): but then, nothing prevents it from having a clausal domain, and according to Truckenbrodt's (1995:§4.4) principle of domain maximization, this option should be chosen whenever possible. Therefore, it seems that this solution does not account for the observed asymmetry.

4.2 Corrective focus as a root phenomenon

We therefore turn to the second property that we highlighted in \$3.5, namely, the fact that corrective focus implements a specific conversational move. An important observation is that a conversational move – a speech act – must be expressed by a root clause.

¹⁸In Alternative Semantics terms, the domain of focus is the compositional level at which the focus operator adjoins. In Structured Meanings terms, the domain of focus corresponds to the compositional level at which the focus-background partition applies.

¹⁹If no overt movement takes place, the structure can be interpreted by means of a covert mechanism, on which we cannot dwell here. Neeleman and colleagues (2007) define a notion of 'domain of contrast' which applies to both contrastive topics and foci.

The term 'root clause' was introduced by Emonds (1970) to characterize (a) syntactically unembedded clauses, and (b) a very restricted subset of embedded clauses (e.g. complements to verbs of saying). Starting from the seminal proposal by Hooper & Thompson 1973, a consistent line of research has pursued the insight that the crucial property of root clauses and root-like embedded clauses is their *discourse-active* status, namely their potential to convey a speech act (cf. Gärtner 2002, Meinunger 2004, Haegeman 2004, Dayal & Grimshaw 2009, Miyagawa 2011; for general discussion, see Haegeman 2011, Bianchi & Frascarelli 2010). A synthetic formulation of this view can be found in the following quote (Krifka 2011:2–3):

Root clauses have a functional feature that allows them to express assertions or other kind of speech acts, and due to this feature they cannot be embedded, if it were not for those exceptional cases that do allow for the syntactic embedding of speech acts.

The most straightforward implementation of this idea is, we believe, in cartographic terms. Suppose, following Krifka's suggestion, that the discourse-active status of a clause is encoded in a functional feature; it is natural to assume that this feature is realized at the clausal level, which semantically corresponds to a whole proposition. (We may actually take this functional feature to be the syntactic incarnation of an illocutive operator, as in Haegeman's (2004) construal of Rizzi's (1997) Force head.)

We then propose that the crucial property that licenses focus fronting is not the determination of the domain of focus per se, but rather, the necessarily 'root' quality of corrective focus, as opposed to merely contrastive focus.²⁰ In particular, we hypothesize that the corrective import – that is, the incompatibility presupposition – can only be licensed in a clause that carries the discourse-active feature.

This licensing relation can be implemented in at least two different ways. In cartographic terms, Incompatibility would be encoded in a functional projection situated in the left-periphery of discourse-active clauses; this projection attracts a [focus] element because Incompatibility must be calculated with respect to a focus alternative.²¹

However, the idea that a specific pragmatic import is encoded by a narrow-syntactic feature has been disputed as a violation of Inclusiveness (see Fanselow & Lenertova 2010 and Horvath 2010). Adopting this perspective, one could maintain a weaker licensing relation: movement of the focus constituent to the left periphery of the clause signals the fact that the focus alternatives are exploited at the discourse level in order to convey a particular type of context update; yet, in an exchange like (1), the discourse relation of correction linking (1B)/(1B') to (1A) is not directly encoded in the left periphery, but it is identified by the hearer as the most plausible way to embed (1B/B') in the overall discourse structure (along the lines of Asher 2004). This view minimizes the syntactic encoding of pragmatic functions, but still it must maintain that movement is licensed by the discourse-active status of the clause in which it occurs: therefore, this crucial piece of information must be visible to the syntax.

Note that under either version, our proposal implies that corrective focus always enters a dependency with the left periphery of the clause, even when the focus constituent appears to be *in situ*. In the next section, we reconsider the optionality problem in the light of this conclusion.

²⁰For empirical evidence that corrective focus is a root transformation, we refer to Bianchi 2011.

²¹If the discourse-active clause contains a topmost illocutive operator, the focus could be taken to associate with such an operator, along the lines of Beyssade et al. 2011.

4.3. Optionality and the syntax-prosody interface

According to our analysis, corrective focus is always licensed at the root of a discourseactive clause, even when it appears *in situ*. Still, the experimental results reported in §2 indicate that the fronting of corrective focus, though possible, is dispreferred with respect to the *in situ* alternative. To account for this apparent optionality, one might postulate that the movement of corrective focus to the left periphery can take place either overtly or covertly, and that the covert option is preferred by virtue of economy of derivation. However, as discussed in Alboiu 2003, a similar analysis is problematic, since focus *ex situ* would give rise to a violation of Procrastinate.

Building on Alboiu 2003, we propose a different account, in which optionality is reduced to the syntax-prosody interface. We assume a single derivational cycle with alternative linearization of one of the copies of a movement chain, and we hypothesize that corrective focus movement consistently takes place in the syntax; however, at the syntax-prosody interface, the mechanism of copy deletion can target either the higher or the lower copy. We argue that deletion of the higher copy – yielding focus *in situ* – results in an unmarked prosodic structure, while deletion of the lower copy – yielding focus *ex situ* – results in a marked prosodic structure. From this perspective, there is an intrinsic tension between the *ex situ* position, in which the corrective import is licensed, and *in situ* position, which is prosodically less marked.²²

In the following section we discuss in detail the relevant notion of prosodic markedness.

4.3.1. Fronted focus and prosodic markedness in Italian

Our notion of prosodic markedness is based on the rightmostness of prosodic heads. It is a widespread assumption (see Nespor & Vogel 1986) that in Italian the head within any prosodic constituent above the word level is assigned to the rightmost element. This is absolutely clear in broad focus sentences. In sentences with corrective focus, the main prominence of the utterance is consistently associated with the focus element, irrespective of its being *in situ* or *ex situ*,²³ however, in case of focus *ex situ*, the prosodic status of post-focal elements is controversial. According to Vallduví's (1992) seminal work (see also Szendrői 2002), Italian is characterized by a rigid prosodic template, in which rightmostness is never violated: the main prominence is invariably the rightmost phrasal prominence of the utterance, and all the elements following it are assumed to be extra-sentential and extra-prosodic.

This line of analysis, however, appears problematic in light of experimental research on intonation. Unlike what is observed in Germanic languages, in many varieties of Italian post-focal constituents associate with compressed pitch accents (see Grice et al. 2005 for an overview): consequently, these constituents cannot be analyzed as extra-prosodic, *contra* Szendrői (2002).

Bocci and Avesani (2011) have recently investigated the phonological status of post-focal elements, providing new experimental evidence against the alleged inviolability of rightmostness in Italian. They carried out a production experiment on read speech in which they com-

²²This situation is reminiscent of the economy condition of 'Minimize Mismatch' discussed in Bobaljik 2002 for A-chains.

 $^{^{23}}$ An instance of corrective focus in (Tuscan) Italian, independently of its being *in situ* or *ex situ*, systematically associates with a rising bitonal pitch accent L(ow)+H(igh)*. According to the experimental findings described in Bocci 2009, this notably contrasts with the nuclear pitch accent H(igh)+L(ow)* observed in broad focus sentences and in case of new information focus. Notice, however, that Bocci (2009) actually refers to corrective focus as contrastive focus. In future work, we plan to compare the intonational properties of corrective and merely contrastive focus, as defined in this paper.

pared the degree of metrical prominence assigned to post-focal elements. The experimental conditions are exemplified in Table 3.

Condition A	[Germanico vorrebbe invitare Pierangela] _{BF} Germanico would like to invite Pierangela
Condition P	[Germanico] _{CF} vorrebbe invitare Pierangela Germanico would like to invite Pierangela
Condition H	[Germanico] _{CF} la vorrebbe invitare [Pierangela] _{RDed} Germanico her-would like to invite Pierangela

Table 3. Examples of experimental sentences from Bocci & Avesani 2011

The stimuli presented an infinitival verb form (the target word) followed by its object and occurring in three conditions: (i) condition A: in a broad focus sentence (BF); (ii) condition P: following a subject on which the context imposed a corrective focus (CF) interpretation; (iii) condition H: following a CF subject and preceding a right dislocated (RD-ed) topic.

The rationale was related to the predicted metrical representations: see Table 4. In condition A, the infinitive was expected not to qualify as a phrasal head, since the head should be assigned to the object. Similarly, the infinitive in condition P, being followed by its object, should not qualify as a phrasal head, regardless of the metrical status of post-focal material.

In condition H, instead, the RD-ed object was expected to be phrased as an independent intonational phrase (ι) and, consequently, the infinitive was expected to be wrapped between the phonological phrase (φ) boundary closing the initial focus and the ι -boundary setting apart the RD-ed Object. If phrasal prominences were assigned in post-focal context by virtue of default mapping rules, the infinitive in condition H should qualify as a φ -head, being the rightmost element within its φ -phrase. Conversely, if post-focal elements were extra-prosodic, the infinitive should bear only a word-level prominence as in A and P.

Condition A: broad focus	{ [(*)φ (Germanico vorrebbe invitare Pie Germanico would like to invite F	U		phonological utterance intonational phrase phonological phrase
Condition P: initial corrective focus	{ * [* (*)φ ([Germanico] _{CF} vorrebbe invitare Pie Germanico would like to invite P	•		phonological utterance intonational phrase phonological phrase
Condition H: initial corrective focus, right dislocated	(*)φ(*)	-	* * rangela	-

Table 4. Metrical representations of the experimental sentences according to Bocci and Avesani's (2011) analysis

The results clearly showed that metrical phrasal heads are assigned to post-focal material in condition H. The infinitive (though 'given' in sense of Schwarzschild 1999 and part of the background) bore a higher metrical prominence than in A (where it is non-given but in a structurally weak position, i.e. non-head) and in P (where it is given and in a weak position): for instance, the infinitive's stressed vowel in condition H was characterized by significantly longer durations than in A and P, more extreme formant trajectories and higher spectral emphasis. On the basis of these results, Bocci and Avesani conclude that rightmostness is violated in condition H at the t- and v-level, and that the existence of a rigid prosodic template in Italian must be rejected.²⁴ According to their analysis, Italian prosody is rigid only in the sense that it fails to destress given information,²⁵ and that phrasing and headedness must apply exhaustively.²⁶

Let us now go back to the optionality of focus fronting. Given Bocci and Avesani's analysis, it follows that focus fronting necessarily induces a violation of rightmostness: since post-focal elements are not extra-prosodic, but phrased and headed in Italian, the assignment of the main prominence to focus *ex situ* gives rise to a marked prosodic structure.

Recall from §2.1 that in our experimental results, focus fronting was a possible option in the corrective conditions, unlike the merely contrastive condition, but the *in situ* position was preferred. This can be explained as a syntax-prosody interface effect: spelling out the *ex situ* position gives rise to a more marked prosodic structure with respect to the *in situ* position.²⁷

Notice that prosodic markedness can also account for another asymmetry. As shown in Figure 1 in §2.1, in the corrective contexts the probability of preferring focus *ex situ* is higher in case the negative tag does not occur (Condition 3, 25%) than in case it occurs (Condition 2, 13%).²⁸ According to Bocci (2009), negative tags are produced as an independent prosodic phrase (be it a phonological phrase or a phonological utterance) which undergoes a prosodic compounding process joining the negative tag and the main clause. Crucially, within the prosodic constituent in which the tag is phrased, the highest prominence is assigned to the negative tag involves an independent violation of rightmostness. This is illustrated in the upper part of Table 5, exemplifying the metrical representation of the experimental sentence in Condition 2 with focus *in situ* and a negative tag (cf. Table 1, §2.1).

If we combine a negative tag with a focus *ex situ* in the main clause, the resulting prosodic structure involves a double violation (see the lower part of Table 5).

²⁴Samek-Lodovici (2006) argues that fronted focus in Italian results from the right dislocation of post-focal material. This analysis is similar to the one proposed by Szendrői. However, Samek-Lodovici's account does not state that post-focal elements are prosodically invisible and, therefore, it is consistent with Bocci and Avesani's results. For reasons of space, we cannot discuss this proposal in detail, but we refer the reader to Bocci (2009) for a discussion.

²⁵This is not a new observation: see, for instance, the discussion in Ladd 1996 and the experimental results discussed in Swerts et al. 2002.

²⁶Crucially, according to Bocci and Avesani's analysis (see also Bocci 2009), the occurrence of post-focal phrasal prominences in condition H is not due to specific discourse-related properties (such as a second occurrence of focus), but only to default mapping rules.

²⁷Notice that in the experimental stimuli with focus *in situ*, the focussed element occurs in sentence-final position, and therefore, the prosodic structure complies with rightmostness.

²⁸The experiment described in §2.1 was not designed to compare these two conditions. We plan to investigate the impact of the negative tag in a dedicated experiment. At the present stage of investigation, we simply take the observed asymmetry between Condition 2 and Condition 3 as a tendency.

Focus <i>in situ</i> + negative tag	{ {* } {*	}υ′ }υ
]l *)@
		JΨ
	Si era messa [un ArMAni] _{CF} non uno straccetto di l	
	(she) wore an Armani (dress), not a cheap dress from	n H&M
Focus <i>ex situ</i> +	{	}υ′
negative tag	$\{ \begin{array}{c} * \\ \end{array} \} \{ * \\ \end{array}$	}v
	[*] [*]ເ
	(*) (*) (*) (*) (*)φ
	[Un ArMAni] _{CF} si era messa non uno straccetto d	i H&M
	an Armani (dress) (she) wore, not a cheap dress from	om H&M

Table 5. Metrical representations of the experimental sentences in Condition 2

This accounts for the lower rate of preference for focus *ex situ* in Condition 2 with respect to Condition 3.

5. Summary

In this paper we provided experimental evidence that supports a distinction between two interpretive imports that may associate with a focus structure: (a) a merely contrastive import of a focus structure and (b) a corrective import. We showed that the specific import of a focus structure affects the distribution of the focus element in Italian: in particular, only the corrective import can license the *ex situ* position ('focus movement').

We proposed that the crucial difference relates to the fact that the corrective import has an impact on the conversational dynamics, and therefore, it can only be licensed in discourse-active clauses: only the latter can convey a conversational move, that is, a specific proposal to update the discourse context. We then sketched a cartographic implementation of this insight, whereby the corrective import is licensed in the left periphery of discourse-active clauses. This explains why only corrective focus, but not merely contrastive focus, can target a left-peripheral *ex situ* position.

The surface optionality of such movement was resolved at the syntax-prosody interface. We proposed that the focus element always enters a dependency with the left-peripheral position, but at the interface, it is possible to spell out either the higher or the lower copy of the dependency. The first option, however, gives rise to a marked prosodic structure violating the rightmostness requirement, since the fronted focus element, bearing the main prominence at the t-level, is not in the rightmost position. This view is crucially based on the observation that in Italian, the post-focal material is not extra-metrical (Bocci and Avesani 2011), and hence rightmostness is a violable constraint.

We conclude with a general remark. Focus is a multi-layer phenomenon, affecting different aspects of interpretation (Krifka 2007). Previous accounts have related the phenomenon of 'focus movement' to the semantic core, that is, the determination of the domain of focus. Our results suggest that focus movement may be triggered by other aspects of interpretation lying outside the semantic core: in particular, those which relate to the conversational dynamics.

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