Kinds of evidence for linguistic theory[*]

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Abstract

The intimate relation between general theoretical hypotheses and the empirical data which can support them is the central topic of this paper. Data from different modes of acquisition are reviewed and discussed in the light of their significance for linguistic theory. Traditionally assumed correlations of properties related to the setting of the null subject parameter, availability of post-verbal subjects and modifications on the shape of the complementizer, are reinterpreted in terms of "weak" (not necessary) and "strong" (necessary) correlations on the basis of experimental acquisition data. Paths of acquisition of French and Italian clitic pronouns in different modes of acquisition are considered revealing of the possibly different analysis that clitic pronouns can be more readily subject to in different languages.

Keywords: null subject, (free) inversion/VS, que > qui, clitics, focus, discourse-related positions, weak pronouns

1. Introduction

A well known crucial struggle for theoretical linguists is the search for the appropriate kind of evidence that should guide them in the choice of the optimal formal analyses for empirical linguistic data of various sorts. Data do not come with a label of what the formal mechanisms involved in their computations are, nor do they come with a comment of what their overall significance is for the general functioning of the speakers' internal grammar. Furthermore, linguists do not have any direct access to the functioning of the internal computational system at work in (different) human language(s), a well known aspect of linguistic research within the domain of cognitive sciences. At the same time, then, data are not clean nor is there an easy procedure available to the linguist to clean them up and understand what they mean, what they reveal of the formal properties of the I-language. A very general practice in the generative tradition since its beginnings has been that of taking so called "grammaticality judgments" given by native speakers as a privileged source of evidence to support or disconfirm general hypotheses and particular formal analyses. Various reasons explain the fortune of this quite widely adopted practice, mostly good ones. One such reason is that speakers' grammaticality judgments are relatively easy to obtain: the linguist must be smart enough to construct the appropriate examples to ask about and careful enough to clean them up in such a way that interfering factors do not obscure the relevant aspects of the hypothesis to be tested. In this sense, the theoretical linguist builds up experiments, and interfering factors and variables have to be controlled for

Adriana Belletti

exactly as in all experimental research. The examples to be presented to native speakers in order to have their grammaticality judgments constitute, in a sense, the purest and simplest kind of experimental design that the linguist can build up: no machinery or any special lab is needed for that. The easiness ends here, though: in order to construct the relevant examples to be judged, a very precise theoretical hypothesis is always presupposed.

One further, and rather obvious, reason for the wide use of speakers' grammaticality judgments in linguistic research is to be identified in the somewhat trivial fact that native speakers belong to a category of experimental subjects which is very easy to find: they are numerous and since the experiments to be undertaken do not involve any special setting nor do they involve any potential danger for the speakers' health and they usually take relatively little time to perform, native speakers are generally ready to take part in the experiments by providing their grammaticality judgments[1]. There is no deep reason, however, why grammaticality judgments should constitute the only source of evidence for linguistic theory. To make a parallelism, consider for instance the important progresses that have become possible in theoretical syntactic studies within the Principles and Parameters model once the comparative perspective has been seriously adopted as a general practice[2]. Until then, even abstracting away from the widespread prevalence of English as the language considered, different languages were typically analyzed as autonomous grammatical systems, and there was no systematic attempt to compare their properties with those of other languages, in particular of closely related languages. The comparative perspective, sometimes referred to as the "new comparative syntax", has allowed for substantial advancements in the understanding of Universal Grammar (UG) and its possible parameters of variation. Thus, not only was there at the time no principled reason to limit the analysis to one single language but there turned out to be important reasons to extend it and adopt the comparative perspective. The careful study of the subtle variations instantiated by the different Northern Italian dialects is a specially revealing case in point: as Kayne first put it, the numerous dialects provide an ideal laboratory for comparisons: small variations can often be neatly singled out, as other related properties are kept constant, since invariant (Kayne 2000, 2005). Hence, the overall significance of the variation and its possible limits can be best appreciated. The parametric perspective to the study of language variation has provided a greatly innovative approach to this domain, and it has contributed to bringing dialectal studies to the fore of the cognitive approach to the formal study of language[3].

More recently, language acquisition studies have started to play a somewhat similar role[4]. As a matter of fact, the relation between these studies and the comparative approach to language variation is a very tight one. The detailed knowledge of different grammatical systems, acquired through the comparative approach in formal theoretical studies, provides a crucial device in understanding subtle developmental behaviors

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[1] Sometimes they are even ready to imagine reasons and interpretations for their linguistic behavior. This is certainly in the experience of any linguist, who has then to be very careful in appropriately valuing the comments, as no direct introspective access to the mechanisms responsible for their linguistic behavior can be available to the speakers.

[2] For some references on the comparative perspective in theoretical linguistic research, in the area of formal syntax in particular, see Haegeman (1997), Rizzi (2000), Chomsky (2002) and the recent contributions in Cinque & Kayne (2005).

[3] See, in this particularly rich domain, the work by Benincà (1994); see also Belletti (1993), Poletto (2000), Manzini & Savoia (2005), among many others, for theoretically guided dialectal studies in the Romance domain.

[4] See Rizzi (2005) for recent discussion and an overview.

found in the acquisition of different languages. The cases in point are numerous; it suffices to mention here the pioneering acquisition study of this nature, namely N. Hyams' (1986) influential work on the acquisition of the null or non-null subject property of different languages, such as Italian and Spanish, on the one side, and English on the other. Subsequent studies in this same domain[5] have significantly changed the original interpretive proposal by Hyams (1986), on the basis of the differences emerged between the so called null subject phase in children acquiring a non-null subject language and real null subject languages (Rizzi 1993/94, 2005). Without attempting at providing a summary of the rich debate on the apparent similarities and important differences between adult and child null subject, which would take us too far afield, it is worth underscoring here that it is only through the comparative approach to the study of linguistic variation that these important differences have become clearly detectable and have been teased apart: the kind of unpronounced subjects found in the child null subject phase during development of a non-null subject language such as English or German, turn out to be much closer to adult Topic-drop phenomena of the kind found in a language like German, than to real null subjects of the Italian kind[6].

If general linguistic theory can guide and illuminate the understanding of patterns of development, as in the case just briefly reviewed, acquisition studies[7] can in turn provide a special kind of evidence for linguistic theory. Linguistic theory and acquisition studies can thus feed each other fruitfully. General hypotheses can be shaped slightly differently according to the evidence coming from acquisition (or pathology). Furthermore, different modes of acquisition, such as monolingual, bilingual, adult or child L2 and SLI acquisition can in turn provide a yet more fine grained kind of evidence for linguistic theory, in that subtle or otherwise invisible properties of different grammatical systems can become visible and can be better described and understood by taking into account data of this kind (Hamann & Belletti 2005)[8]. Thus, comparative acquisition studies can have far reaching consequences for the overall general linguistic theory, where the comparison is undertaken both with regard to the acquisition of different languages and to different modes of acquisition.

The present work discusses three examples of this sort. The direct theoretical and general relevance of the acquisition data reviewed will be brought to light and will constitute the central focus of the discussion throughout. Given the background set so far, the three cases to be reviewed will be referred to as Evidence 1, Evidence 2 and Evidence 3, respectively. The three kinds of evidence are briefly introduced in 1.1; they will be analyzed and discussed in detail in sections 2, 3 and 4, respectively. Some general conclusive considerations will be developed in section 5.

1.1 Three types of evidence

The three types of evidence that will be reviewed can be outlined as follows:

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[5] See Rizzi (1993/94), Wexler (1994), Hamann (2002), in particular and the references cited therein.
[6] See the references cited in the text and in the preceding footnote for detailed discussions and partly different approaches to the developmental issue raised by the child null subject phase.
[7] As well as studies of pathologies of different sorts for that matter.
[8] Linguistic data from other kinds of pathologies than SLI, such as Down and Williams syndromes, are currently being studied intensively. In the same spirit presented in the text, they constitute further potential sources of evidence.

- **Evidence 1**: one of the properties which has generally been assumed to correlate with the positive setting of the null subject parameter, with its core property identified in the availability of null (referential) pronominal subjects, turns out not to be a necessary outcome of such a setting. This property is the so called (free) subject inversion option, abbreviated sometimes here as (possibility of) VS. A weak correlation can rather be assumed to hold as schematized in (i); the acquisition data which contribute to support this claim are L2 acquisition data, as indicated in (ii):

(i)   *Weak correlation*: Availability of null (referential) subject >> possibility of (free) subject inversion/VS.
(ii)   (Adult) L2 acquisition data.

Any analysis which deals with the VS option in terms of a weak correlation with the null subject property receives support by these data. A detailed discussion of this evidence constitutes the focus of section 2.

- **Evidence 2**: contrary to the preceding point, a peculiar shape assumed by the complementizer in subject extraction (e.g. subject relativization) contexts in French qualifies as a necessary outcome of the negative setting of the null subject parameter in this language. A strong correlation appears to hold along the lines in (iii), suggested by the comparison with Italian; data from bilingual French/Italian acquisition, as indicated in (iv), support the strong nature of the correlation. The significance of this correlation will be taken up in detail in section 3.

(iii) *Strong correlation*: *Que > qui* alternation in French *vs* lack of alternation in Italian.
(iv)   Bilingual acquisition data.

- **Evidence 3:** different error patterns in the way in which clitic pronouns may be positioned in different modes of acquisition (bilingual, adult and child L2, monolingual) and in different languages (French *vs* Italian) can be revealing both of properties of the different acquisition modes and, what is particularly crucial here, of the possibly different analyses to which clitic pronouns can be more readily subject in different languages. Data illustrating placement errors will be reviewed (v); they are taken from different modes of acquisition appeared in the literature (vi). Section 4 will elaborate on the computational nature of these errors.

(v)   Placement errors of clitic pronouns in French *vs* absence of placement errors in Italian.
(vi)   Different modes of acquisition.

    The acquisition data which will be considered here in the light of their relevance for the general linguistic theory are taken from previous work. In particular, Belletti & Leonini (2004) will be the main source for Evidence 1, combined with more recent results obtained in Belletti et al. (2005). Belletti & Hamann (2004) provide the data on the bilingual acquisition of the *que > qui* alternation, crucial for Evidence 2. Finally, the main source of data concerning cliticization in different modes of acquisition, which will constitute the basis for Evidence 3, is drown from Hamann & Belletti's (2005) review of the issue for the acquisition of clitic pronouns in French, and from

conclusions reached in work by Ferrari (2006) and Leonini (2006) for the acquisition of clitic pronouns in Italian.

2. On Evidence 1: null subjects and (free) subject inversion/VS

Let us take Italian and English as two core instances of null and non-null subject languages respectively, widely discussed in the literature since the very beginning of the parametric approach[9]. Italian and English minimally contrast in paradigms like (1) and (2): a null (referential) pronominal subject is allowed with no particular formal or contextual restriction in Italian, while this is not the case in English[10]:

(1a) lui parlava   (2a) he talked
(1b) parlava   (2b) *talked
(1c) *pro* parlava   (2c) *pro* talked

As indicated in (1c) & (2c), the analysis adopted here assumes that a silent null personal pronoun *pro* is legitimate in the preverbal subject position in Italian, but it is not legitimate in English[11]. The availability of *pro* licensing is traditionally assumed to correlate with at least two other properties typically displayed in the two classes of languages

(i)   subject inversion / possibility of VS
(ii)   subject extraction through an overt complementizer

illustrated in (3)-(6) for Italian and English; in (7) French examples are given showing essentially the same pattern as in English:

(3)   parlava Gianni/un ragazzo
(4)   *talked John/a boy
(5)   Chi hai detto che parlava?
(6)   *Who did you say that talked?
(7a)   il/Jean parlait
        he/John talked.$_{3S}$
(7b)   *parlait
         talked.$_{3S}$
(7c)   *parlait Jean/un garçon
        talked.$_{3S}$ John/a boy
(7d)   *Qui as-tu dit que parlait?
         who have you said that talked.$_{3S}$

Consider first property (i); property (ii) will be addressed in section 3.

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[9] Chomsky (1981), Rizzi (1982).

[10] Where null pronominal referential subjects are marginally possible only in particular registers, e.g. in the diary style discussed in Haegeman (1990).

[11] This traditional account should be updated following Cardinaletti's (2004) proposal according to which various preverbal, high, subject positions are present in the clause structure and one such position is precisely dedicated to host *pro*. Licensing of *pro* should depend on some formal feature of the relevant functional head with which *pro* is merged. This assumes, as in Chomsky (1995, 2004), that parameters reduce to different features of functional heads in general, and that syntactic structures are built up through the general compounding operation Merge.

The observation that the Italian type of subject inversion yielding VS is possible with any verb class and with any kind of lexical subject, with no overt element filling the preverbal subject position has primarily lead to the conclusion that the possibility of VS is a typical null subject property.

Indeed, in non-null subject languages the order VS is lexically constrained (typically possible with some verb classes e.g. unaccusatives), it is best realized when the post-verbal subject is not a definite DP[12], and the preverbal subject position must be filled with an expletive element. Examples (8) and (9) show the pattern for French and English; (10) illustrates the parallel examples in Italian, showing no overt expletive in the inversion structure:

(8a)   il est arrivé plusieurs enfants
        it is arrived many children
(8b)   plusieurs enfants sont arrivés
        many children are arrived
(9a)   there came many children
(9b)   many children came
(10a)   sono arrivati molti bambini
        are arrived.$_{MASC.PL}$ many children
(10b)   molti bambini sono arrivati
        many children are arrived.$_{MASC.PL}$

Hence, the general property holds that in null subject languages (e.g. Italian) the extension of the phenomenon is wider. The classical proposal has thus been put forth that in all cases the preverbal subject position is filled by a silent element *pro*. In cases like (3) and (10a) the empty pronominal is the unpronounced version of the overt expletives of languages such as French and English in (8a) and (9a); in cases like (1b&c) it is a referential null personal pronoun.

Given the extension of the phenomenon, subject inversion/VS of cases like (3) has come to be known as *Free Inversion*.

However, more recent studies have brought to light the fact that inversion/VS is not free in null subject languages, but that it is clearly "discourse related". This can be simply shown by taking into consideration question-answer pairs like those in (11) and (12) in Italian, discussed in detail in Belletti (2001, 2004):

(11a)   Chi è partito / ha parlato?
        who is left.$_{MASC.SG}$ / has spoken
(11b)   è partito / ha parlato Gianni
        is left.$_{MASC.SG}$ / has spoken Gianni
(11c)   %Gianni è partito / ha parlato
        Gianni is left.$_{MASC.SG}$ / has talked
(12a)   Che cosa ha fatto Gianni?
        what thing has done Gianni
(12b)   è partito / ha parlato, Gianni
        is left.$_{MASC.SG}$ / has spoken, Gianni

As illustrated by (11b), the postverbal subject functions as the focus of new information; this is indeed the most typical discourse interpretation of a post-verbal

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[12] The so called "definiteness effect" (Milsark 1977; Belletti 1988; Moro 1997, among others).

subject. Notice, however, that in discourse intonationally appropriate conditions, suggested by the comma before the subject in (12b), a postverbal subject can also function as topic/given information. Concentrating here on the focal interpretation of the post-verbal subject, the clear contrast between (11b) and (11c) indicates that inversion/VS is not discourse-free: the post-verbal location of the new information subject is not just an option in the discourse conditions created by (11a), rather, it is a necessity[13].

The discourse related nature of subject inversion which yields the VS order, can be explicitly expressed within the guidelines of the cartographic approach[14]. As I have argued in detail in Belletti (2001, 2004a), the low part of the clause can be assumed to contain a VP periphery along the lines of (13):

(13) $[_{CP} \dots [_{TP} \dots [_{TopP} \text{ Top } [_{FocP} \text{ Foc } [_{TopP} \text{ Top } \dots \text{VP}]]]]]$

In (13), a discourse related position for new information, Focus, is present and Topic positions for given information are also present in this low area of the clause, thus paralleling in important ways the clause external Left Periphery[15]. The specifier of the discourse related new information Focus position can be assumed to host the postverbal subject. Thus, the new information interpretation comes as a consequence of the position where the postverbal subject ends up in the derivation of the VS order[16].

According to this analysis, a sentence like (11b) containing a postverbal focalized subject is thus associated with the following representation, where the subject "Gianni" fills the low Spec/FocP, the verb (here a past participle) has moved to some higher head above it, and a silent *pro* fills the high subject position of the clause:

(14) $[_{CP} \dots [_{TP} \textit{pro} \dots è \dots \text{ partito/ha parlato } \dots [_{TopP} [_{FocP} \text{ Gianni } [_{TopP} [\text{VP} \dots]]]]]]$

A crucial feature of this analysis is that subject inversion/VS structures involve two main factors: (i) availability/licensing of *pro* in the subject position of the clause; (ii) location of the subject in the dedicated position in the VP periphery.

The analysis, thus, partly dissociates the two properties which are currently assumed to be tightly linked through the positive setting of the null subject parameter in the following way:

> Availability of *pro*, the crucial null subject property, is a necessary but not a sufficient condition to allow for subject inversion/VS. Activation of the dedicated position in the VP periphery is also necessary[17].

The analysis just briefly summarized was based on a systematic description of the salient discourse properties of VS structures as they can be determined through the

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[13] Whenever the answer is expressed through a whole clause containing the verb. See the works quoted for a detailed discussion.

[14] See Cinque (2002), Rizzi (2004) and Belletti (2004b).

[15] Rizzi (1997) and subsequent literature.

[16] V movement to some high inflectional head yields the final linear order.

[17] Hence, the possibility opens up of a null subject language which does not "freely" allow for VS. The point is addressed in Belletti & Leonini (2004) and Belletti (2005a).

grammaticality judgments of native speakers[18]. We may now ask whether independent evidence of a different nature can also be found.

  Here comes the crucial relevance of acquisition data. Adult L2 Italian data contribute a peculiar kind of evidence that the split assumed by the analysis may be on the right track[19]. Consider in this respect the experimental results presented in Belletti & Leonini (2004). The experimental design utilized in this work consisted in presenting (non-advanced, intermediate) speakers of L2 Italian with different L1 backgrounds a number of short movies, all ending with a question on the subject that the L2 speakers were asked to answer with a whole sentence, expressing the verb. The experiment was designed to elicit VS structures, with S a new information focus subject. The elicited verbs belonged to different verb classes (see Belletti & Leonini 2004 for further details).

  Tables 1 and 2 summarize the results and indicate the comparison with the very different behavior of a control group of native speakers of Italian. It is worth observing right away that the extremely consistent behavior of the native group is by itself a very clear indication that, on one side, the experiment was well designed in that the expected structures were indeed elicited, on the other, that the discourse conditions correlating with the post-verbal location of the subject were properly identified: a post-verbal subject is interpreted as a focus of new information and a new information focus subject is most typically located in the post-verbal position. Some of the questions and the related expected answers of the elicitation test are given in (a) and (b) below respectively. Since the experimental situation provides a pragmatically controlled setting, it is specially significant and welcome that the results on the control group conform to the hypothesis previously solely based on native speakers' grammaticality judgments.

(a)   - Chi ha telefonato?   (b)   - Ha telefonato Francesco.
        'Who phoned? '   has phoned Francesco
      - Chi è partito?   - È partito un ragazzo.
        'Who left?'   is left a boy
      - Chi a bevuto il mio caffè?   - L`ha bevuta una ragazza.
        'Who drank my coffee?'   it-has drunk a girl

Table 1. VS/Null subjects (Italian *vs* French)

Groups	VS	Null subjects
Control group L1 Italian	**98%** (381/390)	**95%** (333/352)
L1 French	**21%** (25/117)	**70%** (73/104)

Table 2. VS/Null subjects (Italian *vs* German)

Groups	VS	Null subjects
Control group L1 Italian	**98%** (381/390)	**95% (**333/352)
L1 German	**27% (**167/626)	**55% (**313/574)

Similar results have been obtained with the same experimental task with "near native" speakers of Italian, with L1 English (Belletti et al. 2005), as illustrated in Table 3 for VS:

Table 3. VS

Groups	VS
L2 near natives	**38%** (192/510)
Controls	**87%** (209/240)

The results are very sharp: the L2 speakers utilize the VS order to a much more limited extent than native speakers, given the same discourse situation. The results on the so called L2 near natives show that this behavior does not change significantly even at a fairly advanced level of attainment.

The L2 speakers differ as to the answering strategy they preferably adopt to answer the questions in (a) above. This is also an interesting result by itself[20]. However, what is of interest here is that they systematically adopt VS to a significantly limited extent. The rate in the use of null subjects, on the other hand is very different. Tables 1 and 2 show that the L2 speakers utilize null subjects to a fairly high rate also at the non advanced level of attainment[21]. The same is true even more significantly at the near native level where the L2 speakers have performed really native like as for the use of null pronominal subjects in a spontaneous production experimental task. In this case there was no significant difference with respect to the control group: null pronominal subjects have been utilized in 52% *vs* 59% of the cases by near natives and natives, respectively[22].

In conclusion, the (adult) L2 acquisition data presented here indicate that the correlation between availability of null subject, interpreted here as *pro* licensing in the preverbal subject position, and free inversion/VS should be seen in a more fine grained fashion. The former property should be treated as a necessary, but not as a sufficient condition to make the latter structure directly available. Other factors condition the availability of VS. The analysis summarized above identifies these factors in precise discourse conditions and the related structural positions that express them. These data can then be taken as evidence that a dissociation between the core null subject property and VS is welcome and should be assumed. Thus, the correlation of properties should more appropriately be seen as a weak one, as claimed in section 1.1. The formulation of the null subject parameter and the analysis of subject inversion/VS structures should be able to express the partial dissociation of these properties. The analysis schematized in (13) has precisely these features.

3. On Evidence 2: *que > qui*

Subject extraction across an overt complementizer appears to be generally possible in null subject languages – where it is assumed to be indirectly performed from a low

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[20] See Belletti (2005a) for a discussion of this aspect. Note that the question opens up as to how and why the answering strategy adopted by the L2 speakers differ from the native one and seems to depend on the different L1s, at least in part.
[21] In Belletti & Leonini (2004) the calculation was done by counting the number of null pronominal subjects spontaneously utilized by the L2 speakers in an independent experimental task, presented in Leonini & Belletti (2004).
[22] See Belletti et al. (2005) for a detailed presentation.

position in the clause (see Rizzi 1982), and the more recent discussion in Rizzi & Shlonsky (2005)), an option available in null subject languages where the preverbal subject position can be filled with a non-overt expletive *pro*[23]. Consider in this respect the Italian subject relative clause in (15a) and the subject (long) interrogative in (5), repeated in (15b); (15c) is an example of object relative clause: note that the complementizer has the same shape in both (15a) and (15c), and it corresponds to the finite declarative complementizer *che*, present in (15b) (the symbol "-" indicates the approximate extraction site):

(15a)   Maria mi ha segnalato un libro che *pro* uscirà - il mese prossimo.
        Maria me has brought-to-my-attention a book that *pro* will-come.$_{3S}$ the month next
        'Maria has brought to my attention a book that will come out next month.'
(15b)   Chi hai detto che *pro* parlava?
        'Who have you said that *pro* talked.$_{3S}$? '
(15c)   Maria mi ha segnalato un libro che Jean recensirà - il mese prossimo su Le Monde.
        Maria me has brought-to-my-attention a book that Jean will-review.$_{3S}$ the month next on Le Monde
        'Maria has brought to my attention a book that Jean will review next month on Le Monde.'

    The same subject extraction does not appear to be equally possible in non-null subject languages. See as an illustration the impossibility of the English and French interrogatives in (6) and (7d) repeated here as (16a&b), and the French subject relative (16c):

(16a)   *Who did you say that talked?
(16b)   *Qui as-tu dit que parlait?
         who have-you said that talked.$_{3S}$
(16c)   *Marie m'a signalé un livre que va paraître le mois prochain.
         Maria me has brought-to-my-attention a book that Jean will-review.$_{3S}$ the month next on Le Monde

The examples in (16a-c) are known in the literature as typical illustrations of the so called "*that-* trace effect" (Chomsky 1981; Kayne 1981; Rizzi 1990).
    Different non-null subject languages repair the violation created by the extraction of the subject in different ways. French switches the complementizer *que* to the form *qui*, the so called *que > qui* alternation, illustrated in (17a), which minimally contrasts with (16c) above. Note that no alteration in the form of the complementizer is manifested in the case of an object relative in French, as illustrated by (17b), which minimally differs from (17a) in this respect:

(17a)   Marie m'a signalé un livre qui va paraître le mois prochain.
        Marie me has brought-to-my-attention a book that will.$_{3S}$ appear the month next

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[23] Rizzi & Shlonsky (2005) conjecture that extraction from a low post-verbal position is systematically felicitous only in languages which avail themselves of a non overt expletive *pro* in the preverbal subject position. Null subject languages are typically languages of this type. See Nicolis (2005) for converging evidence from Creoles. See Belletti (2005a) for partly related discussion involving doubling structures.

(17b)   Marie m'a signalé un livre que Jean va commenter le mois prochain dans Le
        Monde
        Marie me has brought-to-my-attention a book that Jean will.$_{3S}$ comment in Le
        Monde

Qui has been interpreted as a kind of agreeing form of the declarative complementizer *que*[24]. The switch is assumed to guarantee that the general formal constraint, ECP – and its successors – which is violated by direct subject extraction from the preverbal subject position, be thus satisfied.

As is clear even from this very brief summary of a long standing debate, the *que > qui* alternation is a property of French which is tightly linked to the negative setting of the null subject parameter. As noted, no similar alternation is at work in Italian, as illustrated in (15). The Italian complementizer does not need to be involved in repairing a structure which does not need any repair to start with since *pro* can fill the high subject position in a null subject language like Italian. The correlation between the non-null subject nature of French and the operation of the *que > qui* alternation can thus be considered as a strong, principled one.

Can acquisition data tell us something about the assumed strong status of the correlation? An interesting hint comes from the productions of the French/Italian bilingual child Lorenzo, discussed in detail in Belletti & Hamann (2004). Note first of all that, from the very beginning of data taking, the child had a rich and faultless use of pronominal subjects in his French productions of tensed clauses, as required by the non-null subject nature of French[25]. Interestingly, it is also the case that the very first recordings contain instances of spontaneous productions of *que > qui* alternations. Lorenzo's productions in (18) suggest that the correlation established through the negative setting of the null subject parameter is a strong, principled one. These data are particularly significant not only internally to French but also in consideration of the fact that in the "other" language of the bilingual child, Italian, no such alternation is present, as already seen in (15):

(18a)   Non, c'est pas moi *qui* devrais l'amener.   (Lorenzo 3;5)
          no, it's not me who should.$_{1S}$ it-take-with-me
(18b)   Non, j'ai pas vu des voitures *qui* font comme ça.   (Lorenzo 3;7)
          no, I have not seen any cars which make.$_{3P}$ like that
(18c)   C'est la maison *que* je habite.   (Lorenzo 3;7)
          that's the house that I live
(18d)   Non. Je fais le papa *qui* fait la cuisine.   (Lorenzo 3;7)
          no. I make the daddy who makes the kitchen
(18e)   Mais il y a quelque chose *qui* ne va pas dans celui là.   (Lorenzo 3;8)
          but there is something which does not work in that one
(18f)   Oui, si tu dis que je fais les choses *qui* sont pas drôles, (Lorenzo 4;4)
          yes, if you say that I do the things that are not funny
          tu sais qu'est ce que tu prends?
          you know what you take?
(18g)   Non, c'est un outil *qu'*on utilise, là.   (Lorenzo 4;11)
          no, it's a tool which we use there

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[24] Incorporating a cliticized "expletive-like" "i", as in the analysis of Taraldsen (2001).
[25] The reader is referred to Belletti & Hamann (2004) for a closer discussion of this point.

(19a)   Oui, tu m'as dit *que* je ne pouvais pas faire comme ça alors. (Lorenzo 4;4)
        yes, you told me that I could not do like that then …
(19b)   Tu veux *que* je te fais rater, hein?   (Lorenzo 4;11)
        you want that I you-make fail?

Note the form *qui* of the complementizer in the subject relatives in (18a-b, d-e, f), and the form *que* in the object relative (18c) and the elided form in (18g) also contain the overt subject pronoun *on*. The productions in (19) are also interesting in that they show the appropriate use of the unaltered form of the declarative complementizer *que*, introducing a declarative subordinate clause. On the complementizer status of *qui* in the *que* > *qui* alternation the following properties must be kept in mind:
(i) It must be kept distinct from the relative pronoun *qui* which is only compatible with an animate relative head (Kayne 1974):

(20a)   l'homme à qui je pense
        the man to who I think
(20b)   *la voiture à qui je pense
        the car to who I think

The complentizer *qui* appearing in cases of subject extraction is perfectly compatible (and necessary) with an inanimate relative head:

(21)   Voilà la voiture qui partira demain.
        here the car which will-leave.$_{3S}$ tomorrow

Note that the child's productions in (18b) and (18e) are particularly revealing in this respect of an appropriate use of the altered form of the complementizer.

(ii) In French, the form *qui* of the complementizer also shows up in contexts of long subject extraction. Note that in these cases no relative pronoun would appear anyway (Kayne & Pollock 1978):

(22a)   l'homme que Marie dit qui parle Français
        the man that Marie says who speaks French
(22b)   le livre que Marie dit qui - sortira demain
        the book that Marie says who will-come-out.$_{3S}$ tomorrow

Going back to the acquisition data on the *que* > *qui* alternation, it should be noted that no similar alternation data are documented in the (smaller) Italian corpus of the same bilingual child[26]. This fact, besides constituting interesting subtle evidence for the so called "separate systems hypothesis" of bilingual development, has an impact which is of direct relevance for the main focus of the present discussion. The spontaneous productions of the bilingual child provide a sort of "natural experiment" whereby the strong correlation between the shape of the complementizer and the (negative) setting of the null subject parameter is very clearly manifested. It is simultaneously realized both "positively" (in French through mastering of the alternation) and "negatively" (in

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[26] Null pronominal subjects are overwhelmingly instantiated in the Italian corpus.

Italian, through absence/no extension of the alternation) in the two languages involved[27].

4. On Evidence 3: object clitics

The acquisition of Romance kind object clitics has been repeatedly shown in the literature to be somewhat problematic. For instance, in French monolingual L1 acquisition subject (weak) pronouns have been shown to appear earlier than object clitics (Hamann et al. 1996 and subsequent work). However, as can be seen in the relevant literature, the difficulty can manifest itself differently according to the different modes of acquisition[28]. In particular, let us focus here on the following aspect:

(i)   *placement errors* of object clitics have never been documented in monolingual acquisition[29];

(ii)   *placement errors* of object clitics have been (repeatedly) documented in bilingual/ child[30] and adult L2 acquisition.

However, a difference emerges depending on the target (L2) language:

(iii)   *placement errors* of object clitics in bilingual/child and adult L2 acquisition have been documented for French but not for Italian (neither in elicited nor in spontaneous production[31])

Hamann & Belletti (2005) identify a typology of placement errors which have been reported in the literature on French. A sample is given below[32].

(i) *Clitic in complement position:*

(23a)   moi, j'ai trouvè le   (Greg 14 months , White 1996)
        me, I have found-it
(23b)   alors, tu joue avec le   (Elisa 4;2 , Belletti & Hamann 2004)
        then, you play with-it

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[27] The following sentence produced by Lorenzo indicates the appropriate use of the unaltered form of the Italian complentizer *che*:
    (i) Grazie, signore *che* mi avete dato un balloncino   (Lorenzo 3;7)
        thank you sir that me-have.$_{2P}$ given a small-balloon
[28] The discussion here is based on Hamann & Belletti (2005); see the references cited there for different aspects of the acquisition of cliticization in different modes of acquisition.
[29] Nor in SLI acquisition, according to Hamann et al. (2003).
[30] As discussed in Hamann & Belletti (2005), it is worth differentiating between bilingual acquisition (two languages acquired from birth; Meisel (1990)) and child L2 acquisition (second language acquired early on in infancy). While the former typically develops faultless, apart from some minor possible manifestations of contacts in some areas (Hulk 2000), and does not have developmental phases distinguishable from those manifesting themselves in the monolingual acquisition of the two (or more) languages, the latter typically displays patterns of adult L2 acquisition, although a quick development occurs, making the acquirer's linguistic behavior soon virtually undistinguishable from that of an early bilingual. The spectrum of subtle variations between these two border cases is potentially quite wide as it both involves conditions internal and external to the acquirer. The matter will not be pursued any further here.
[31] See Leonini & Belletti (2004), Ferrari (2006) and Leonini (2006).
[32] See Hamann & Belletti (2005) for further details. Although the placement errors reviewed here are never very frequent in the L2 acquisition of French, nevertheless they are systematically documented. This is not the case for the L2 acquisition of Italian in this domain.

(23c)   non, on laisse le   (Elisa 4;2)
        no, one leaves-it
(23d)   je prends la   (Anouk 3;03,23 , Hulk 2000)
        I take-her
(23e)   on prend le gaz et refroidir le (Karl, 8 months exposure, Granfeldt & Schlyter 2004)
        one takes the gaz and recool-it
(23f)   elle demande la   (Petra, 5 months exposure, Granfeldt & Schlyter 2004)
        she asks-her
(23g)   elle croit la
        she believes-her

(ii) *Auxiliary – Clitic - Past participle:*

(24a)   ça a m'étranglé   (Elisa 5;5 repeated)
        this has me-strangled
(24b)   regarde, là j'ai m'étranglé   (Elisa 5;5 repeated)
        look, there I have myself-strangled
(24c)   t'as le mis trop chaud   (Anouk 3;06;25)
        you have it-put too hot
(24d)   après il a se réveillé   (Ivar 3;02;14, Crysmann & Müller 2000)
        then he has himself-waken-up
(24e)   vous avez la pris   (Emma 17, Herschensohn 2004)
        you have her-taken
(24f)   il a les fini
        he has them-finished
(24g)   il a lui assis   (Petra, adult; 7 months exposure)
        he has him-finished
(24h)   j'ai le vu   (Karl, adult; 2;10 months exposure)
        I have him-seen

(iii) *Clitic in "isolation"*

(25a)   c'est moi le   (Elisa 4;2)
        this is me it
(25b)   le quoi?   (Lorenzo 3;7)
        it what
(25c)   je la aussi mets dans la boite   (Anouk 3;10;07)
        I her as well put in the box
(25d)   tu peux le très bien faire   (Anouk 4;06)
        you can it very well do

    Let us make explicit the basic analytical assumptions, schematically indicated below:

(i)   pronouns are DPs;
(ii)   clitics are the head of a pronominal DP (D);
(iii)   three classes of pronouns can be distinguished: strong, weak and clitics
        (Cardinaletti & Starke 1999);
(iv)   pronominal DPs move in the clause structure as XP-maximal projections (into
        some functional position dedicated to the different classes of pronouns);

(v)   cliticization involves a further step in the movement of the pronominal DP: movement of the clitic pronoun as a head X° (into a dedicated head position in the clause; the same ultimately also containing the finite verb)[33].

Given these assumptions, the placement errors considered could receive the following interpretation: they could result from a misanalysis of the object clitic as a weak pronoun (or possibly as a strong pronoun for the "Clitic in isolation" case), hence a DP/XP, rather than as a syntactic clitic, i.e. ultimately a D°/X.

A number of questions arise here; the following two can be singled out, which are of particular relevance for the focus of the present discussion:

(a)   What should favor the weak (or strong) pronoun analysis in the bilingual/L2 setting also accounting for the lack of placement errors in monolingual acquisition?

(b)   What may explain the difference between French and Italian in this domain of acquisition, with placement errors (so far) undocumented in Italian?

The questions can be given the (preliminary) following answers, tentatively phrased here in term of speculations.

Speculation 1: The weak pronoun analysis could be favored by the following two factors involving properties of both the target L2 language and the L1:

(i)   it could be prompted by the existence of weak pronominal subject pronouns (*je, tu, il, elle…,* which have been shown not to pose special acquisition problems) in the L2 target language French;

(ii)   it would also be more readily compatible with properties of the pronominal system of the other language of the acquirer (e.g. a Germanic language in the typical cases above), which lacks Romance type clitics but has weak (and strong) pronouns in the pronominal system.

Hence, according to this hypothesis, both properties of the target second language and of the first language may influence the analysis adopted by the L2 acquirer, with the option shared by both languages being somewhat privileged hence entertained at some initial stage of acquisition.

Speculation 2: The hypothesis in (i) of Speculation 1 could also provide a principled reason for the lack of placement errors in bilingual/child and adult L2 acquisition of object clitics in Italian: since Italian lacks (conspicuous) instances of weak pronouns, factor (i) is not at work for the L2 acquirer of Italian.

The following *further speculations* may be added to complete the picture:

(i)   The weak pronoun/maximal projection analysis can be assumed to be overall more "economincal" as it implies a simpler computation than the clitic analysis. This could provide a reason for the delay of acquisition of object clitics with

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[33] The analysis can also be phrased in terms of Sportiche (1996). For concreteness, I am assuming the analysis in Belletti (1999); see this work for further reference on the computations involved in cliticization.

respect to subject (weak) pronouns in French L1 acquisition, referred to at the beginning of the present section.

(ii)   On the other hand, lack of the second factor of Speculation 1, which identifies a crucial role of the grammatical system of the other language(s) involved in the acquisition process, might suggest a reason why placement errors are typically absent from monolingual L1 acquisition of object clitics, with no difference between French and Italian in this respect. Overall, the bilingual/child-adult L2 setting provides an input which is at the same time richer and poorer than the monolingual one. On the one hand, there may be less input data for each single language. On the other hand, more UG options can manifest themselves through the input data of the two (or more) languages. In consequence, different UG hypotheses may be likely to be tried out more readily in these conditions of language acquisition, than in a monolingual situation[34].

(iii)   Furthermore, lack of (conspicuous instances of) weak pronouns in Italian makes the more economical analysis not a real option in monolingual acquisition of Italian anyway. *A fortiori*, no placement errors are expected in this mode of acquisition in Italian[35].

Beside their intrinsic interest as for what they can reveal as far as different modes of acquisition are concerned, the data presented in this section seem able to uncover subtle differences between two closely related languages such as French and Italian in the closely related domains of the syntax of personal pronouns and clitics. The pronominal systems of weak and clitic pronouns in French and Italian are made somehow more visible through the peculiar lenses of bilingual/L2 acquisition. These acquisition data thus directly contribute a special kind of evidence for our general understanding of theoretically significant properties of the two different, though very closely related, grammatical systems in the area of personal pronouns.

5. Conclusion

The three kinds of evidence discussed in this article all share the common feature of considering data coming from (different modes of) language acquisition as a further, peculiar potential set of empirical arguments able to sustain, or refute, formal analyses independently formulated within the principles and computations of the general linguist theory. It has been argued that the partial dissociation between the core null subject property (*pro* in preverbal high subject position) and the availability of (free) subject inversion/VS independently assumed in recent analyses (Belletti 2001, 2004b) appears to be systematically confirmed by adult L2 acquisition experimental data on elicited productions of VS structures. Thus, these data provide an indirect support to this type of analysis and, more generally, to any analysis which interprets the correlation between the (core) null subject property and availability of VS as a weak correlation, dissociating the two properties to some extent. On the other hand, the French/Italian bilingual spontaneous production data reviewed here argue, in an original way, in favor of an interpretation of the *que > qui* alternation in French as a process tightly linked to the

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[34] This point is discussed in Hamann & Belletti (2005) with reference to the issue of cliticization. See also Belletti et al. (2005) for related considerations in the domain of the discourse properties of VS, discussed in section 2.

[35] It is occasionally claimed that object clitics appear earlier in Italian than in French in monolingual acquisition. If this is indeed the case, the present consideration could suggest a reason for the shorter delay.

negative setting of the null subject parameter, as proposed in the relevant quoted literature. Thus, any analysis which interprets the alternation as strongly correlating with such a negative setting receives support by these data. Finally, as for the acquisition of object clitics, it should first of all be noted that the hypothesis that subject pronouns and object clitics in French, despite their very close resemblance, should be analyzed as belonging to the different classes of weak and clitic pronouns respectively, is clearly supported by the different developmental patterns that the two classes of pronouns give rise to in all modes of acquisition briefly reviewed here. Thus, any analysis which makes the appropriate distinction receives support by these data. Furthermore, on the comparative side which has constituted the main focus of the discussion in this domain here, the different error patterns that the bilingual/L2 acquisition of object clitics gives rise to in French and Italian could suggest that French object clitics may be more prone to an analysis as weak pronouns at some initial stage of acquisition than Italian object clitics. This can be interpreted in terms of a somewhat indirect influence of the overwhelming presence of weak pronouns in the French pronominal system, instantiated by subject weak pronouns. It has been speculated here that since overt weak pronouns are poorly represented in the Italian pronominal system, the misanalysis of object clitics may be typically not entertained by the acquirers of Italian. These comparative acquisition data, thus, reveal, in a peculiar and somewhat unexpected way, the subtle but grammatically relevant distinctions in the systems of personal pronouns of French and Italian.

The different and unrelated domains explored here are just three relatively subtle examples of a potentially much wider database which linguistic theory can, and, actually, should exploit in the search of support for formal analyses and general hypotheses entertained in explaining aspects of the internal grammars of natural languages.

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