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The clitic string as a Pair Merge sequence

preprint

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Abstract: We argue that clitics are structured by Pair Merge, rather than by Set Merge. This contrasts with classical approaches treating the head status of clitics as derived from a fundamentally phrasal syntax. We show that different structures of merger for clitics and phrasal arguments (including full pronouns) can explain well-known empirical differences that otherwise need to be stipulated or derived via extra-syntactic—viz. morphological—mechanisms. This view of cliticization seems to run into immediate problems once we move away from object clitics in finite declarative sentences in Italian or French and tackle slightly less familiar linguistic systems that allow interpolation, enclisis (inversion), and allow clitic sequences to split (object vs. subject clitics). We argue that the above phenomena receive a principled explanation under the assumption that clitics are pair merged with different phase heads.

Keywords: syntax, Pair Merge, clitics, inversion, climbing.

1. Introduction

Clitics are heads whose syntactic distribution differentiates them from both inflectional affixes and from independent words, cf. the *special clitics* of Zwicky (1977).¹ Romance pronominal clitics are a case in point. For instance, clitics pattern against agreement affixes² because the latter are always suffixed, while clitics precede or follow the verb—viz. are proclitic or enclitic—depending on clause-level factors such as finiteness, force, polarity, information structure, etc. As for independent words (including strong pronouns), they can for instance be used in isolation, coordinated, or focalized, which is not the case for clitics. Further properties of clitics are often discussed, for instance whether they are arguments (goals of Agree) or whether they are agreement heads (Agree probes). Either way, they are distributionally clitics. Beside the fact that they have special syntax, i.e. distribution, nothing at all is presupposed here by the label clitic.

Clitics, as just defined, are widespread in languages of the world.³ The relevant elements are sometimes called clitics, sometimes object markers, “pronominal affixes”, or other. The important point is that their distribution makes clitics different from both affixes and words. When we consider Romance clitics we are therefore studying a typologically significant phenomenon, with possible universal implications. The Romance languages simply provide an especially favorable setting, defined by clearly circumscribed and largely standardized evidence, known in all of its syntactic, morphological and interpretive ramifications. Henceforth mention of clitics refers to Romance clitics and specifically pronominal clitics, generally exemplified with French and/or Italian. The prediction is that the analyses proposed have crosslinguistic (universal) application.

A reasonably complete account of clitics (in Romance) requires at least three issues to be addressed:

- (i) Merger: What is the position of clitics at first merge?
- (ii) Ordering: What accounts for the internal structure (order) of the clitic string?
- (iii) Placement: Do clitics move and to where?

¹ We wish to thank two anonymous reviewers, attendances at GLOW 44, GLOW in Asia XIII, and audiences in Florence and Utrecht for their feedback. The paper was conceived and realized jointly. For academic purposes, responsibility must be divided as follows: MRM §1-3; DP § 4-5.

² Rizzi (1986), Brandi and Cordin (1989) famously treats subject clitics in northern Italian dialects as inflections, this treatment is already rejected by Poletto (2000:10).

³ They are found in most Indo-European subfamilies, not only in Romance, but also in Slavic, Balkan and Iranian languages. To this, we must add several well studied families in the formal literature, namely the Semitic languages (Hebrew, Arabic, Amharic), the Bantu languages, the Pama-Nyungan languages (e.g. Walpiri).

In this work, we aim to answer (i)–(iii) by elaborating on two hypotheses:

- clitics are *pair merged* to phase heads: our model predicts that the order of clitic formatives does not necessarily follow (nor mirror) the order of set-merged arguments or argument-introducing heads (more on this in section 3.2) – though we do not contend that Pair Merge *per se* predicts the language-specific order of clitic formatives.
- Nonuniformity of theta-licensing: sentences containing clitics and sentences containing corresponding phrasal elements are not uniformly encoded in syntax, though they may converge at the interface.

The structure of the article is as follows: section 2 introduces some basic properties of clitics and reviews previous accounts; section 3 presents our analysis; section 4 deals with clitic placement; section 5 concludes.

2. Against a mixed head/phrase syntax for clitics

Most accounts of clitics build on the same premises as Kayne’s (1975) seminal account, by proposing a mechanism whereby clitics and corresponding XPs instantiate a single, uniform syntactic structure. In this section, we intend to show that uniformity leads to a not entirely satisfactory account of basic properties of clitics.

There are two standardized accounts of Romance clitics, namely the movement analysis of Kayne (1975; 1991) and the clitic-*pro* analysis of Sportiche (1996). In Kayne’s (1991) movement analysis, clitics are first merged in argument position as phrasal constituents and they necessarily undergo a movement derivation, at the end of which they are read as heads along the functional spine of the sentence. Several subsequent proposals are aimed at clarifying or simplifying this XP to H derivation. To quote Chomsky (1995: 28), “an item can be both an X° and an XP... and one case comes to mind as a possible illustration: clitics ... In its θ -position, the clitic is an XP; attachment to a head requires that it be an X° ”. In other words, the status of clitics as both minimal and maximal projections makes an XP-to-H operation of cliticization possible. Alternatively, Matushansky (2006) proposes that clitics undergo XP-movement in the syntax. M-merger comes into play postsyntactically and head-adjoins them to the verb in I.

More recently, Roberts (2010) sets out to defend the legitimacy of head movement against the criticisms moved by Chomsky (2001). An important component of his argument are clitics, which he takes to be first merged in argument position and head-adjoined to the nearest available functional head (*v* for accusative clitics, Appl for dative clitics etc.). The important property of this movement is that the label of the host position contains the label of the clitic (e.g. *v* contains ϕ , the object clitic), configuring a sort of incorporation (and circumventing among others, the important objection that the adjoined clitic would not command its trace – it does if it is part of the *v* label).

Facts concerning the order of clitics shed some doubts on the movement analysis. By order, we understand order in the syntax (dominance), as eventually reflected by linear order via some linearization algorithm at EXT (Chomsky 2013). Italian and French have the same order of direct object and indirect object DPs in phrasal syntax. Specifically, these two arguments are in a reciprocal c-command relation, since (unlike in English) a quantifier in either of them can bind a variable in the other, as in (1) for Italian and (2) for French. Though the linear order is normally DO > IO, as displayed, it can be inverted without changing the binding facts (see for instance Giorgi and Longobardi 1991:42-43; Pescarini 2014a on Italian; Boneh and Nash 2012 on French).

- (1) a. La maestra rende ciascuna cartella al suo proprietario
the teacher gives-back each schoolbag to its owner
b. La maestra rende la sua cartella a ciascun alunno
the teacher gives-back the his schoolbag to each student
- (2) a. La maîtresse a rendu son cartable à chaque élève.

- The teacher has given-back his schoolbag to every pupil
- b. La maîtresse a rendu chaque cartable à son propriétaire.
The teacher gave-back every schoolbag to its owner (Boneh and Nash 2012)

We also do not know of any respect in which Italian and French differ with respect to movement and constraints on movement. Under the movement derivation, we therefore expect that clitic order faithfully reflects phrasal order. This is obviously not the case, since third person accusative (Acc) clitics and dative (Dat) clitics are differently ordered in Italian and French, as in (3).

- (3) a. Gianni glie-lo ha reso (It.) 3Dat > 3Acc
Gianni to.him=it= has given.back
'Gianni gave it back to him'
- b. Jean le lui a rendu (Fr.) 3Acc > 3Dat
Jean it= to.him= has given.back
'Gianni gave it back to him'

Thus, (1)-(2) vs. (3) show that the same phrasal syntax can yield different clitic orders. The reverse is also true. For instance, selected and unselected datives have different orders with respect to accusatives in both Italian and French phrasal syntax (Folli and Harley 2006, Boneh and Nash 2012). While in (1)-(2) selected datives (i.e. indirect objects) are in a mutual c-command relation with accusatives, the unselected datives (benefactives) in (4)-(5) are higher than direct objects, since quantifier-variable binding is possible only from benefactives to direct objects as in (4a), (5a) and not the reverse.⁴

- (4) a. Il padrone di casa ridipinge il suo appartamento a ogni nuovo affittuario (It.)
the owner of the.house repaints the his apartment to each new tenant
- b. *Il padrone di casa ridipinge ogni appartamento al suo nuovo affittuario
the owner of the.house repaints each apartment to its new tenant
- (5) a. Marie a peint à chaque locataire sa maison. (Fr.)
Mary has painted to every tenant his house
- b. *Marie a peint à son locataire chaque maison.
Mary painted to its tenant every house (Boneh and Nash 2012)

Yet, when we turn to clitics, the same order found in (3) with indirect object clitics, is found in (6) with benefactives, in both Italian and French.⁵

- (6) a. Gianni glie-l' ha ridipinta (It.)
Gianni to.him=it= has repainted
'Gianni repaints it to his benefit'
- b. Jean le lui a repeint (Fr.)
Jean it= to.him= has repainted
'Gianni repainted it to his benefit'

In short, the clitic string varies in ways which do not reflect variation in phrasal syntax and, vice versa, order asymmetries in phrasal syntax are not preserved in the clitic string. Then, if morphological reordering (Bonet 1991 a.o.) is programmatically discarded, it is hard to avoid the conclusion that there is some fundamental asymmetry between phrasal syntax and clitic syntax that

⁴ The Italian data are essentially translations of the French data by Boneh and Nash (2012), to whom we refer for further illustration.

⁵ We refer the reader to Folli and Harley (2006), Boneh and Nash (2012) for reasons as to why notions of low and high Appl (Pylkkänen 2008) are hard to apply to Romance (contra Cuervo 2003).

the classical XP to H derivation cannot capture.

The alternative to the movement theory is base generation of clitics and this is given a minimalist implementation by Sportiche (1996). Sportiche proposes that object clitics are merged as Voice functional heads (AccVoice etc.), systematically agreeing with *pro*'s in argument position. The *pro*'s are in a theta-configuration with the verb, the clitic heads formally license the *pro*. In principle, Sportiche's approach provides a solution to the order issue, and other clitic/argument asymmetries, since Voice heads will have their own internal order. Other issues however arise. One is recourse to the empty category *pro*. Chomsky (2015) proposes that "Italian (and null subject languages generally) ... lack the EPP". If so, *pro* is still required for one, essentially ad hoc reason, namely allowing a phrasal syntax treatment of contexts (e.g. clitics) where no phrasal argument is present.

In connection with this latter observation, it is relevant to consider the fact that clitics are often found in idioms. For instance, in Italian the Acc clitic, inflected in the feminine singular (*la*), combines with selected predicates to yield idiomatic meanings. Some examples (among very many) are in (7a-c). Idiomatic *la* is often accompanied by idiomatic oblique clitics which can in turn appear in other idioms, for instance (8).

- (7) a. Chi **la** dura, **la** vince (It.)
 who 3acc.fsg= endures, 3acc.fsg= wins
 'Who endures, wins'
- b. Me **la** cavo
 refl.1sg 3acc.fsg=get.out
 'I manage'
- c. **Ce** **l'** ho fatta
 loc/ins 3acc.fsg= I.have made
 'I succeeded'
- (8) **Me** **ne** vado
 refl.1sg= from.there=I.go
 'I leave'

In (7)-(8) the Acc clitic has all the expected formal properties; for instance, in (7c) it triggers feminine singular agreement on the perfect participle. Therefore, we expect it to have the ordinary syntax of clitics, which in Sportiche's model implies an Agree relation with a *pro* in argument position. Thus, we say that [*la* [*dura* (*pro*)]], cf. (7a), is an idiom, which means it is not compositionally interpreted but rather listed in the lexicon. But if so, note that the [V *pro*] structure, whose idiomatic reading involves no theta relation between V and *pro*, denies the basic reason why *pro* would be merged in the first place. It seems simpler to assume that at least in idiomatic configurations the Acc clitic can discharge its formal properties without any need for a *pro*, which is therefore not merged.⁶

In short, Sportiche (1996) provides a no movement variant of the classical analysis of clitics, where the conjunction of phrasal and head syntax is encoded by *pro* and Voice categories respectively. The first merge of clitics as functional heads offers potential advantages in accounting for instance for their order. Yet the mapping to phrasal syntax (in the form of *pro*'s) implies once again that some asymmetries between clitics and phrases are not captured.

3. Clitics as pure heads: Pair Merge (sequence) implementation

3.1. Step A: dispensing with phrase syntax

⁶ The formulation of the argument in the texts is consistent with the observation of a reviewer that idioms depend both on a specific syntax and specific lexical material. The idiom is Cl-V. But precisely because of this, we question what motivates the additional *pro* structure, given that [V *pro*] is not a theta-configuration.

Steps towards a pure head syntax for clitics have occasionally been taken in the literature, but they yield only partially satisfactory insights into clitics. Manzini (2022), updating Manzini and Savoia (2005), cf. also Manzini and Savoia (2017), assumes that clitics are heads throughout the derivation. Their labels include N, D, ϕ for direct case clitics and Appl for other clitics (with different flavors: e.g. Dat, Loc(ative), Gen(itive), more on this below). Thus clitics are not exponents of specialized functional categories (Voice etc.), nor are they inserted under/incorporated into an independently defined sequences of heads (no cartography) by the derivation. Rather they themselves build the functional spine of the predicate/event through projection of their labels. In order to implement her program, Manzini has recourse to standard Set Merge phrase structure. As clitic labels project on the functional spine of the verb, they create ϕ P constituents (accusative, nominative) and ApplP constituents (with various flavours, Gen, Loc/Instrumental, Dat), whose internal order (or range of internal orders) matches that of independently postulated functional projections of the predicate. For instance, the final picture proposed for French looks as in (9).

- (9) French
 $[\phi P \text{ SubjCl}] \text{ } [IP \text{ } [v^*P \text{ } [AppIP \text{ } 1/2P, s_{eIO} \text{ } [\phi P \text{ } 3Acc, s_{eDO} \text{ } [AppIP \text{ } 3Dat, Loc, Gen \text{ } [VP$

Manzini also assumes that they are two paths to the satisfaction of the Theta Criterion. Following Chomsky (2000:93), an argument DP must be first merged in a theta configuration with a predicative head, at least when the theme (internal argument) role is concerned. However, Higginbotham (1985) also argues that an argument slot (the so called R role) is open at the N head of an NP, which he assumes to be a predicate. The slot remains open as the NP is variously modified, and is ultimately satisfied by a head, the D head. Similarly, Manzini's proposal is that a D clitic may satisfy the Theta Criterion, again at first merge, by closing some projection of a V predicate head, provided it has an open argument. Hence, the idea that clitics are heads throughout the derivation does not necessarily pose a problem for theta licensing, though it implies that the licensing mechanism of clitics differs from that of arguments. The discussion about theta licensing will be resumed in section 3.3.

The analysis in (9), nevertheless, covers part of the research questions listed in Section 1. Above all, it does not provide any hint about how to tackle the question of the final position where the clitic surface – which is generally not the v phase, but rather the C-I phase. To reach a better understanding of clitic syntax, in the following subsection we propose to move a step further, by suggesting that other differences between clitics and XPs obtain because clitics, are not set merged (even as heads), but pair merged, and in fact form Pair Merge sequences (Chomsky 2020; 2021).

3.2. Step B: dispensing with Set Merge

In this section, we develop a Pair Merge (as opposed to Set Merge) syntax for clitics. Specifically, we apply Chomsky's (2020) construct of Pair Merge sequence to model the clitic group, hence incorporation.

The operation of Pair Merge of α with β , notated $\langle \alpha, \beta \rangle$, is defined by Chomsky (2004:118-120), with the explicit intent of modelling adjunction of α to β . Since Pair Merge is not nearly as widely used as Set Merge, we preliminarily remind the reader of some of its basic properties. The element adjoined to, β , is first set merged; adjunction then applies to replace β by $\langle \alpha, \beta \rangle$. Applications of Set Merge and Pair Merge interleave in the derivation. Thus $\langle \text{ADJ}, \text{NP} \rangle$ can be embedded in a Set Merge structure $[\text{DET} \langle \text{ADJ}, \text{NP} \rangle]$. Conversely, ADJ can have internal set merged structure, for

instance a complement. At Spell-Out, $\langle \alpha, \beta \rangle$ becomes a simple structure, i.e. it undergoes simplification (SIMPL) to $\{\alpha, \beta\}$ for purposes of interpretation at SEM and linearization at PHON.⁷

Epstein, Kitahara and Seely (2016) explicitly extend Pair Merge to the other classical instance of adjunction, i.e. head adjunction. Chomsky (2020: 56) models at least inheritance pairs, e.g. $\langle C, I \rangle$, in terms of Pair Merge. Another important extension of Pair Merge is introduced by Chomsky (2020: 49-52) in the form of the notion of Pair Merge Sequence. The crucial step is acknowledging that the structure formed by the modifiers in (10) is “not just a set of paired elements, it’s a sequence of paired elements” as witnessed by *respectively* constructions like (11) (cf. McCawley 1998).

(10) I met someone young, happy, eager to go to college, tired of wasting his time, ...

(11) John and Bill are young and tall, respectively

Formally, as illustrated in (12), “we’re forming a sequence which begins with some conjunction, and then contains elements, each of which is predicated of something. So we have a sequence of elements that looks like [13], with links L_i ”. As for L, the suggestion is that “L for nominal sequences is just n , the categorizer of each of the coordinated phrases”, assuming that roots are themselves deprived of a category (Marantz 1997). In any event, independently of whether we want to adopt acategorial Roots or not, Links n , v and the like are independently individuated as phase heads (weak, strong).⁸

(12) $\langle \text{CONJ}, \langle S_1, L_1 \rangle, \dots, \langle S_n, L_n \rangle \rangle$

One interesting consequence follows from this treatment of conjunctions of modifiers concerning constraints on movement. Specifically, “if you have the phrase *old man*, you can’t extract *man* and leave *old*; you can’t extract *old* and leave *man*”, as already indicated by Chomsky (2004: 120) who explicitly excludes moving β in $\langle \alpha, \beta \rangle$, while leaving α in situ. Hence “you have the Coordinate Structure Constraint [CSC] because every term is inaccessible. You have the adjunct island constraint because you can’t pull the elements out of adjuncts”.⁹

In this article, we model the clitic cluster as a Pair Merge sequence, where each member of the sequence is formed by a clitic head and a link v (but see section 4 for a revision). We adopt the conclusion of Manzini and Savoia (2017), Manzini (2022), reviewed in section 2.2. above, that the internal order of clitics is comparable to the ordinary sequence of argument-related functional projections in the sentence, specifically ϕ P projections for accusative and nominative arguments (following Agree with v and I) and (variously flavoured) ApplP projections for oblique arguments. Parametric choices determine which of the possible sequencing of ϕ and Appl clitics is chosen by the language, yielding in particular crosslinguistic variation in the ordering of Acc and Dat clitics, cf. (3).

Earlier proposals on clitic structure were dismissed above because they predict a direct

⁷ The costs of introducing a more complex Merge operation are made fully explicit by Chomsky (2004). The alternative is Kayne’s (1994) proposal that all adjunctions reduce to Spec, head configurations. The costs of the model become evident in cartographic applications, where heads are postulated to support modifiers (Cinque 1999; 2010). Another possible element of complexity in Pair Merge is introduced by frequent informal references to structural “planes” or “dimensions” (Chomsky 2004: 117-118; Chomsky 2020: 49) – but this is only apparently so. Bi- or multi-dimensionality are not additional properties of Pair Merge, but rather informal ways of referring to their formal properties. In this vein, Chomsky (2020: 119) says that under SIMPL, “the α of $\langle \alpha, \beta \rangle$ is integrated into the primary plane, in the informal version”, and so on.

⁸ In this article, and following the suggestion of a reviewer, we use a non-root based framework, essentially to simplify the discussion. Nothing seems to us to hinge on this simplification.

⁹ As a reviewer correctly points out, in order to derive ATB (Across-The-Board) constructions (i), Chomsky (2021: 33-35) explicitly assumes that movement operations apply to Set Merge structure, before Form Sequence applies.

(i) (I wonder) [what, $\langle \&, \{ \text{John bought } \textit{what} \}, \{ \text{Bill handed } \textit{what} \text{ to Tom} \} \rangle$]

(ii) I wonder what John bought and Bill handed to Tom

As a point of fact, there is no contradiction between the ATB and the statements in the text, since it remains true that after the sequence is formed no member of it can be extracted, yielding precisely the CSC. We return to this matter in fn.11.

correspondence between the order of phrasal arguments and the order of clitics which is in fact not observed (neither match nor mirror). Pair Merge *per se* does not predict the (partially language specific) order of clitic sequences. However, Set Merge (roughly, argument structure building) and Pair Merge (roughly, head adjunction), taken together, provide us with the means for differentiating the order of phrasal arguments and that of clitics by purely syntactic means (recall that order phenomena are syntactic, though they are ultimately manifested by linearization).

Consider then the simple Italian sentence in (13). The internal order of the string points to *lo* ‘it’ merging first with *v*, followed by merger of the Appl clitic *gli* ‘to him’. This order of merger is independently attested in French with 1/2P datives and could easily fit into a Set Merge schema.

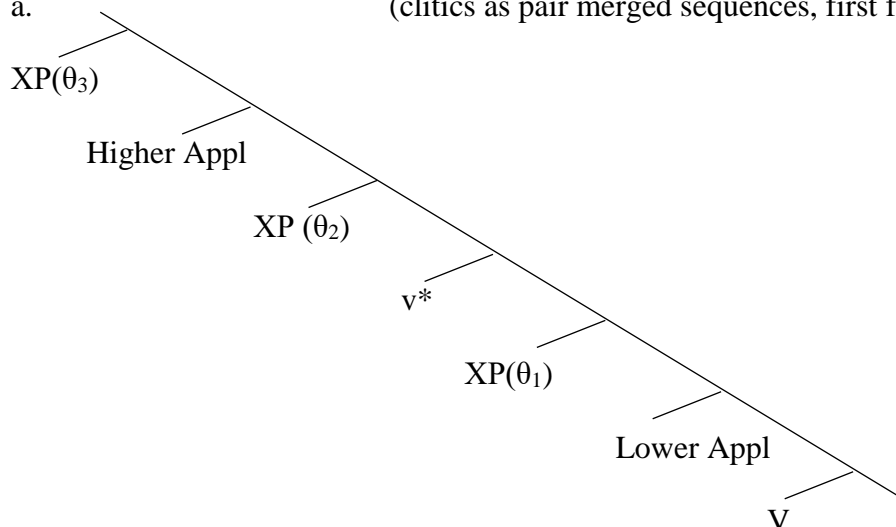
- (13) *Glìe-lo porta* (It.)
 to.him=it= he.brings
 ‘He brings it to him’

The core proposal we advance here however is that clitics do not Set Merge with VP. On the contrary a Pair Merge sequence is created, beginning with the Pair Merge of the inheritance pair $\langle V, v^* \rangle$, with v^* acting as the Link, and continuing with the elements that modify the verb in the sense of specifying its transitivity (the accusative clitic) or ditransitivity (the Appl_{DAT} clitic). The resulting Pair Merge structure can be represented as in (14), following Chomsky’s (2020) notation.

- (14) $[_{v^*P} \langle \langle \text{glìe}, v^* \rangle, \langle \text{lo}, v^* \rangle, \langle V, v^* \rangle \rangle] [_{VP} V]$

In this simple example, the order of the sequence of clitics is similar to the order of *v*-related heads, assuming that Pair Merge reflects the order in which theta roles are discharged. Schematizing, the correspondence between a conventional phrase marker for clitics (*qua* XP arguments) and the Pair Merge syntax envisaged here can be depicted as in (15a). The phrase marker in (15a) takes up again and generalizes the schema in (9) for French. The sequence in (15b) begins with the inheritance pair (V, v^*) , on top of which the other pairs are built in order of discharge of theta-roles.

- (15) a. (clitics as pair merged sequences, first formulation)



- b. $\langle \langle \text{Cl}(\theta_3) v^* \rangle \langle \text{Cl}(\theta_2) v^* \rangle \langle \text{Cl}(\theta_1) v^* \rangle \langle V, v^* \rangle \rangle$

The rough correspondence diagram in (15a), provided here to favour construal of the sequence in (15b), should crucially not be read as implying equivalence. The whole point of the discussion that precedes is that, while convergence at SEM should be insured between phrasal and clitic arguments, the syntactic structures implicated are not in a one-to-one relation. Set merged DPs and pair merged

clitics are not necessarily ordered (hence linearized) under invariant conditions crosslinguistically, cf. (3). Importantly, evidence from Romance shows that the ordering of Dat/Acc clitics is not uniform within the same language. Instead, the order of clitics is often sensitive to animacy, which is immaterial in determining the relative order (dominance, precedence) of phrasal arguments: for instance, 1/2P datives and 3P datives in the same function are split in French, cf. (16).

- (16) a. Ils **le** **lui** donnent (Fr.)
 They= it= to.him/her=give.3PL
 ‘They give it to him/her’
- b. Ils **me** **le** donnent
 They= to.me= it= give.3PL
 ‘They give it to me’

Phrasal datives normally split according to whether they are selected or unselected, as revealed by binding facts (recall (1)-(2) vs. (4)-(5) above). This distinction is obliterated in clitic syntax: all types of datives (indirect objects, secondary objects, experiencers, benefactives, caused subjects, datives of possession, etc., see (17)) are mapped to a single clitic form (e.g. *gli* or *lui*), which is linearized in the clitic string regardless of dominance relations observed among the corresponding phrasal periphrases.

- (17) a. gli telefona (It.) indirect object
 ‘he calls him’
- b. gli danno un premio indirect/secondary object
 ‘they award him a prize’
- c. gli piace experiencer
 ‘He likes (it)’
- d. gli apre la porta benefactive
 ‘someone opens the door for him’
- e. gli fanno aprire la porta caused subject
 ‘they make him open the door’
- f. gli lavo le mani dative of possession
 ‘I wash his hands’

We believe that Pair Merge sequences best capture the lack of dominance in clitic strings. Indeed, going back to the definition of Pair Merge by Chomsky (2004; 2020), it is evident from the example considered (adjectival modification), that though the sequence is internally ordered (it is, precisely, a sequence), only the sequence as a whole is ordered by dominance in the Set Merge tree. In other words, the Pair Merge sequence, however internally articulated, is a single syntactic object in the general phrase marker.¹⁰ Despite being obvious (in the sense that it holds by construction, not as a theorem), this result implies another important consequence, namely that the internal structure of the sequence is inaccessible to movement. Only the entire sequence is a syntactic object accessible to movement – a point already discussed when introducing the general notion of Pair Merge sequence in (12).¹¹ In essence, we take this important difference between Pair Merge and Set Merge to yield

¹⁰ This is also important when computing c-command relations (cf. Chomsky 2004) for the pronominal binding and disjoint reference of clitics *qua* pronouns. Another way to phrase the difference is that Set Merge creates recursive structures where, say, an ApplP dative projection can dominate another projection of the same label – the two being in a relative scope relation. Within a Pair Merge sequence, recursion is not defined. This may provide a purely syntactic perspective on another property of clitics, namely that it is generally impossible to find more than one occurrence of the same clitic within the string. The standard treatment is some form of morphosyntactic Identity Avoidance (Yip 1998). We leave this matter open for future research.

¹¹ Further pursuing the discussion in fn.9, a reviewer points out that elements in a sequence are accessible to operations before the sequence is formed, cf. Chomsky’s (2021) account of ATB constructions. As pointed out in fn.9, the fact

the incorporation property (see also section 4).

Against this background we can take up again the examples in (7), which illustrate idioms involving one or more clitics, as in the case of the It. verb *cavar-se-la* ‘to get by’ (lit. ‘to remove it_{fem} for oneself’). As already observed, the clitics have regular syntax (e.g. the accusative *la* agrees with the perfect participle, cf. the relevant example repeated in (18)).

- (18) Ce la siamo cavata. (It.)
refl it are got.out
‘We got by’

Idioms, whether involving lexical DPs or clitics, must be listed in the lexicon. Thus, it is impossible to replace the clitic pronoun by means of a full pronoun, i.e. a phrasal pronoun merged as an XP. This is because V-XP pronoun idioms and X-V idioms must perforce be separate listemes. The listing of Cl-V as an idiom renders previous derivational history at best redundant, since the very reason why a phrasal position of first merge (or a *pro*) is postulated, namely theta-marking, does not hold here, as already mentioned in the discussion of (7).

More importantly, as already mentioned, Pair Merge accounts for the fact that, in general, the clitic string cannot be split, and cannot be split from the verb in ad-verbal clitic languages, i.e. the languages in which clitics must be adjacent to verbs, including Italian and French. Kayne (2000: 48) illustrates the impossibility of splitting clitics from one another by the examples in (19), involving restructuring environments.¹² The only possible split is between subject and object clitics, for instance in French interrogatives (20a) or in languages like Borgomanerese (Tortora 2015; Manzini and Savoia 2017) where object clitics are enclitic (20b), cf. section 4.

- (19) a. *Gianni **vi** vuole mostrar**li**. (It.)
Gianni to.you wants show-them
b. *Gianni **li** vuole mostrar**vi**.
Gianni them wants how-to.you
‘Gianni wants to show them to you’

- (20) a. **Le lui** donnent-**ils**? (Fr.)
it to.him give-they
‘Do they give it to him?’
b. **i** tʃama-**lu** sempri (Borgomanero; Piedmontese, north-western Italo-Romance)
they call-him always
‘They always call him’

Data like (19) require an account of clitics where object clitics are accessible only as a cluster, possibly including the verb. In a Set Merge syntax, the only option open is to postulate incorporation of the clitics to the verb, independently of the specific mixed head/phrasal syntax proposed (Kayne 1991; Sportiche 1996; Roberts 2010). The solution we suggest is to resort to the alternative mechanism of Pair Merge sequences.

nevertheless remains that extraction of a member of the conjunction must be impossible by the CSC – hence in present terms, extraction of a clitic. The question posed by the reviewer therefore reduces to how the ATB is compatible with the CSC, arising quite independently of the present article. The answer is provided by Chomsky’s (2021: 34) discussion of the illformed (ii), contrasting with wellformed ATB extraction (i)

- (i) I wonder what John bought and Bill handed to Tom
(ii) *I wonder what John bought and Bill handed a sandwich to Tom

In the second case “FSQ (Form Sequence) induces a violation of CSC”. Similarly you couldn’t move just one clitic, since a CSC violation would ensue at FSQ.

¹² (Marginal) counterexamples are discussed in Pescarini (2014b; 2015).

The terms of the theoretical debate concerning head movement and incorporation are well-understood. In GB theory and in some minimalist models (Kayne’s LCA, cartography) head movement comes for free – namely it results from simply intersecting the notion of head with the operation of movement. Chomsky (2001) points out a number of difficulties for actually saying that head movement comes for free – since the properties of head movement are different from those of DP-raising or wh-movement. As an alternative, he suggests that head movement is a PF operation; perhaps m-merger (Matushansky 2006) may be thought of as an implementation of these ideas for clitics. In this article, we suggest a different path, namely taking the conventional (and well motivated) conclusion that cliticization is a core syntax phenomenon – but modelling it not via a Set Merge grammar but via a Pair Merge grammar.

In the present perspective, Pair Merge units of the general form $\langle \text{Cl}, v \rangle$ model clitic as heads adjoined to a functional projection of the verb. Pair Merge sequences of the general form in (15b) model the intuition that clitic heads form a complex syntactic objects with other clitic heads (and with the verb) – i.e. ‘incorporation’. This set of assumptions also comes at no cost, since Pair Merge is independently needed to model adjunction in instances of modification (Chomsky 2004; 2020), as well as verbal heads syntax, as explicitly proposed by Epstein, Kitahara and Seely (2016). Similarly, the notion of Sequence is independently needed to model coordinations (Chomsky 2021). Therefore what is really new in the present proposal is simply an extension to clitics, based on the conclusion that they also have a pure head syntax.

The question how Pair Merge and Sequences mesh in with Set Merge is also considered by the literature quoted. In present terms the question is how these ideas apply to derivations in which phrasal syntax mixes with clitic syntax. This is illustrated in the derivation in (21). As the first step the Link $v(*)$ is set merged in the general tree, as in (21a); in this we are simply following Chomsky (2004). The next step is also independent of the present work – namely the postulation of a Pair Merge couple $\langle V, v \rangle$ modelling v -V inheritance in (21b) (Epstein et al. 2016; Chomsky 2020). Adjunction of the clitic Cl_1 , like other adjunctions, is modelled by external Pair Merge, yielding the Pair Merge couple $\langle \text{Cl}_1 v^* \rangle$. The relation of two elements, here Cl_1 and V merged to the same Link is assumed to generate a Pair Merge sequence, as in (21c). Other clitics can be pair merged to the Link and added to the sequence, as in step (21d)=(15b).

- (21) a. $[v^* \quad [_{\text{VP}} V \dots]]$
 b. $[\langle V, v^* \rangle [_{\text{VP}} V \dots]]$
 c. $[\langle \langle \text{Cl}_1 v^* \rangle, \langle V, v^* \rangle \rangle [_{\text{VP}} V \dots]]$
 d. $[\langle \langle \text{Cl}_2 v^* \rangle, \langle \text{Cl}_1 v^* \rangle, \langle V, v^* \rangle \rangle [_{\text{VP}} V \dots]]$

Summing up, our proposal that clitics are structured by pair merge, rather than by set merge contrasts with classical approaches treating the head status of clitics as derived from a fundamentally phrasal syntax. In (15) and again in (21) we have addressed the question whether and how a treatment in terms of Pair Merge is feasible. Another key question of feasibility is how different syntaxes can converge on the same argument structure, i.e. the theta-assignment question, to which we return in section 3.3.

In this section, we also addressed the question whether proceeding our way yields any empirical advantages. We made three main empirical points. First, under the phrasal derivation of clitics, we do not really expect there to be Cl-V idioms. Either the Cl forms an idiom with V at first merge, but then we would hardly expect movement to be applicable (or always applicable) – or conversely the idiom is defined on derived structure, but wouldn’t the phrasal configuration at first merge already have determined theta-assignment? A second, more general point concerns the different syntactic order of phrasal and clitic arguments, which translates into different linear orders at EXT. Under the phrasal derivation of clitics, ordering is standardly accounted for as an effect of the division of labor between syntax and morphology. We envisage the contrast between Set Merge and Pair Merge within the syntax as replacing the more traditional contrast between syntactic phrase structure and

morphological clitics. In other words, the syntax itself accounts for the lack of isomorphisms between the two orders, and precedence asymmetries at EXT simply reflect syntactic facts. Third, sequences derive the incorporation properties of the clitic string by construction and without need for any further operation. In section 4.1-4.2, we further argue that the present approach is more restrictive when it comes to predicting possible placements of the clitic string, while under classical Set Merge and movement approaches a number of phenomena are predicted to occur (such as mirror orders) that are hardly ever observed. We devote section 5 to a general comparative discussion of the two models. Before that, however, we must complete our discussion of convergence at SEM.

3.3. Step C: nonuniformity of theta licensing

Let us go back to derivations involving XP arguments, for instance (22). Following merger of the head V with the internal argument, Appl is merged, supporting the benefactive argument; this elementary predicate structure is then merged with v^* . We follow Epstein et al. (2016), Chomsky (2020: 56) in modelling head raising by Pair Merge. Pair Merge $\langle V, v^* \rangle$ corresponds to inheritance from v^* to V; this in turn triggers Agree with the internal argument and accusative case licensing. Short movement of the internal argument (to EPP position, according to Chomsky (2015)) may be required, as also indicated.

- (22) a. Gianni porta il libro a Paolo
Gianni brings the book to Paolo
b. [$v^*P \langle \text{porta}, v^* \rangle$ [AppIP a Paolo [VP porta il libro]]]]

Summarizing the results of previous sections, mixed Pair Merge and set merge structures in (22) can be taken as the starting point for structures including both phrasal and clitic arguments as in (23). In (24) we simply adjust the structure in (22) to include not a single Pair Merge, but a Pair Merge sequence, including a clitic.

- (23) a. Gianni gli porta il libro
Gianni to.him brings the book
b. Gianni lo porta a Paolo
Gianni it brings to Paolo
- (24) a. [$v^*P \langle \langle \text{gli}, v^* \rangle \langle \text{porta}, v^* \rangle \rangle$ [VP porta il libro]]
b. [$v^*P \langle \langle \text{lo}, v^* \rangle \langle \text{porta}, v^* \rangle \rangle$ [AppIP a Paolo [VP porta]]]]

Now, comparison between (22) and (24) leads us to the conclusion that, in order to pursue a Pair Merge account of clitics, we must discard Uniformity as a principle governing the syntax/semantics interface. In other words, in the spirit of Culicover and Jackendoff (2005: 6), we must depart from the claim that “the same meaning always maps onto the same syntactic structure”. In the lexicalist model, where a certain set of theta-roles is imputed to each lexical predicate, the mapping to a certain syntactic structure is enforced by principles such as the Uniformity of Theta Assignment Hypothesis (UTAH) of Baker (1988). In more recent constructionist models (in the sense of Borer 2005), the build-up of argument structure corresponds to the build-up of the event. In practice, both are structured around functional projections reflecting underlying semantic categories (result, process, etc. cf. Ramchand 2008). If so, Uniformity holds by hypothesis.

The present proposal is incompatible with Uniformity in that phrasal argument structures are created by Set Merge and ordered by dominance, whereas clitic clusters are sequences of heads pair merged with v . This asymmetry raises two questions, namely whether there is independent evidence in other areas of grammar that Uniformity may not hold – and conversely how to explain the fact that

clitic and phrasal syntax (full pronouns) can converge on the same meaning.

As for the first question, it is a self-evident fact that the same semantics can have different externalisations, both crosslinguistically and within the same language. An example among many is passive (*lato sensu*, i.e. arbitrarization of the external argument), which in the Romance languages can have a periphrastic construal (*be* + perfect participle, as in English) or a construal by the *se* clitic. This kind of evidence can be circumvented by assuming that syntactic structures are underlyingly identical, though they are differently externalized by the lexicon and the morphology of the language. Uniformity therefore entails that a rich morphological component works to opacise syntax to some extent (on this point, see section 2). It further leads to highly abstract, tendentially universal functional structures, typified by cartography, which raise issues of learnability (or evolveability, Chomsky et al. 2019).

As for whether there is an alternative to Uniformity, we need look no further than the autonomy of syntax thesis (Adger 2018 for recent discussion), under which we expect “the grammar to be able to support semantic description” (Chomsky 1957), but we do not expect semantics to be pre-encoded in syntax: syntax restricts interpretation without determining it. This model “attributes the relative uniformity of the expression of argument structure to the principles that interpret syntactic structure semantically” (Wood and Marantz 2017) as opposed to imputing it to uniform syntactic structures.

Consider then the simple sentence in (22a) again containing a ditransitive verb with the structure in (22b), or (25) below. We may assume that sister of V is the configuration for theme interpretation of the argument and sister (Spec) of Appl is the configuration for goal interpretation of the argument.

(25) [_{v*P} Gianni [_{v* V*}[_{AppIP} [_{VP} porta il libro] a Paolo]

Phrasal structures are largely beyond the scope of the present article, however (26) is offered here as an illustration of how syntactic structures are interpreted at the semantics interface. Following a neo-Davidsonian approach (Parsons 1995, cf. Larson 2014), (25) receives the representation in (26), where *bring* denotes a predicate of events to which the arguments are related by relations of Agent (*Gianni*), Theme (*the book*), Goal (*Paolo*).

(26) $\exists e$ [porta(e) & Agent(e, Gianni) & Theme(e, il libro) & Goal(e, a Paolo)]

We contend that clitic arguments have an analogous interpretation, in (28), although they are structured in Pair Merge sequences as shown in (27b). In this respect, recall that Chomsky (2020) envisages a CONJ (conjunction) operator as heading the sequences, whose members are interpreted as conjoined. As it turns out, therefore, a conjunction semantics for argument structure of the type independently proposed for phrasal syntax follows straightforwardly from Pair Merge sequences of clitics.

(27) a. Gianni glie lo porta
 Gianni to.him= it= brings
 b. [_{v*P} << [_{AppI(Dat)} gli], v* >, < [_φ lo], v*>, <V, v*>> [_{VP} porta]]

(28) $\exists e$ [porta(e) & Agent(e, 3sg) & Theme(e, lo) & Goal(e, glie)]

The mapping of (25) into (26) and the mapping of (27) into (28) rely on different mechanisms. In the former, as we saw, theta relations are configurationally defined, e.g. Theme is a relation established between a V and its sister. In the latter, recall that clitics are labelled by their intrinsic properties; labels include: N/D/ ϕ for direct case clitics and Appl for oblique clitics, with different flavors, Dat(ive), Gen(itive) etc.¹³ Clitic morphology then conveys information as to whether clitics are interpreted as direct arguments or obliques, whereas hierarchical configurations play no role.

¹³ The various flavours, e.g. Dati(ive) and Gen(itive) are disambiguated once again by lexical content, as well as by context, e.g. Goal or benefactive (selected Dat vs. non selected Dat).

Taking the suggestion of Manzini (2022), we assume that the saturation of the open slots of the predicate takes place in each of the Pair Merge links by the relation established between the clitic (the referential, argumental content) and the v (the predicative open expression). As Higginbotham (1985) proposes for the saturation of the R role in DPs, as long as a certain role of V is not saturated, it gets passed on to v , for instance by the Pair Merge operation that insures inheritance and perhaps to higher heads as long as the phasal domain is open (see the discussion in section 4).¹⁴

Granting these assumptions, we can conclude that though phrasal arguments and clitics may have different syntactic structures, they converge on expressing the same argument structures at the syntax/semantics interface.

4. Clitic placement

In the previous sections, we argued that Pair Merge depends on Links and Links coincide with the phase head v . In this section, we refine the latter statement by arguing that clitic group positions at first merge can coincide with either phase head, namely v or C-I. If head of phase positions are the only positions where heads or head sequences can surface, then the issue of placement is considerably reduced (see also Roberts 2010). In the light of this hypothesis, this section aims to address three main questions regarding clitic placement:

- The locus where object clitics are first merged: v , or C-I.
- The mechanism whereby clitics may occur either before or after their host (i.e. proclitically vs enclitically)
- The mechanism whereby clitics that are merged in separate phase heads—e.g. object and subject clitics in Romance—do not necessarily form a cluster.

Anticipating the discussion to follow, evidence from the above three empirical domains challenges the view that clitics in languages such as French and Italian are first merged in v/V and successively remerged in I along with the inflected verb. In fact, once uniformity of theta assignment is discarded, no principle compels us to assume that clitics are necessarily pair merged in v . Recall that a) clitic strings are not affected by event structure (e.g. no contrast between goal vs. benefactive dative) and b) clitic placement (e.g. proclitic vs enclitic placement) is instead affected by C/I-related features such as mood and modality, polarity, force, focus, etc. (more on this in section 4.2). For these reasons, we ultimately believe that an account in which (Romance) clitics can be first merged in I or C (as in traditional base generation accounts of clitics) is better suited to explain clitic syntax from both empirical and theoretical standpoints.

4.1. The merging point of clitics: crosslinguistic variation

In the most-studied Romance languages such as French, Italian, Spanish, etc. clitics always occur close/attached to verbal heads. However, if we approach Romance from a microcomparative point of view, it turns out that, first, clitics are not necessarily attached to the verb and, second, in any given language one or more phase heads are capable of hosting clitics. To illustrate these points, we first focus on languages exhibiting so-called *interpolation*, i.e. the occurrence of XPs of various kinds between the clitics and the verbal head. Notice that the term interpolation is a symptom of our biased view on clitics, which we expect to be always attached (or close) to verbs as they are in major modern languages such as French, Italian or Spanish. However, if we turn our attention to less-known

¹⁴ We independently know that syntactic modification structures can satisfy theta-relations, for instance in Adj-Noun examples like *the Roman conquest of Britain* (cf. *the conquest of Britain by Rome*). Here again under Uniformity, structural solutions may be worked out where the Adj is derived from an underlying DP. Alternatively however we may embrace the conclusion that modification/adjunction (hence Pair Merge) structures can satisfy theta-relations at first merge (like Set Merge structures). The topic deserves further research in our view.

Romance vernaculars, including medieval languages, or to other linguistic groups and families (Pescarini, to appear) we find out that no privileged relation holds between clitics and verbs.

Evidence of clitics merged in I comes from Italo-Romance and western Ibero-Romance dialects that show interpolation of aspectual adverbs that are merged at the I/v boundary (Pollock 1989). The occurrence of clitics to the left of this class of adverbs, but to the right of complementizers, negative markers and subject clitics (as shown in (29a-c), respectively) indicates that clitics can be merged to a I head even if the inflected verb does not merge to the same head.

- (29) a. O livro que **lhe** [ainda] não entreguei (Port. dialect)¹⁵
 The book that to.him= yet not handle
 ‘The book that I did not give him yet’
- b. Un **mi** [cchù] parra (Cosentino)¹⁶
 not me= any.more speaks
 ‘He does not speak to me any more.’
- c. el **me** [sempre] dizi (Triestino)¹⁷
 he= to.me= always says
 ‘He always speaks to me.’

Evidence of clitics in C comes from medieval Romance languages that display Germanic-like inversion in main clauses (i.e. AUX > Subject > Participle; for an overview, see Pescarini 2021: 183–210 and references therein). In contexts where inversion is ruled out (especially, but not exclusively in embedded clauses), elements such as negation, preverbal subjects, IP-scrambled XPs¹⁸ can occur between clitics (in C) and the inflected verb that remains in I, see (30).

- (30) a. [c que **le** [I dios dio. (o.Sp.)¹⁹
 that to.him= god gave
 ‘... that God gave him.’
- b. ... para **lo** mejor conplir que **lo** ella non mando (o.Sp.)²⁰
 in.order.to it= better accomplish than it= she not ordered
 ‘... in order to accomplish it better than she ordered (it)’

Lastly, dialects in which clitics never climb to the inflected verb offer evidence of clitics that are merged at the edge of v. In Borgomanerese, for instance, object clitics are not merged with the inflected verb, which climbs to I as in the other Romance languages. Clitics remain low as witnessed by the interpolation of aspectual vP adverbs in (31) (Tortora 2002; 2015). vP-internal arguments and adjuncts in Borgomanerese do not interpolate between the verb and enclitics.

- (31) a. I porti mi-**lla**. (Borgomanero; Pied.)
 I= bring not=it
 ‘I’m not bringing it.’
- b. I vangumma già-**nni** da dü agni.
 We= see already=us of two years
 ‘We’ve already been seeing each other for two years.’
- c. I vônghi piö-**llu**.

¹⁵ Barbosa (1996).

¹⁶ Ledgeway and Lombardi (2005)

¹⁷ Benincà (1997: 129).

¹⁸ On IP-scrambling, see Martins 2002. Notice that Martins (e.g. 2019) argues that the verb is higher than in modern Portuguese, although it does not reach C.

¹⁹ *Castigos e documentos de Sancho*; from Rivero (1997).

²⁰ *Corbacho*, from Rivero (1986).

I= see any.more=him
 ‘I don’t see him any more.’

The first row of Table 1 summarises the data illustrated in (29)-(31), showing that clitics can be merged with any phase head, including C and I (the latter via inheritance). By the same token, it seems reasonable to extend the same conclusion reached for languages with so-called interpolation to the other languages – those summarised in the second row of Table 1 – where clitics and verbs are always adjacent.

	in C	in I	in ν
Clitics and V are not adjacent → “interpolation”	(29) old Sp, old Port, western Ib-Rom dialects (Martins 1994ff)	(30) Cosentino, Triestino (Ledgeway & Lombardi 2005)	(31) East. Pied. dialects (Borgomanerese) (Tortora 2015; Manzini & Savoia 2005)
Clitics and V are always adjacent → “adverbial clitics”	(32) old It, old Fr., old Cat. (Benincà 1995)	Most present-day Romance languages (Kayne 1975; etc.)	(33) Piedmontese dialects (Parry 1993; Manzini & Savoia 2005)

Table 1 – typology of clitic systems according to two parameters: interpolation and placement in the structure of the clause.

The second row of Table 1 is easily illustrated. Languages with *adverbial* clitics in C are medieval Romance languages which display verb-subject inversion and never exhibit interpolation phenomena in contexts of V-to-C movement. When the verb is inverted (in C or at the I/C border), clitics can either precede or follow it, depending on factors such as polarity or focus-fronting, but they can never be separated from the inflected verb. Proclisis is normally found in questions, where object clitics and V precede inverted subjects, which at this chronological stage are not clitics, as in (32).

(32) Con che **ti** dare’ io bere?²¹ (o.It.)
 With what to.you= would.give I drink
 ‘How would I give you something to drink?’

Modern Romance languages like Italian or French, illustrated in the text, are characterized by the placement of the verb and of the clitic group in I. In (33) we provide an illustration of the third attested typology, where the ν attachment of clitics is signalled by the fact that they form a cluster with the perfect participle, not with the auxiliary in I.

(33) I an rangiò-**la**. (Cairo Montenotte, Parry 2005)
 They= have fixed=it.F
 ‘They fixed it.’

The generalization that the verb and/or the clitic group can surface in a limited set of positions (see also Roberts 2010), namely all (and only) the phase heads (ν -V, or I, or C), is actually predicted under the present approach to clitics, if only C-I and ν -V are (sentential) phase heads and if not every category can serve as Link in a sequence but only phase heads can (cf. Chomsky 2020).²²

²¹ Anon., *Novellino*.

²² The view of phase heads adopted here is the standard one (Chomsky 2001). As a reviewer reminds us, this is challenged in the literature, for instance in Harwood (2013). Various issues arise in this connection. Specifically, a view originating with Uriagereka (1995) is that what really matters in clitic placement is the interface with discourse at the edge of C and

This prediction is further confirmed by data from the DP domain, where clitics can occur as long as they pair merge with a phase head. Even remaining within the Romance languages, there are robust examples of cliticization in DPs with kinship terms, which turn up with clitic possessors in many Center and South Italian varieties (Manzini and Savoia 2005, III: 660-684), cf. (34). The kinship term may be Determiner-less, evoking raising of N to D (Longobardi 1994). However structures D-N-enclitic are also found, especially in the plural, where the kinship terms may be quite high in the structure, but not quite high as D, as in (34b).

- (34) a. *fiλλə-mə/-tə* (Guardiaregia, Molise)
 child-my/-your
 ‘my/your child’
 b. *rə fiλλə-mə/-tə*
 the child-my/-your
 ‘my/your children’

Based on the evidence in (34), we may conclude that clitics are pair merged with the Link *n*, also the phase head (Chomsky 2020). There they are preceded by N in the D position of slightly lower. In any event the predictions of the analysis are verified for DPs as well.²³

Now, if we look at Table 1, merger to *v* is not even the majority option. We therefore revise our original proposal: clitics are *not* (necessarily) first merged with *v*. This happens in languages such as Borgomanerese in (31), in which clitics never climb.²⁴ As for languages in which clitics are found in I or C (regardless of the position of finite verbs), we contend that clitics are pair merged with I/C and do not climb from one phase to another.

Because of obvious limitations of space, we cannot pursue all the clitic typologies listed in Table 1. We however revise our discussion as concerns the modern Romance languages, which are the empirical focus of the present discussion. We do so by first considering further valuable evidence supporting our approach, brought by enclisis/proclisis alternations, namely enclisis in the imperative (section 4.2) and enclisis of the subject clitic in French interrogatives (sections 4.3–4).

4.2. The problem of enclisis

The languages in which clitics are always adjacent to verbs still display partial independence of the verb and of the (object) clitic group in proclisis/enclisis alternations. The Italian and French declarative examples that we have used so far all have proclisis, cf. (35a). However, the Romance languages present various patterns of enclisis. Modern Italian, for instance, has enclisis of object clitics in imperatives and non-finite clauses, as in (35b-c). French also exhibits enclisis of object clitics in imperatives, and in addition enclisis of subjects clitics in main interrogatives (subject clitics

v, corresponding, more or less, to Rizzi’s (1997) and Belletti’s (2008) peripheries. Thus one may adopt a flexible view of phases, and surmise that discourse conditions (that are crucial in determining the choice between clitics and XPs in Romance), justify why we assume only C and *v* as phases. For present purposes, the strict reliance on Chomsky’s model makes it simpler to adhere to his view of phases as well. In Chomsky’s vision, the cartographic idea that discourse interpretation triggers movement to the edges is simply reversed: movement to the edge receive a discourse interpretation (on cartography see Chomsky et al. 2019). On this point, the views of the authors of this article slightly diverge.

²³ We added this evidence at the prompting of a reviewer.

²⁴ Merger of clitics in *v* may also take place with idiomatic clitics such as those illustrated in (7). In this respect, it is worth mentioning that in French idiomatic clitics do not climb, see the verb *en vouloir* (à) ‘to be mad (at)’ in (i), also blocking the climbing of argument clitics, cf. *lui* in (ii) (Miller and Sag 1997: 610).

(i)	Tout	leur	(*en)	fait	en	vouloir	à	Paul.	(Fr.)
	everything	3PL.DAT=	en=	make.3SG	en=	want.INF	to	Paul	
(ii)	Tout	leur	fait	lui	en	vouloir.			
	Everything	3PL.DAT=	make.3SG	3SG.DAT=	en=	want.INF			

‘Everything makes them angry at him’

will be thoroughly analysed in section 4.3).

- (35) a. **Me/ce lo** porta. (It.)
 to.me/there it= he.brings
 ‘He brings it there/to me’
 b. **Porta-melo!/ Porta-ce-lo!**
 Bring=me=it/ bring=there=it
 ‘Bring it there/to me!’
 c. **Cerca di portar-me-lo/-ce-lo.**
 Try to bring=to.me=it/there=it
 ‘Try to bring it to me/there.’

A considerable tradition of studies starting with Kayne (1991) imputes enclisis/proclisis alternations to head movement. More specifically, Kayne’s (1994) antisymmetric model excludes right adjunction and multiple adjunction. As a consequence, proclitics cannot be merged with the functional head hosting the verb; rather, clitics are merged with a silent head—or to a series of silent heads—that precedes the one hosting the verb. Enclisis results when the verbal head moves further, incorporating the clitics or skipping the head to which clitics are attached (for other attempts to derive enclisis circumventing the Head Movement Constraint, see Lema and Rivero 1991). Our account of enclisis, which will be presented in Section 4.4, follows the same intuition, but we contend that Pair Merge offers a more elegant solution. To illustrate our point, some general remarks on enclisis are in order.

The conditions ruling enclisis/proclisis alternations are not uniform across Romance and across syntactic contexts. The triggers of enclisis vary crosslinguistically: they include polarity, mood, information structure, finiteness, etc. Enclisis in imperatives and infinitives – see (35b) vs (35c) do not result from the same mechanism; in fact, languages such as French display enclisis in imperatives, but proclisis in infinitives. Analogously, it is highly implausible that one and the same mechanism may account for cases of enclisis of object clitics to past participles in Piedmontese varieties in (33) and enclisis to finite verbs in present-day western Ibero-Romance or in medieval Romance (see (36)), where enclisis is compatible with topicalized XPs and barred by focus-fronted XPs (so-called Tobler-Mussafia law).

- (36) a. [_{Top} A voi] [_{Top} le mie poche parole ch’ avete intese]_i
 to you the my few words that you.have heard
 ho =**lle**_i dette con grande fede²⁵ (o.It.)
 I.have =them said with great faith
 ‘The few words that you heard from me I pronounced with great faith.’
 b. e [_{Top} a los otros]_i acomendo **-los**_i a dios²⁶ (o.Sp.)
 and to the others commended =them to god
 ‘and he commended the others to god.’

If we look beyond the specific conditions ruling enclisis, it is worth noting that none of them is computed in the *v* phase. In particular, enclisis correlates with properties of I/C, while in no language enclitic/proclitic placement is affected by the inner aspect or the argument structure of verbs. Enclisis/proclisis alternations therefore suggest that clitics are not uniformly merged to *v* even in languages such as Italian or French in which object clitics are always adverbial. If clitics were merged in *v*, nothing in the higher phase would be allowed to tamper with a syntactic object built via Set Merge in the *v* phase.

Furthermore, Set Merge and head movement cannot predict elementary generalisations on the make-up of proclitic vs enclitic strings, for instance that the object clitic group does not normally

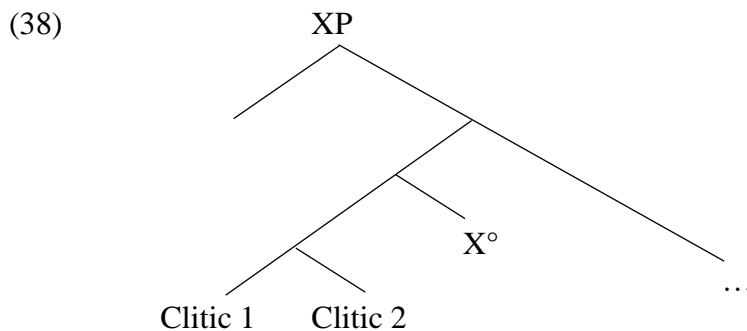
²⁵ Matteo de’ Libri, *Dicerie volgari*.

²⁶ *Estoria de España*, II.2v.

mirror, specifically under proclisis/enclisis alternations. Indeed, head(-projection) movement (rollup movement etc.) is expected to yield a very high incidence of mirror patterns of the same kind one finds in other clausal domains (see Cinque 1999). On the contrary, when two or more clitics co-occur, the order in proclisis and in enclisis do not mirror each other, see (37), as one would expect under a head incorporation analysis in which the verb incorporates the lowest clitic first and then the highest.

- (37) a. me lo va a prendere. (It.)
to.me= it= goes to fetch
‘S/he goes fetch it for me.’
b. va-mme-lo a prendere.
go=to.me=it to fetch
‘Go fetch it for me.’

One way to circumvent this objection is by assuming, as Kayne (1994) does, that enclitics do not mirror because two clitics are often merged to a single head (see also Terzi 1999, from which the following tree is taken with minor modifications). Verbs are then allowed to skip the complex head X in (38) without violating the Head Movement Constraint.



By assuming (38), however, we implicitly assume that, in languages such as French or Italian, proclitics are never incorporated to the inflected verb, a solution that raises more questions than it can answer. First, what is the nature of the head hosting clitics? Second, if clitics and verbs are not merged together, why cannot they be separated in languages such as Italian, Romanian, or Spanish? We know that the position of the inflected verb in the Romance languages is subject to subtle variation, see (39) (from Ledgeway & Cruschina 2016), but proclitics almost always occur immediately before the inflected verb. If adjacency were a coincidence, as (38) entails, one would expect adverbs to occur between proclitics and verbs more frequently than they actually do.

- (39) a. Elle connaît *peut-être* (*connaît) *déjà* (*connaît) la recette (Fr.)
b. Lei (*conosce) *forse* conosce *già* ?conosce la ricetta (It.)
c. Ea (*știe) *poate* ?știe *deja* știe rețeta (Ro.)
d. Ella (*conoce) *tal vez* ?conoce *ya* conoce la receta (Sp.)
she knows perhaps knows already knows the recipe(=the)
‘Perhaps she already knows the recipe.’

By the same token, one would expect proclitics to be separated from lexical verbs more readily than from auxiliaries, which cross-linguistically tend to target higher I-positions (see, e.g. Pollock 1989). Since these predictions are not borne out, we can safely conclude that in the majority of present-day Romance languages object clitics are incorporated into finite verbs. Hence, clitics have a hybrid behavior: they must be somehow incorporated to the verb, but at the same time they enjoy a higher degree of freedom than bona fide affixes, cf. section 1.

In our view, the hybrid behavior of clitics; yielding syntactic configurations such as (38), is better captured by assuming a Pair Merge structure whereby clitic pronouns are first merged in I.

The few cases or mirror orders in enclisis have attracted relatively some interest in the literature (see also Ordóñez 2002). Yet thorough surveys of their occurrence, available for Romance (Manzini & Savoia 2017) show that considerable constraints are placed on them. Specifically, mirroring sequences, such as well known French (37) only involve accusative clitics and some (allomorph of the) Appl clitic. Sequences of two Appl (oblique clitics) never mirror, e.g. in French (41).²⁷ What is more, mirror is hardly ever obligatory, and more often than not, alternates with preservation of the proclitic order, cf. (40c) for French (Laenzlinger 1993).

- (40) a. Il **me** **le** donne (Fr.)
 he= to.me= it= give.3SG
 ‘He gives it to me.’
 b. Donne-**le-moi** !
 give.IMP =it=to.me
 ‘Give it to me!’
 c. Donne-**me-le**!
 give.IMP=to.me=it
 ‘Give it to me!’
- (41) a. Il **lui** **en** donne (Fr.)
 he= to.him= of.it= gives
 ‘He gives some of it to him’
 b. Donne-**lui-en**!/*Donne-**en-lui**!
 give=him=of.it/give=of.it=him
 ‘Give him some of it!’

This is not to say that movement theories of clitics could not be adjusted to cover the relevant subregularities.²⁸ The argument is that some general expectations brought about by the model are not realized.

4.3. Subject clitics

A further prediction made by the model of clitic placement based on Set Merge and head movement is that there is a uniform syntax for all classes of clitics. This is particularly relevant when one considers subject clitics. Subject clitics are always adverbial (only negation and object clitics can occur between the subject clitic and the verb), and differ quite systematically from object clitics with respect to placement. Subject clitics occur in enclisis in contexts of V in C, like main interrogatives, though object clitics are proclitic in the same context (as expected with a finite verb).

- (42) a. Il le lui donne. (Fr.)
 he= it= to.him/her=give.3SG
 ‘He gives it to him/her.’
 b. Le lui donne-**t-il**?
 it= to.him/her= give.3SG-*t*-he

²⁷ This generalisation is not evident in languages with a more reduced clitic repertory than French, not including Loc and Part enclitics. This is the case of Greek, originally investigated by Terzi (1999) for proclisis/enclisis reversals in order.

²⁸ Many authors have focused on the different morphology of the 1/2p Dat clitic in (40b) vs. (40c), proposing that the former is in fact a weak pronoun (Laenzlinger 1993). Manzini & Savoia (2017), who are explicitly critical of the notion of weak pronoun, produce some evidence from Corsican varieties that mirror effects may involve clitics being inserted in different domains of the sentence (in present terms, merged with different phase heads).

‘Does he give it to him/her?’

The comparison between subject and object clitics in sentences like (42) shows that subject and object clitics do not form a single sequence of pair merged elements. Subject clitics are probably merged with a different phase head in (42b) (as a matter of fact, the ordering of object clitics is complex and subject to language-specific irregularities, though subject proclitics always precede object proclitics).

Subject clitics are not connected to the v phase, but rather to the I phase. The reason for this is that they are means for the satisfaction of the EPP in languages like North Italian varieties which have this constraint at the C-I phase (thus, subject clitics can be expletive). We therefore assume in (43b) that subject clitics in declarative clauses are pair merged with Link I. This presupposes that I acquires the phase head property by inheritance from C (Chomsky 2008), see also §4.4.²⁹

- (43) a. I an rangiò-la. (Cairo Montenotte, Parry 2005)
 they= have fixed=it.F
 ‘They fixed it.’
 b. [IP << i, I > < an, I >> [_{v*P} << la, v* >, < rangiò, v* >>] [_{VP} rangiò

The subject clitic can close any open argument slot by predication (with $v^{(*)}P$) and/or satisfy the EPP (in this respect, Italo- and Gallo-Romance varieties exhibit variation; see Pescarini 2022).³⁰ This analysis once again separates clitic from phrasal derivations. Specifically, in standardised accounts of phrasal syntax, XP arguments are first merged in thematic position and eventually undergo movement to satisfy the EPP (in languages where it holds). As for subject clitics, we assume that they satisfy the EPP at first merge and can receive an argument slot via predication. Crucially, if all arguments slots have been filled, the subject clitic is still wellformed, namely it is what we call an expletive, for instance in French (44).

- (44) Il a été mis fin à ce conflit
 it has been put end to this conflict
 ‘This conflict has been put an end to’

4.4. Understanding proclisis/enclisis alternations

We now focus on interrogative inversion of the subject clitic. In sentences like (42b), which we have used to illustrate the relative independence of subject and object clitics, both are adverbial (strictly adjacent to the verb). Furthermore, we note that in proclisis no lexical material can be interpolated between subject clitics and object clitics (with the sole exception of the negation which is itself a clitic). In classical cliticisation theories, incorporation of the subject clitic into the verb depends on verb movement to C, where the verb also takes along object clitics previously incorporated into it.

Now, so far we have made explicit recourse to *external* Pair Merge to model clitics. We have also assumed that inheritance pairs such as $\langle V, v^{(*)} \rangle$ modelled again by Pair Merge. If following Chomsky (2015), Epstein, Kitahara & Seely (2016) we explicitly endorse the derivation of inheritance

²⁹ A reviewer enquires as to how the subject clitic *il*, which is a member of sequence $\langle il, I \rangle$, satisfy the EPP if "the internal structure of a sequence is inaccessible to operations defined on Set merge structures". If the EPP is a property of the (C-)I phase head, we can assume that it is satisfied at Pair Merge. This whole issue must be viewed in the perspective suggested by Chomsky (2015: 9) that the EPP is a byproduct of the labelling algorithm. In this perspective, it is not unnatural to suppose that Pair Merge $\langle SCI, I \rangle$ allows I to project a label, which is the essence of the EPP.

³⁰ This assumption runs counter the canonical view that there is a fundamental asymmetry between French and Northern Italian clitics – and that this difference corresponds to two different values of the null subject parameter. The traditional reasons are reviewed in the literature quoted in fn 1 (Rizzi 1986). Manzini (to appear) has a critical discussion of this evidence. Discussing this issue here would take us too far afield; the redefinition of the EPP by Chomsky (2015), cf. fn. 29, hence the elimination of *pro*, should also be taken into account.

pairs by *internal* Pair Merge, we have an elementary model for syntactic head movement as well. To obtain verb movement and subject clitic inversion in (39b), we keep following this model and assuming that the structure of reference is as in (45), cf. Epstein et al. (2016: 4). The derivational steps listed in (46) provide a useful sketch of how set-merge and pair-merge are interwoven in the derivation including now internal Pair Merge.

- (45) [EA [<V, v*> [V IA]]]]
 (46) (i) external Set Merge of V and Internal Argument
 (ii) external Set Merge of v*
 (iii) internal Pair Merge forms <V, v*>
 (iv) external Set Merge of External Argument

Let us begin by considering French (42a) reproduced below as (47a). Suppose we execute V-to-I movement by internal Pair Merge of the <V, v*> sequence with I. We obtain the basic sentential skeleton in (47b).

- (47) a. Il le lui donne.
 he it to.him give.3SG
 ‘He gives it to him.’
 b. [IP <<donne, v*>, I>> [VP <donne, v*> [VP]]]

Following the general schema laid out in Table 1, clitics in modern Romance languages including French are pair merged with I. (48) represents the execution of this idea for examples like (47a). We assume that everything goes through in the building of the object clitic string as detailed in section 3 except that the locus of external merge of clitics is I. As for the subject clitic, Pair Merge with I is as detailed in section 4.3.

- (48) [IP <<il, I>, <le, I>, <lui, I>, <<donne, v*>, I>> [VP ..

To better understand interrogative inversion, we must take a step back to the issue of enclisis as seen in imperatives (section 4.2) and distinguish at least two kinds of movement to C: (i) V-to-C in imperatives, yielding enclisis of object clitics, see (35) below and section 4.2; (ii) V-to-C in questions, yielding enclisis of subject clitics (but proclisis of object clitics, see (42b)).

Imperatives such as (35b), repeated in (49) for the sake of convenience are essentially subjectless. As discussed by Portner, Pak & Zanuttini (2019), the inflection of the imperative does not agree with the subject (the EPP argument) but rather with an addressee argument (which Portner, Pak & Zanuttini represent as part of the left periphery; on speaker/hearer projections see Giorgi 2009 a.o.). Second, *v* does not merge with I (Rivero 1994; Roberts 2010: ch. 5) thus crossing object clitics, which remain pair merged in I, see (50).

- (49) Porta-me-lo! (It.)
 bring=me=it
 ‘Bring it to me!’

- (50) [<<porta, v*>, C_{JUSS}> [[IP <<me, I>, <lo, I>> [v*P <porta, v*> [VP]]]

Note that, as anticipated in section 4.1, we have now provided examples of derivations (in a modern Romance language) where clitics are not merged with the *v* Link, but directly with the I phase head/Link. Though this partially replaces the conclusions of section 3, it is still based on the rejection of Uniformity in that section, and the discussion of how convergence can be insured at the SEM interface. We assume that in these respects the merger structure of (50) is an extension of that already

reviewed. As long as the v phase is open (as it is, only the complement of v having been shipped to the interface), saturation of open slots of the predicate v^*P (via I) remains possible (and obligated as soon as argument material is merged in the form of clitics).

Interrogatives follow a different derivation, as witnessed by the absence of enclisis of object clitics and the position of DP subjects. Clitic subjects are customarily assumed to be merged in I also in inverted structures, but in fact this assumption is not fully justified. Consider that interrogatives prevent phrasal DP subjects from being licensed in I (interrogatives trigger so-called stylistic inversion, i.e. they require subjects to occur postverbally, or of course they can be topicalised). If I cannot license DP subjects, why should it license subject clitics?

A possible solution to the puzzle of interrogative inversion is to suppose, as in (51a), that subject clitics are pair merged in C , when C has interrogative force. Then inversion of I (along with its pair-merged clitics), takes place as shown in (51b) via internal Pair Merge with C .

- (51) a. [_{CP} <subject clitic, C_{INT}> [IP <object clitics, I> [_{VP} ...]]]
 b. [_{CP} <<object clitics, I>, C_{INT}> <subject clitic, C_{INT}>> [IP <object clitics, I> [_{VP} ...]]]

This yields the actual order of (42b), repeated below as (52a), via the structure in (52b).³¹

- (52) a. Le lui donne-t-il?
 it= to.him/her= give.3SG-*t*-he
 ‘Does he give it to him/her?’
 b. [_{CP} <<le, lui, donne, v*, I>, C_{INT}> <il, C_{INT}>> [IP <<le, lui, donne, v*>, I> [_{VP} ...]]]

As already mentioned, providing Pair Merge derivations for all the various clitic typologies illustrated in Table 1 is beyond the scope of the present article. Nevertheless, all of the general mechanisms are now in place for the execution of the research programme that Table 1 configures. Crucially, these include mechanisms for merging clitics not only in different configurations with respect to their notional phrasal counterparts, but also ‘at a distance’, namely with any phase head available in the Work Space.

5. General discussion and conclusions

In conclusion, let us briefly review the complexities that may be imputed to the present proposal.³² First, Pair Merge is adopted, coexisting with Set Merge. Set Merge and Pair Merge are needed to model the distinction between complementation and adjunction respectively. There are two main theoretical solutions to capturing adjunction. The first one is the LCA/cartographic solution: adjunction is eradicated and adjunct configurations are reduced to head, Spec configurations. This has a cost – namely (i) having to postulate as many heads as there are adjunct Specs; (ii) having to postulate movements for the sole scope of deriving certain word order asymmetries, whence remnant, roll-up, and other semantically vacuous movements. The second solution is to postulate two Merge rules (Chomsky 2004). Set Merge is the familiar rule forming sets labelled by a head. A more complex rule, Pair Merge, forms ordered pairs. Apart from the richness introduced by the second, more complex Merge rule, a possible element of cost in this theory is represented by the need of a SIMPL operation (Chomsky 2004) at Transfer, which effectively reduces Pair Merge to Set Merge structures for various purpose. Crucially, however, it seems to us that the hypothesis represented by Pair Merge, and by Pair merge sequences, is empirically justified. Languages allow sequences that are virtually unbounded and that form a syntactic object, whose inner structure does not reflect dominance.

³¹ In (52b) we use an obvious abbreviation for long Pair Merge sequences, displaying them as a simple sequence of elements with a final Link, e.g. <le, lui, donne, v*, I>.

³² These are actually listed by the reviewers, to whom we are directly responding.

The second innovation introduced here is a way to build argument structure, which also co-exists with the classical one. As part of this, argument structure is severed from the lexical core of the verb, since C and I can also anchor clitic strings. By introducing an alternative way to saturate predicates, we can dispense with clitic movement from argument positions and with *pro* arguments doubling clitics. In this sense, our model provides a simpler what-you-see-is-what-you-get analysis of clitic sequences. Admitting that there are alternative ways to saturate predicates challenges the received view of argument structure, governed by Uniformity, but is nevertheless in compliance with Duality of Semantics (Chomsky 2021).³³

We have been quite explicit that syntax is not isomorphic to semantics. Like the coexistence of Pair Merge and Set Merge, this is independent of the present proposal, corresponding to a well-worn debate between the Uniformity and the autonomy of syntax theses (see especially section 3). Under non-Uniformity views, there may be alternative syntactic ways to determine the same semantics. Traditional analyses of clitics assume that we need to pass through a canonical argument structure in order to derive the interpretive equivalence of clitic and phrasal pronouns. However, the semantics of clitics and that of corresponding XPs is not necessarily uniform. Clitics have an anti-focussed interpretation. They refer both to definite/specific and to indefinite/non-specific elements (a property that *pro* does not exhibit, *pace* Sportiche 1996). They are involved in idioms. They may have an aspectual or discourse marker interpretation (e.g. the clitic *si/se* of inchoatives, certain subject clitics). They give rise to animacy-driven restrictions such as the Person Case Constraint, in the absence of such constraints in the phrasal domain.

Scholars have been hypothesizing for decades that differences between clitics and XPs, not only with respect to syntactic placement, but also with respect to their interpretation, result from the clitics' having a deficient structure, as proposed by Cardinaletti & Starke (1999) among others. Deficiency, however, proves to be an elusive concept since, when clitic heads exhibit clues of internal layering, we find that their inner structure is as rich as (or even richer than) the structure of XPs (Manzini 2014; Pescarini 2021). So, instead of modelling the internal syntax of clitics, we have argued that the differences between clitics and XPs results from how they are anchored to the clausal spine. We have therefore bargained uniformity to get rid of deficiency, which in our opinion is a wrong perspective on clitics.

In a nutshell, in this article we tried to assess whether a Pair Merge approach to Romance clitics is feasible and whether it holds any empirical advantage. If clitic, verb clusters are built as pair merged sequences, the incorporation property displayed by clitics (with respect to one another and with respect to the verb) follows by construction, as such sequences are point-like from the point of view of phrasal syntax. This view of cliticization seems to run into immediate problems once we move away from object clitics in finite declarative sentences in Italian or French and tackle slightly less familiar linguistic systems, that allow interpolation, enclisis (inversion), and allow clitic sequences to split (object vs. subject clitics). We argued that these phenomena receive a principled explanation under the assumption that clitics are pair merged with different phase heads: as a consequence, all clitics associated with a given phase head behave as a single syntactic object, but clitics merged with different phase heads pattern differently. Specifically, the fact that subject clitics are essentially independent of object clitics need not descend from some special properties of subject clitics. They may simply be pair merged with a different phase head than object clitics.

Competing interests

The author(s) has/have no competing interests to declare.

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³³ A further problem raised by the reviewer is that not all clitics seem to be introduced by Pair Merge. In this instance, the question may be terminological. What the descriptive literature labels 'clitic' may correspond to different objects crosslinguistically and across chronological stages (Zwicky 1994: xiii). We therefore have no reason not to believe that certain 'clitics' in certain languages can be better analyzed as set merged pronouns with a deficient prosodic status.

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