Psychological evidence on the status of Romance clitics

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Romance clitics are remarkably similar to elements which are assumed to have a different status according to the linguistic analysis: determiners and affixes. Because of this, it is unsurprising that the status of clitics has been one of the more debated topics in the field over the past decades. This paper will take a psycholinguistic approach in order to broaden the domain of investigation. Though Psycholinguistics cannot 'go into' the linguistic debate, it may still provide additional data that may 'go with' linguistic data. Here, two issues concerning Italian pronominal clitics are addressed: (a) the 'shared representation hypothesis', according to which third person object clitics and definite articles share their lexical representation; (b) the psychological processing of clitics with respect to the classes of affixes and free-standing grammatical morphemes. On the basis of experimental findings, it will be argued against the view that third person object clitics and determiners are retrieved from the same lexical entry in Italian. Moreover, some psycholinguistic evidence is provided suggesting that Italian enclitics may be assimilated to affixes, whereas Italian proclitics may be assimilated to free-standing morphemes. Results are in line with the well known asymmetries between the linguistic behavior of enclitics and proclitics.

1. Introduction

The fundamental reason for the interest in Romance pronominal clitics in Linguistics has to do with the fact that clitics are difficult to classify. Not only is there no consensus about the boundaries between clitics and 'similar' elements, but it is also a matter of debate whether these boundaries exist at all (Zwicky & Pullum 1983; Zwicky 1985).

Two kinds of elements, in particular, can be considered 'similar' to Romance clitics: affixes and definite articles.

Affixes, just as pronominal clitics in Romance, cannot stand on their own and are highly selective with respect to their base. As for definite articles, they display, for etymological reasons, a remarkable similarity with third person accusative clitics in all of the Romance languages.

As is immediately obvious, the first resemblance involves structural and distributional aspects of the whole clitic class, whereas the second primarily involves the phonological form of a sub-set of clitics.

Linguistic theory has been focusing on the one or the other similarity depending on the specific theoretical framework. Specifically, proponents of syntactic analyses have focused on the similarity between clitics and determiners, whereas proponents of lexicalist analyses have focused on the similarity between clitics and affixes. The point is whether (a) the resemblance between clitics and affixes is so strong as to undermine the idea of clitics as a class (e.g., Monachesi 1999; Miller & Monachesi 2003), and/or whether (b) the resemblance between clitics and articles is so strong as to justify the claim that both clitics and articles are retrieved from the same underlying lexical entry (Elbourne 2001).[1]

This paper will take a psycholinguistic approach in order to provide some evidence about clitic processing in Italian. Although Psycholinguistics cannot solve linguistic debates, it can add important empirical data to enlarge the domain of investigation for a more comprehensive understanding of the status of clitics. Unfortunately, the problem cannot be tackled directly. Since there is no unanimous view about determiner or affix processes one cannot test directly whether clitics are processed as articles or as affixes do. Thus, the logic is to investigate whether clitics pattern more as determiners or as affixes do with respect to some specific effects. Then, if one knows that a given variable is responsible for differential effects for articles and affixes, it is possible to investigate how clitics behave with respect to this variable.

Before addressing the relation between clitics and linguistically similar elements, a brief overview of Romance clitics is in order. Romance clitics are characterized by a few idiosyncratic properties:

(a) They cannot bear lexical stress. Thus, they phonologically depend on a stressed element (e.g., Ital. *pórta**lo*** 'bring it'), even when they are orthographically independent (e.g., Ital. ***lo** pórto* 'I bring it');[2]

(b) they occur in a special position within the sentence (i.e., a position different from the position normally occupied by an NP with the same syntactic function. Cf. Ital. *portaglielo* 'bring - to him - it' but *porta il cane a Giulio* 'bring the dog to Giulio');

(c) they entertain a strong relation with the verb host. Specifically, clitics are always adjacent to the verb they structurally and phonologically depend on. The adjacency condition means that they can precede the verb (i.e., they are proclitics, e.g., *lo porto* 'I bring it') or follow it (i.e., they are enclitics, e.g., *portalo* 'bring it!') depending on the given language and the given verb form. In

enclisis, clitic and verb are (graphically) combined in one word (in some languages, such as French, Portuguese and Rumanian, the clitic is preceded by a hyphen).

In table 1 an overview of the clitic system in Standard Italian is provided.

Table 1. Overview of the Italian clitic system.

	I S	II S	III S		I P	II P	III P
DAT	*mi*	*ti*	*gli* (m) *le* (f)		*ci*	*vi*	*(loro/gli)*[3]
ACC	*mi*	*ti*	*lo* (m) *la* (f)		*ci*	*vi*	*li* (m) *le* (f)
RIFL	*mi*	*ti*	*si*		*ci*	*vi*	*si*
PART				*ne*			
LOC			*ci/vi*				

The paper is organized as follows. Firstly, the issue of the shared representation hypothesis between clitics and definite articles will be addressed. On the basis of experimental evidence it will be proposed that clitics and definite articles do not share their lexical representations since they are differentially processed. The following paragraph goes into the core issue of theoretical linguistics concerning the status of clitics. The arguments brought in favor of both syntactic and lexicalist accounts will be briefly reviewed. It will become apparent that none of them is sufficiently strong as to definitively support one of the two accounts against the other one.

The last section is devoted to some other psycholinguistic findings, which can indirectly help us in our understanding of the clitic class.

2. Third person object clitics and definite articles

According to Elbourne (2001) clitic pronouns such as Italian *la* 'it [f]' in Maria *la chiude* 'Mary is closing it [f]' are generated by structures such as *Maria chiude la porta* 'Mary is closing the door'. After NP-deletion, the pronoun replaces the NP thanks to the identity between object clitics and definite articles. Indeed, object clitics and definite articles are considered options of the same lexical entry.

Two basic reasons can motivate the view that definite articles and third person accusative clitics share their lexical representation.

Firstly, according to the DP hypothesis (Longobardi, 1994), they both belong to the D(eterminer) category. Secondly, they are formally similar in the whole Romance area, as they both usually derive from the Latin demonstrative pronoun *ille* (Vincent 1997; 1998; Delfitto 2002).

In this section, it will be suggested that not only do clitics and articles have different representations, but that they are also differently processed.

To begin with, the shared representation hypothesis faces logical and theoretical difficulties. The point is that clitics are often similar, but not identical, to articles in a given Romance language. Now, how is it possible that similar (that is, not identical) elements happen to be represented together? As a matter of fact, a shared representation entails no difference between the elements in question; yet, minor formal differences do exist between articles and clitics (for instance, in Italian, the definite article form for *tavolo* 'table' is *il*, whereas the corresponding accusative clitic form is *lo*). Of course, one may want to postulate some additional mechanism with the function of encoding these formal differences. One should ask, however, why the idea of one lexical entry for two elements, augmented by an additional mechanism for implementing the differences between these two elements, is better than having one representation for each. What is the purpose of factoring out the common properties of two elements (e.g., by saying that both belong to the D category), if this operation implies the assumption of an additional (quite strange) mechanism, necessary for the implementation of formal differences as well as of syntactic and semantic differences?

In addition, note that not even formal identity guarantees shared representation. Consider the case of homophone words. Two homophones are phonologically identical, but often grammatically different. As grammatical information must necessarily be encoded, there must be a level at which homophones are independently represented. Moreover, it appears that homophones behave as autonomous entities through all stages of processing (Caramazza et al. 2001; *pace* Dell 1990; Jescheniak & Levelt 1994).

Therefore, one would like to claim that the hypothesis of a shared representation for third person accusative clitics and articles comes from the confusion between the synchronic and the diachronic dimensions. As is well known, however, elements sharing etymology need not be processed in the same way. Notice, incidentally, that it is not always the case that definite articles and third person accusative clitics derive from the same Latin word. While there is a restricted sample of languages where definite articles derive from Latin *ipse*

(e.g., Sardinian), clitics always derive from *ille* (Vincent 1997; 1998; Wanner 1987). Thus, in these languages, the synchronic difference between articles and clitics is mirrored in etymology.

Empirically, the shared representation hypothesis would predict that third person accusative clitics and definite articles follow the same processing stages.

In fact this prediction is not borne out, at least as far as Italian is concerned.

For a correct selection of definite articles in Italian, we need to access the phonology of the content word (noun or adjective) following a given article. This is because masculine nouns and adjectives may select *il*/*i* or *lo*/*gli* depending on their phonological onset.[4]

This assumption is supported by Miozzo & Caramazza's (1999) finding. These authors observed that in Det-Adj-Noun production RTs were faster when the adjective and the noun required the same article forms (e.g., *il grande tavolo* 'the big table') as opposed to when they required different article forms (e.g., *il grande scoiattolo* 'the big squirrel').

On the other hand, clitic choice is not affected by the phonology of the given content word referred to. One could make the point, however, that in virtue of the fact that clitics belong to the same category as definite articles (i.e., they are both determiners), the phonological properties of a content word are automatically available even when people are asked to produce a clitic pronoun. The reasoning goes as follows: (a) definite articles require phonological information about the word that follows it; (b) articles are determiners; (c) clitics are not affected by the phonology of the noun they refer to, but clitics are determiners just as articles; (d) thus, it is reasonable to assume that the phonology of a content word is automatically available for all determiners.[5]

This hypothesis was tested experimentally (Finocchiaro & Caramazza in press). The picture-word interference paradigm is one of the best ways to address this issue. In its basic version, participants are requested to name the pictures while trying to ignore the words written inside.

As is well known, in picture naming distracter words superimposed on the pictures yield faster RTs when they are phonologically related (e.g., *gancio* 'hook' - *GATTO* 'CAT') as compared to when they are phonologically unrelated (e.g., *lavagna* 'blackboard' - *GATTO* 'CAT'. Starreveld & La Heij 1996; Schriefers et al. 1990).

Our goal was to test for a phonological effect in clitic production.

If there is a phonological effect, it should be easier to produce *lo*

in response to a picture of a cat (Ital. *gatto*) when the distracter is *lavagna* than when it is *gancio*.[6]

Results showed that when people are asked to refer to a picture with an accusative clitic within an enclitic context (e.g., *portalo* 'bring it'), error rates and RTs do not vary as a function of the distracter phonology. That is, it makes no difference whether or not the distracter is phonologically related to the pictured noun. On the other hand, the well known effect of phonological facilitation was observed with the same materials in a picture naming task (Finocchiaro and Caramazza in press).

With the necessary caution in interpreting null results, this finding was taken as a support for the view that access to the phonology of the referent noun is blocked in clitic production. This result plainly contrasts with the results obtained for definite articles, thus suggesting that third person accusative clitics and definite articles are autonomous entities that follow different processing stages.

The independence of articles and clitics is supported by an isolated observation of an aphasic patient. CDE was able to provide the correct form of the definite article for 120 out of 126 aurally presented nouns (95%). Her performance, however, significantly dropped (59% correct) when she was requested to produce the clitic corresponding to the same nouns.

One should be aware of the fact that this report is very close to being anecdotal. Still, although it could be accounted for in various ways, and a complete examination of the patient's performance is not yet available, the observed dissociation between articles and clitics is quite impressive. Furthermore, it fits well with the experimental results and the theoretical considerations discussed above, suggesting distinct representations and distinct production mechanisms for articles and clitics.

Converging evidence also comes from acquisition data in normal and impaired children. Jakubowicz *et al.* (1998) for French and Bottari *et al.* (1993/1994) for Italian, have shown that children affected by SLI (specific language impairment) are significantly better in producing articles with respect to third person object clitics.

Note, incidentally, that it could be questioned that both clitics and articles have lexical representations *stricto sensu*. They may be considered bits of (morpho-)phonological material selected from bundle of features and inserted in specific positions in the course of speech production. Relevant features may be of different nature (conceptual, grammatical, phonological). In the case of definite articles,

these features may be gender, number, onset of the following word, definiteness; for clitics: gender, case, person, number, context-definition. Whatever the merits of these arguments, they do not impinge on the fact that third person object clitics and definite articles are differentially processed.

3. To what category do clitics belong?

So far, some evidence was provided against the shared representation hypothesis for third person object clitics and definite articles. Note, however, that this does not mean that clitics belong to a different category with respect to articles. One may still hold that clitics are in fact determiners (e.g., Sportiche 1996; Uriagereka 1995), though of a different kind with respect to definite articles. Of course, this view implies that the treatment reserved to determiners by the production system is not homogeneous. Alternatively, clitics may be viewed as affixes (e.g., Miller 1992; Monachesi 1999; 2000; Crysmann 2000; Miller & Monachesi 2003). As should be clear, the point is that clitics must join to the verb at some point of the speech production process. If they behave as affixes do, the verb-clitic combination should be located in the lexicon; if they behave as determiners do, the verb-clitic combination should be located in the syntax.

In this section the main arguments brought in favor of syntactic and lexicalist analyses will be reviewed.

A number of arguments can be made in favor of an analysis of Romance pronominal clitics as affixes. Clitics occur in a rigid order (cf. Ital. *portamelo*, lit. 'bring-to me-it' but not **portalome*, lit. 'bring-it-to me') as affixes do (cf. Ital. *storic-ist-ic-o* 'historicist', but not **storic-ic-ist-o*). Neither clitics nor affixes can have wide scope in coordination. For example, in Italian, the derivational affix *-tura* must be attached to each word of a coordinated structure (cf. *filatura e tessitura* 'spinning and weaving' but not **fila e tessitura*). A similar situation holds true for clitics (cf. Ital. *lo leggo e lo butto*, lit. '[I] it read and it throw away', but not **lo leggo e butto*, lit. '[I] it read and throw away'). Both clitics and affixes are highly selective with respect to their host. For example, in a number of languages, tense markers are verb-specific. As for Romance clitics, they always occur with verbal hosts.

Both clitics and affixes present arbitrary gaps in combination. For example, the Italian affix *-ment-* can only form masculine nouns (e.g., *cambia-ment-o* 'changing'), and cannot be followed by the femi-

nine gender marker *-a* (cf. *-ment-o* but not **-ment-a*). Similarly, the combinations of third person dative clitics and first or second person accusative clitics are always illegal across Romance (cf. Ital. **portaglimi*, lit. 'bring-to him-me' but *portamelo*, lit. 'bring-to me-it'. See below for a more detailed analysis of co-occurrence restrictions within the clitic class).

In addition, affixes present morphophonological idiosyncrasies with some stems. There are no linguistic reasons for the different behavior of the Italian nouns *gatto* 'cat' and *tigre* 'tiger' in combination with the diminutive suffix *-ino* (cf. *gattino* 'little cat', but *tigrotto* 'little tiger', cf. **tigrino*). The existence of similar idiosyncrasies between clitic and specific verb forms is not so clear (nevertheless, this represents a focal point for establishing the affixal status of clitics; see below).

Moreover, certain languages require/allow, depending on the context, the contemporary presence of a clitic and a full argument with the same syntactic function (clitic doubling. Cf. Spanish *Le entregué la carta a él* , lit. 'To him [I] sent the letter to him'). The fact that the clitic and the full argument occur together in certain conditions could be taken as an indication of the affixal status of the clitic.

It is not difficult, however, to find quite convincing counter-arguments against the equivalence clitics-affixes.

The order of clitics varies depending on the specific verb form, while the order of affixes does not. For example, in Italian clitics follow infinitive forms and imperatives (e.g., *porta**lo*** 'bring it', *portar**lo*** 'to bring it'), but precede finite forms (e.g. ***lo*** *porto* '[I] bring it'). On the other hand, affixes may require root or stem allomorphy (cf. Ital. *ami**k**-o* 'friend' – *ami**c**-izia* 'friendship'), while this is never the case for clitics. Clitics are usually in complementary distribution with the full argument with the same syntactic function (the case of clitic doubling mentioned above has to be considered the exceptional case), and there are also some tentative syntactic accounts of doubling phenomena (e.g. Jaeggli 1982; 1986; Belletti 1999).

A central point concerns the existence of morphological idiosyncrasies with specific verb forms. Since there is nothing wrong in phonology or in syntax with these (supposedly) illegal combinations, proponents of lexicalist analyses have argued that they are basically lacking in the lexicon. This is not an explanation, of course, but it could at least be a reasonable description of the facts.

The existence of such morphophonological idiosyncrasies is questionable, however. Monachesi (1999) picks out two main constraints for Italian verb-clitic combinations:

(a) plural present participle + third person accusative clitic (e.g., *riguardantilo* 'concerning [PL.] it/him', *riguardantila* 'concerning [PL.] it/her', *riguardantile* 'concerning [PL.] them [FEM.]', ?*riguardantili* 'concerning [PL.] them [MASC.]')

(b) singular present participle + masculine plural third person accusative clitic (e.g., *riguardanteli* 'concerning [SING.] them [MASC.]')

Native speakers' intuition is rather vague, since it is difficult to catch any clear difference among the various combinations of participle forms and clitic forms in (a) and (b). This is supposedly because present participle forms in Italian, independently of the presence of a clitic, are all rather uncommon and no longer productive, usually limited to technical languages. In such cases they tend to be adjectives (cf. *bollente* 'boiling', *potente* 'powerful'), or even nouns (e.g., *rappresentante* 'representative, delegate', *partecipante* 'participant'), rather than true verbs, although they originated as such.

Whatever the merits of these arguments are, it is unquestionable that some clitic-verb combinations are marginal. Similarly, it must be acknowledged that some clitic-clitic combinations are marginal or incorrect in the whole Romance area. Indeed, a peculiar property of Romance clitics is the possibility of their occurrence in a cluster. Thus, the question arises of how clitics happen to join together. One possibility is that we retrieve the clitics of a cluster one after the other, the whole form being the result of the independent access to each clitic. Alternatively, one could argue for a direct access to a clitic cluster: in this case, the cluster is not made up compositionally, but is represented as such in the lexicon (Monachesi 1999). Two kinds of evidence have been offered in favor of direct access to a clitic cluster. The first kind of evidence lies in the existence of 'opaque' clusters. A well known example is the combination of accusative and dative third person clitics. In French, the order dative-accusative is inverted (1 a-b), in Spanish the dative clitic is substituted by the form *se* (3 a-b), in Italian the gender opposition is lost, and the two clitics combine in one word (2 a-b).

(1) a. Jean *le lui* présentera.
         'John will introduce him to him/her.'
     b. *Jean *lui le* présentera.
         'John will introduce to him/her him.'

(2) a. Gianni *glielo* presenterà.[7]
         'John will introduce to him/her him.'

      b.   *Gianni *le lo* presenterà.
           'John will introduce to her him.'

(3)   a.   Juan *se lo* presentera.
           *Juan *le* [DAT.-FEM./MASC.] *lo* presentera.
           'John will introduce to him/her him.'

The second type of evidence is the existence of arbitrary gaps in the cluster system. That is, independently of syntactic reasons, some combinations of two clitics result in illegal or marginal clusters. The strongest constraint, widespread in the whole Romance area, concerns the impossibility for the third person dative clitic to cluster together with first and second person accusative clitics; as shown in the following examples – from French, Italian and Spanish respectively – it is impossible to say *John introduces me to him* by using two clitics.[8]

(4)   *Jean {me lui/lui me} présente.

(5)   *Gianni mi gli/gli mi presenta.

(6)   *Juan me le/le me presenta.

Notice that there is nothing wrong with the syntax of sentences (4), (5) and (6). This is demonstrated by the fact that the same sentences become perfectly grammatical if one of the two clitics is replaced by a strong pronoun or a full NP argument with the same syntactic function (cf. *Jean me présente à lui*, *Gianni mi presenta a lui*, *Juan me presenta a él*).

Since marginal or illegal clusters cannot be identified on the basis of syntactic rules, it is reasonable to assume that clitic clusters are directly accessed. The latter view provides the basis for the reconciliation of the lexicalist hypothesis with the idea of clitics as independently represented elements. It could be proposed that the relation between the two clitics of a cluster is lexically defined, whereas the relation between the cluster and the verb is syntactic (Simpson & Withgott 1986). Let us call this proposal the 'weak version of the lexicalist hypothesis'.

It could also be envisaged an alternative explanation within the syntactic account, by appealing, for instance, to the hypothesis of a differential retrieval for transparent and opaque forms. Thus, one could make the point that opaque clitic clusters behave differently

from other, transparent clusters (such as I/II person dative-III person accusative combinations). Specifically, transparent clusters would be retrieved compositionally by independent access to each of the clitics forming a given cluster, whereas opaque forms would be accessed directly as a whole.

In essence, the contrast between the retrieval of opaque clusters and the retrieval of transparent clusters would mirror the supposed contrast between the retrieval of opaque forms and the retrieval of transparent forms. The point is that if this contrast is valid, the existence of opaque clusters is irrelevant with respect to the question of direct access to transparent clusters.

As for the existence of arbitrary gaps in cluster formation, illegal clusters could be rejected after the clitics have already been accessed. In this case, each clitic of a given cluster would be independently accessed. Illegal clusters would be ruled out by an additional checking mechanism operating at a post-lexical level.

To summarize this section, it has been shown that the peculiar properties of Romance clitics cannot be fully accommodated within a syntactic or a lexicalist framework. No argument appears sufficiently strong as to support definitely one of the two hypotheses against the other one. We are left with the ambiguous nature of clitics, halfway between autonomous words and affixes.

On the one hand, clitics, as acknowledged by the lexicalist hypothesis, display a certain degree of lexical dependency that is puzzling within a syntactic framework. On the other hand, the syntactic account seems to give the right relevance to the peculiarity of clitics that are reluctant to a complete assimilation to affixes.

In the next section, some evidence will be provided about clitic processing.

4. Do clitics behave as autonomous words or as affixes?

As mentioned in the Introduction, the best way to investigate how clitics are processed is probably to investigate how they behave when specific variables are manipulated.

The logic is the following: if a given variable is supposed to affect free morphemes and affixes differentially, the behavior of clitics with respect to this variable will provide us with some information about the status of clitics.

Recently, attention has been drawn to the way in which grammatical features are processed. Grammatical gender is one of the most studied features.

Since the pioneering paper by Schriefers (1993), it is well known that people are faster in producing NPs in response to pictured nouns with gender-congruent distracters than with gender-incongruent distracters.

The presence of the gender-congruency effect, however, appears to be conditioned by the status of the to be-marked element: If the gender-marked element is a free-standing morpheme – as is the case of definite articles – the gender-congruency effect is visible. On the other hand, if the gender marked element is an affix, the gender-congruency effect is not visible (Schiller & Caramazza 2003 on German and Dutch, Costa et al. (2003) on Croatian; but see Schriefers (1993) on Dutch and Schriefers et al. (2005) on German).[9]

According to Costa et al. (2003) the reason for this discrepancy lies in the fact that inflectional processes involve phonological transformations rather than the simple concatenation of affixes to bare stems. Since inflected forms are produced by transforming a base form into other forms (see Anderson 1992; Scalise 1994), grammatical features would not select a specific bit of phonological material but select a phonological transformation. In this view, there is no opportunity for competition between different phonological forms.

Going back to clitics, the reasoning has been that if clitics are free forms they should pattern as determiners do – thus, a gender-congruency effect is expected; on the other hand, if clitics are affixes latencies are not expected to vary as a function of the gender relationship between the pictured noun and the distracter.

In a previous paper, the phonology and the grammatical gender of the distracter were manipulated (Finocchiaro & Caramazza in press).

A set of 26 pictures (half masculine, half feminine) and one of 13 verbs were selected. Each verb was paired to two pictures, one masculine and one feminine. Each picture was paired to four distracters: phonologically related, gender-congruent (BANANA 'banana' – barba 'beard'), phonologically related, gender-incongruent (BANANA 'banana' – banco 'desk') phonologically unrelated, gender-congruent (BANANA 'banana' – penna 'pen') phonologically unrelated, gender-incongruent (BANANA 'banana' – disco 'disk').

On each trial, a verb in the infinitive form immediately followed the fixation point on the computer screen. After 1000 ms., the verb was replaced by a given picture with the distracter. Twelve participants were asked to produce the II person singular of the imperative verb form of the given verb with the correct object clitic corresponding to the pictured noun. Thus, for instance, given the verb *portare* 'to

bring' and the picture of a dog (Italian: *cane* [m]), participants were supposed to say: *portalo* 'bring it'. Participants were instructed to ignore distracters, and to respond as quickly as possible.

No effect (Distracter Gender, Distracter Phonology, Distracter gender * Distracter Phonology) reached significance (all p > .1).

Although no firm conclusion can be drawn by null results, the null effect of distracter gender leads us to believe that the gender-congruency effect is not visible in clitic production. One possible interpretation of this finding is that clitics pattern as affixes do. As said above, the gender-congruency effect proves to be invisible when the gender marking only appears as an inflectional ending (Schiller & Caramazza 2003; Costa *et al*. 2003).

Our experiment, however, made use of enclitic pronouns – that is, clitics that attach to the ends of words, resembling in this respect to inflectional affixes. In Italian, when the verb is in a finite form (with the only exception of the affirmative imperative) clitics occur pre-verbally (i.e., they are proclitics).

The question is whether or not the results that had emerged with enclitics may be safely extended to proclitics as well. Proclitics, differently from enclitics, are written separately from the verb.

Indeed, asymmetries between enclitics and proclitics are well known and appear to extend beyond superficial graphical differences. Specifically, the relation between the proclitic and the host verb appears to be less strong than the relation between the enclitic and the host verb (Benincà & Cinque 1993).

Benincà & Cinque (1993) argued that the graphical difference between enclitics and proclitics corresponds to deep structural differences. Let us briefly review some of the arguments brought in favor of a syntactic distinction between enclitics and proclitics. Firstly, under very specific conditions, two verbs, that are hosts of the same proclitic, may be coordinated across Romance (e.g., Italian: *Lo leggo e rileggo senza sosta* 'I read and re-read it incessantly'). This, however, is never the case for enclitics (e.g., Italian: **Leggi e rileggilo* 'Read and re-read it').

Furthermore, in some Romance languages, proclitics, but not enclitics, may be coordinated in some cases (e.g., French: *Je lui et vous ferais un plaisir* 'I'll do a favor to him and to you' but **Ecris-nous et lui* 'Write to us and to him').

In proclisis, but not in enclisis, the clitic may occasionally be separated by its host verb. This is never possible in standard Italian, but it was in ancient Italian (e.g. *lo non dico* 'I do not say that', Boccaccio, *Decameron* VIII, 6).

Finally, in some languages, stress reassignment may be triggered by enclitics but never by proclitics (e.g., Neapolitan: *pígli«* 'seize' - *píglial«* 'seize it' - *pigliatéll«* 'size it for you').

Whatever the merits of every single argument, it appears that enclitics and proclitics are not exactly the same thing.[10]

Thus, one cannot exclude the possibility that proclitics behave differently from enclitics with respect to the gender-congruency effect.

The behavior of proclitics was verified experimentally (Finocchiaro 2002). Specifically, the question was whether proclitics behave as enclitics do with respect to the gender-congruency effect. The procedure and the materials were exactly the same as in the previous experiment. Sixteen participants were asked to produce the object proclitic corresponding to the pictured noun followed by the given verb in the second person singular of the present form (e.g., *lo porti* 'I bring it [m]', *la porti* 'I bring it [f]').

Results showed an effect of the gender of the distracter, significant by subjects, marginal by items (F1(1,15) = 5.4, p = .03; F2 (1,25) = 3.1, p = .09), showing that people are faster in producing the proclitic and the verb when the distracter is congruent in gender (676 ms.) with respect to the pictured noun, than when it is not (692 ms.). No other effect (Distracter Phonology, Distracter Phonology * Distracter Gender) reached significance. This finding may be taken as evidence that proclitics behave as free morphemes rather than as affixes and enclitics. This follows from the available evidence showing that the gender congruency effect is only visible when gender is marked on free – *vs.* bound – morphemes (see below).

5. Discussion

Let us summarize the main findings of the experiments reported on in the previous section.

It has been observed that clitics behave differently with respect to the gender-congruency effect depending on the position they occur in. Specifically, when they follow the host verb – i.e., when they are enclitics – the gender-congruency effect is not visible. On the other hand, when they precede the verb – i.e., when they are proclitics – RTs are faster in the case of gender-congruency than in the case of gender-incongruency.

This finding should reveal that the behavior of enclitics might be assimilated to the behavior of affixes, whereas the behavior of procli-

tics may be assimilated to the behavior of free morphemes. This is because free-standing morphemes – such as definite determiners – are known to be sensitive to the gender-congruency effect (Schriefers 1993, La Heij *et al*. 1998, Schiller & Caramazza 2003, Costa *et al*. 2003), whereas affixes – such as inflections on adjectives – are supposed to be insensitive to the gender-congruency effect (Schiller & Caramazza 2003; Costa *et al*. 2003).

A possible objection could be that the differential pattern observed has nothing to do with intrinsic differences between enclitics and proclitics but merely reflects the clitic position in the to-be-produced sentence. Thus, it is possible that in the case of enclitics people start speaking (with the verb) before the clitic is encoded for production. As a consequence, by the time the clitic is encoded, the effect of the distracter would have already dissipated. On the contrary, in the case of proclitics, since the clitic is the first element, participants cannot start speaking until the proclitic is ready for production. Thus, the distracter word would interfere with proclitic production.

This hypothesis, however, makes a wrong prediction: since people are assumed to start speaking before the enclitic pronoun is available, enclitic production is assumed to be insensitive to any effect of the distracter. Indeed, it has been found that enclitics are sensitive to the semantic category of the distracter: when the distracter belongs to the same semantic category as the pictured noun, RTs are slower with respect to when the distracter belongs to a different semantic category (Finocchiaro & Caramazza in press).

Thus, it is reasonable to believe that the differential pattern exhibited by enclitics and proclitics depends on their intrinsic properties. These properties in turn appear to assimilate, on the one hand, enclitics with affixes, and, on the other hand, proclitics and free morphemes.

It may be surprising that homophonous elements with the same syntactic function are differentially processed. This, however, is not so unreasonable as it could seem at first sight.

As said above, there is substantial evidence for the existence of asymmetries between enclitics and proclitics. These asymmetries have led some researchers to believe that only the combination between the enclitic and the verb forms a new word at the morphological level. On the contrary, the combination between the proclitic and the verb is to be considered a phonological – i.e., not lexical – unit (Benincà & Cinque 1993).

Ultimately, asymmetries between enclitics and proclitics may be extended further since asymmetries between prefixes and suffixes

are well known. This issue, however, exceeds by far the scope of this paper.

6. Conclusions

In this paper, the issue of the status of Romance clitics was addressed according to a psycholinguistic perspective. The main target was broadening the domain of investigation rather than solving the theoretical debate.

Labels such as "lexical representation" and "processing" make sense only when empirical data are considered within a model of language production.

The different behavior of clitics and definite determiners with respect to the gender-congruency effect argues against the hypothesis of a 'shared representation': if two elements behave differently with respect to a given variable, the claim that they are retrieved from the same lexical entry is unwarranted.

The same line of reasoning has been followed in order to test the behavior of enclitics and proclitics with respect to the class of determiners and the class of affixes. Results showed that enclitics pattern with affixes whereas proclitics pattern with free-standing morphemes with respect to the gender-congruency effect.

Although no final claim can be made, the latter finding converges with the observation that enclitics and proclitics display different linguistic behaviors (see Benincà & Cinque 1993).

Hopefully, a systematic interplay between linguistic analysis and psycholinguistic evidence will help us in understanding the nature of clitics and their relation with affixes and determiners across Romance languages.

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Footnotes

[1]   It should be clear that this is not to claim that the clitic-article comparison is central within the syntactic approach. The core issue of this approach is that the

object clitic is generated in argument position. Then, according to one of the most influential analysis (e.g., Kayne 1991), the clitic left-adjoins to a functional head, yielding the clitic-Verb order in cases where the functional head dominates the verb. The Verb-clitic order in Italian is, on the other hand, be claimed to result from the verb's having moved leftward past the functional head to which the clitic has adjoined.

What is claimed is simply that the lexicalist and the syntactic approaches, when considering the elements that are similar to clitics, have pushed the similarity with affixes and definite articles respectively.

[2]   In French, after the affirmative imperative, *moi*, *toi*, *le*, *la*, *les*, *lui*, *nous, vous*, *leur* are tonic. In a number of southern Italian dialects, clitics can be stressed under special conditions. These conditions vary depending on the particular dialect considered. Clitics may also be stressed in contexts of particular emphasis.

[3]   *Gli* as a third person plural pronoun is limited to informal speech. As to the pronoun *loro*, it has to be considered as an atypic clitic.

[4]   Specifically, masculine words beginning with /sC-/, /ts-/, /dz-/, /gn-/, and vowels select the forms *lo* (*l'* before vowel) in the singular, and *gli* in the plural; otherwise they select *il* (singular) and *i* (plural). When the noun begins with uncommon consonants or consonant clusters, however, article selection may also turn out to be less deterministically guided (see Bertinetto 1999; Marotta 1993).

[5]   It should be noted, though, that the parallelism between clitics and articles is not perfect. This is because the linguistic entity "following word", relevant for articles, makes no sense for clitics. Thus, we hold that, if clitics access the phonology of a content word, this word has to be the noun denoting the referent. Clitics can, of course, also refer to sentences. This case will be disregarded here for a number of reasons. Indeed, it would have required a more complex experimental design, and would have not permitted, at the same time, a direct comparison with the picture naming data reported in the psycholinguistic literature.

[6]   In this case, the prediction is reversed with respect to picture naming. That is, if a phonological effect is visible in clitic production, phonologically related distracters are expected to yield slower RTs than phonologically unrelated distracters. This is because clitic phonemes would be inhibited by the activation of the referent noun phonemes.

[7]   The *-e-* inserted between *gli* and *lo* is due to euphonic reasons, independently of phonotactic considerations.

[8]   As is obvious, clusters formed by dative and accusative clitics sharing their person feature are illegal. However, this constraint has nothing to do with the intrinsic properties of the clitic system, as it is due to logical-pragmatic reasons.

[9]   It appears that the presence of the gender-congruenct effect crucially depends on the information needed to select the gender-marked element. Specifically, when grammatical information is sufficient to the selection of the correct determiner form, the gender-congruency effect is visible. On the other hand, when determiner selection must await for the phonological context – as is the case of Italian and Romance languages in general - the gender-congruency effect is not visible (for instance, in Italian, the masculine definite article is *il* or *lo* depends on the following word). Thus, in these languages, by the time the necessary phonological information is available, the activation of the distracter lexical node would have dissipated along with the activation of its associated gender feature, leaving little opportunity for significant activation of competing determiner forms (Caramazza et al. 2001; see also Costa et al. 1999, Miozzo & Caramazza 1999). Whatever the merits of these arguments are, it is generally assumed that when grammatical information is sufficient to select the gender-marked form a gender-congruency effect is to be observed. Thus, since the selection of the correct clitic is

independent of information about the phonological context, it will be assumed that in case of failure to observe a gender-congruency effect in clitic production, it should be attributed to factors other than phonological-dependency.

[10]   This can be especially true in some languages. For instance, in Portuguese, there is a number of evidence for the lexical status of enclitics, whereas proclitics appear to be much more free. Perhaps the most striking argument in favor of the lexical status of Portuguese enclitics is the fact that both accusative and dative enclitics may be sometimes infixed between the tense/agreement morpheme and the stem.

On the contrary, in some northern dialects, some elements (such as the negation *não*) may occasionally intervene between the proclitic and the host verb (on the specificity of Portuguese clitics see Madeira 1992; Duarte et al. 1995; Crysmann 2000).

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