Prepositional phrases and argument structure[1]

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Abstract

This paper discusses prepositional phrases (PPs) in relation to the complex distinction between arguments and adjuncts. It first considers the different syntactic properties and treatments of arguments and adjuncts in formal and typological approaches and then illustrates several semantic proposals which identify an intermediate category to which PPs might belong. This category is called an 'argument-adjunct' in Van Valin & LaPolla (1997), 'subcategorized adjunct' in Dowty (2003) and 'inner and outer margin' in Prandi (2004, 2013, 2015). We then examine locative PPs taken from a corpus of spoken Italian in order to verify on the basis of actual language use how relevant the theoretical proposals are when applied to real data.

Analysis confirms that the distinction between three types of PPs, arguments, adjuncts and argument-adjuncts, is semantically valid even when we take into account just one class of PPs. However, if the syntax-prosody-pragmatics interface is considered, it is found out that the prosodic and pragmatic correlates of our PPs do not distinguish arguments from adjuncts and argument-adjuncts; rather they distinguish both prosodically and pragmatically salient information from non-salient information on the basis of the linear precedence of the former over the latter.

L'articolo si occupa dei sintagmi preposizionali (SP) in relazione alla complessa distinzione tra argomenti e aggiunti. Inizialmente vengono considerate le diverse proprietà sintattiche che distinguono argomenti e aggiunti, si passa poi a descrivere come gli approcci formali e tipologici trattano le due categorie. Successivamente vengono illustrati alcuni approcci semantici che ipotizzano una categoria intermedia tra gli argomenti e gli aggiunti. Tale categoria è chiamata 'argomento-aggiunto' in Van Valin & LaPolla (1997), 'aggiunto sotto categorizzato' in Dowty (2003), e 'margine interno ed esterno' in Prandi (2004, 2013, 2015). Infine vengono analizzati dei SP locativi tratti da un corpus di italiano parlato per verificare sulla base di usi autentici della lingua in che misura le proposte teoriche si applicano ai dati.

L'analisi conferma che la distinzione tra i tre tipi di SP è semanticamente valida anche quando si analizzano dati riguardanti una singola tipologia di SP. Comunque, se si prende in considerazione l'interfaccia sintassi-prosodia-pragmatica, si scopre che i correlati prosodici e pragmatici dei SP non distinguono tra argomenti, aggiunti e argomenti-aggiunti; piuttosto essi distinguono a livello prosodico e pragmatico l'informazione saliente dall'informazione non saliente sulla base della precedenza della prima rispetto alla seconda.

1. Introduction

Argument structure has been a much-debated topic in the linguistic literature since Tesnière (1959) introduced the concept under the name of 'valency'. Initially the problem was to single out the number of 'actants' or 'arguments' associated with verbal predicates. However, it soon became clear that it was not easy to decide upon the number of elements a verb takes or to distinguish between the arguments and 'circumstants' or 'adjuncts' of a predicate. This is mainly due to the fact

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[1] I am grateful to Michele Prandi for his suggestions and to the three anonymous reviewers of this paper for their useful comments.

that there is no one-to-one correspondence between the syntactic and semantic structure underlying a predicate. Arguments can be dropped or can have multiple realizations or alternations.[2] Studies have therefore been directed towards detecting the different argument realizations of a verb (LAZARD 1994, LEVIN & RAPPAPORT HOVAV 2005), rather than towards establishing whether a nominal constituent in a sentence is an argument or an adjunct. In more recent semantically-oriented approaches the attention has been directed towards the 'event structure' of the sentence rather than the semantics of single verbs, in relation to the kind of information determined by the combination of all the elements in the sentence (LEVIN & RAPPAPORT HOVAV 2005; VAN VALIN 2005, 2013). However, the problem of determining whether a nominal element in a sentence is an argument or an adjunct still remains[3], in particular for those constituents which we might consider as the third argument of a predicate, already noticed by TESNIÈRE (1959). We will thus deal mainly with prepositional phrases (PPs) in this paper and will try to introduce some solutions which have recently been proposed in the literature.

The topic is of course extremely complex for various reasons; among these factors are the following: 1. different terminologies are used in the literature reflecting different interpretations in line with distinct theoretical approaches; 2. what a PP is in one language might be realized as an NP in another[4]; 3. the issue involves various levels of analysis, i.e., mainly, but not only, syntax and semantics, and thus there is an interface or cross-level problem. The aim of this paper is therefore to return to the distinction between arguments and adjuncts and to discuss the common and specific properties of these categories in a perspective which takes into account all levels of analysis, from the phonological to the pragmatic, in order to show the advantages of dealing with this distinction as an interface issue.

The paper is organized as follows: first, we discuss the terminologies, the properties and the different syntactic and semantic interpretations of arguments and adjuncts in the formal and functional-typological literature; next we analyse a small class of PP constituents conveying locative information in Italian. A syntactic and semantic classification of our data is provided and then its prosodic and pragmatic correlates are considered in line with our interface approach. This

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[2] See the ditransitive construction with verbs such as 'give' in English which alternates with the dative construction.

[3] The fact that this topic is still discussed in conferences and meetings underlines its importance and topicality; one instance, among others, was the Workshop on 'The argument/adjunct distinction cross-linguistically' held during the 44th Annual Meeting of the Societas Linguistica Europaea (SLE2011: Logroño, Spain, 8-11 September 2011).

[4] Cross-linguistically what is realized as a PP in one language can be an NP marked for case, or a nominal expression with no adposition or case. See MITHUN (2005, 2006) and her data on Mohawk, an Iroquoian language in which "there are no case markers on nouns ... and no real counterpart to the adpositions of languages like English" (MITHUN 2005: 448). In Mandarin Chinese there are some locatives dependent on movement predicates such as *to go* which are transitive predicates, as in:

(i)   wǒ qù Běijīng le
        I   go Běijīng ASP
        I went (to) Běijīng

leads us to conclude that PPs behave according to pragmatic sentence structure, that is, their various syntactic positions are due to whether they signal pragmatically salient or non-salient information. It is then demonstrated that the distinction between argument and adjunct does not hold in syntax; in other words, on the basis of our results we may conclude that the theory of valency leading to the concept of argument structure is nothing more than a distinction between transitive and intransitive predicates in syntax.

2. TERMINOLOGY AND DEFINITIONS

In addition to arguments and adjuncts there are other terms used in the literature to refer to PPs. The various terms mainly stem from the different theories which have dealt with the two types of PPs. The term 'oblique', which might be taken to relate to the syntactic function of prepositional and/or nominal constituents, is also often used to refer to only adjunct elements[5]. Another aspect of the terminological problem concerns the fact that adjuncts are a cross-categorial phenomenon as they concern everything within an utterance which is added to the core information conveyed by the predicate and its arguments.

In any case, the distinction between arguments and adjuncts is a well-established issue in linguistics; indeed, it was proposed at the end of the 1950s by TESNIÈRE (1959), although JESPERSEN (1992 [1924]) had already introduced the term 'adjunct' both within the sentence and the nominal constituents (distinguishing between the 'nexus' and the 'adjunct'). Basically the pairs of terms which are most commonly used to distinguish the two categories are the following:

(1) a. complements/adverbials
 b. actants/circumstants
 c. arguments/non-arguments
 d. arguments/adjuncts
 e. core or nucleus/periphery or satellites

While the terms in (1a) are typical of more traditional grammars, those in (1b) derive from TESNIÈRE's (1959) theory of 'valence'. (1c,d) are the terms mainly used by generative grammar, although the term 'non-argument', like 'adjunct', identifies a broader class of elements than just non-argumental obliques[6]. As for (1e), such terms are mainly used in functional (DIK 1997) and

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[5] Obliques are "nominal clause elements that bear no grammatical relation to the verb" (PAYNE, 1997: 262); see also note 2.

[6] Derived wh-constituents are also non-arguments or A' elements. Of course all dependencies in generative grammar are positions in the syntactic tree rather than direct grammatical relations.

typological approaches (VAN VALIN & LAPOLLA 1997). In this paper we will mainly refer to the terms 'argument' and 'adjunct' as they are the ones which have been more recently and most frequently used cross-theoretically.

As for the definitions provided for the two elements, we can say in general syntactic terms that an argument PP is a constituent subcategorized by a predicate while an adjunct PP is whatever is not subcategorized by the predicate of an utterance or one of its subcomponents. In a paper devoted to distinguishing between complements and adjuncts, DOWTY (2003) gives the following syntactic definition of adjuncts vs. complements: "An adjunct is an 'optional' element while a complement is an 'obligatory' element". He also distinguishes between the two categories at the semantic level in the following terms: "an adjunct 'modifies' the meaning of its head, while a complement 'completes' its head's meaning" (DOWTY 2003: 33). We will return to Dowty's treatment of complements and adjuncts later in the paper; for the moment it is useful to note that we adopt his definitions in full awareness that concepts such as modification need to be defined further and that the reference to obligatoriness to define arguments is debatable.

3. TYPOLOGY OF ADJUNCTS

As has been already pointed out, adjuncts include various categories. These are illustrated in the following scheme:

(2)   Typology of adjuncts

            PPs   adverbs   adverbial clauses   modifiers (in NPs)
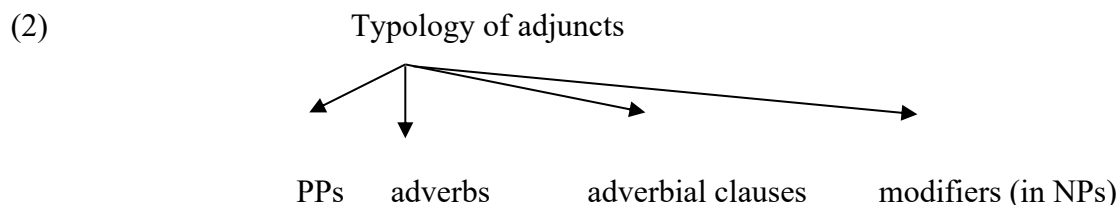
(2) shows that almost all syntactic elements can behave as adjuncts; as a matter of fact, we can also include adjectives, VPs and relative clauses. Indeed, we could simply say that the only categories that cannot be included in (2) are NPs[7] and complement clauses.

In general, studies on adjuncts concentrate on the first three categories in (2), but do not necessarily focus on one of the them. For example, in Dik's functional approach (DIK 1997) the three subtypes are considered as part of the underlying multi-layered clause structure. However, they need to be analysed separately as each one has partially specific syntactic and semantic properties. Since our aim is to see whether, and how, adjunct constituents behave differently from arguments, we will concentrate on the PP subtype.

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[7] However, NPs can behave as adjuncts in sentences such as:
(i)   I see Mary [every day]
although there are undoubtedly fewer NPs used as adjuncts in temporal or other circumstantial than there are PPs.

4. THE ARGUMENT VS. ADJUNCT DISTINCTION

4.a *Argument structure and formal grammars*

It is well known that, although strongly related to semantics, the theory of valency or of argument structure has mainly been based in studies of syntax on the following assumptions:

a.   there is a lexicon with subcategorized constituents fixed for each predicate in syntax;

b.   there is an argument structure which governs the relationship between syntax and semantics;

c.   each predicate is associated with a 'θ-grid', that is, it has a set of semantic roles; the relationship between arguments and θ-roles is ruled by principles such as the θ-Criterion (CHOMSKY 1981) or by Function-Argument Biuniqueness (later Uniqueness in BRESNAN 2001).

This presupposes that syntactic theories present a clear idea of what an argument and an adjunct are, and of what kind of diagnostics can lead us to distinguish formally between the two roles. Unfortunately this is not the case for a number of reasons, one being that adjuncts have not been considered until recently as an interesting object of investigation[8]. In formal syntactic theories they have been defined in the following way:

> "Adjuncts are not theta-marked and do not need to be licensed by relationship to an a-structure [=argument structure]… They are not subcategorized. Hence, their form is free, and they are never required by a-structure" (GRIMSHAW 1990: 108).

4.b *Typological and functional grammars*

Things are different in typological and functional theories since neither assumes the centrality of syntax; the approach is more based upon the interplay between syntax and semantics and it is assumed that language behaviour is determined by its communicative function. Dik (DIK, HENGEVELD *et al.* 1990; DIK 1997) makes a distinction between 'terms' "functioning as arguments to the predicate" (DIK 1997: 50) and 'satellites' which "largely coincide with 'adverbial modifiers'" (ibid.: 51), and proposes distributing the various kinds of satellites across the various layers in which the formal and semantic organization of the clause is articulated. Predicates and arguments constitute nuclear predications designating states of affairs (SoAs), to which satellites can be added as "optional further information pertaining to additional features of the SoA (Level 1), the location of the SoA (Level 2), the speaker's attitude towards or evaluation of the propositional content (Level 3), or the character of the speech act (Level 4)" (DIK 1997: 87). However, Dik recognizes that it is not easy to distinguish arguments from satellites; in his words "This is especially true of the borderline between arguments and predicate satellites (Level 1), since both types of elements

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[8] See note 2; basically, however, argument realization has been of more interest in the Linguistics community since LEVIN & RAPPAPORT HOVAV (2005).

tell us something about the internal properties of the SoA designated by the core predication" (ibid.: 87).

Dik's theory of grammar with his proposal regarding the organization of the clause structure into different layers is one of the first examples of an integrated model in which syntax interacts with semantics and pragmatics, thus yielding deeper analyses of grammatical phenomena. He also introduces a useful test to distinguish between arguments and Level 1 satellites based on the fact that the latter, but not the former, can be detached from the context of the predication, as the following examples show:

(3)   'Peter removed the lid from the jar' (ibid.: 227, (23))

(4)   *'Peter removed the lid, and he did it from the jar' (ibid.: 228, (28a))

(5)   'Peter removed the lid from the jar, and he did it with the screwdriver'   (ibid.: 228, (28c))

Given a sentence like (3), it is not possible to remove the locative[9] as this is an argument (4), whereas it is possible to remove the instrumental oblique added in (5) as this is a satellite. However, he distinguishes between different kinds of satellites, locating them at different layers, although while satellites at Levels 3 and 4 are justified on the grounds of a different semantic and pragmatic content from that at Level 1, satellites at Level 1 and 2 are not clearly differentiated. For example, it is not clear on what basis locative information such as the spatial orientation of the SoA, source, path or direction should belong to Level 1, while the location at which a SoA takes place should be Level 2. We will return to approaches distinguishing different kinds of adjunct PPs when we deal with the semantic treatment of adjuncts.

5. ADJUNCT VS ARGUMENT PROPERTIES

Adjuncts are undoubtedly a difficult category to deal with. Clear evidence confirming the difficulties in dealing with this category is provided by the fact that linguists do not agree in their interpretations of which PPs are realizations of arguments and which of adjuncts. Take the following examples:

(6)   John spoke <u>to Mary</u> <u>about these people</u> <u>in each other's houses</u> on Tuesday

(7)   John sang <u>to Mary</u>

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[9] In this paper the term 'locative' is used in its broadest sense; it is not meant to refer to specific spatial designations, such as the elative value in (3).

(6) is a sentence that CINQUE (2006) draws from PESETSKY (1995); both authors consider the three underlined PPs adjuncts, whereas at least the first of the three should be an argument. The semantics of this verbal predicate requires three arguments: the speaker, the addressee and the subject matter which the speaker is talking about, though the latter may be omitted but not cancelled from the semantic selection. (7), on the other hand, is taken from DOWTY (2003), who considers the PP an oblique complement, despite the fact that this has a beneficiary role which is not included among the basic semantic roles selected by a verb such as 'sing'. This shows that the argument structure of single predicates may be interpreted differently depending on the individual linguist.

However, in syntax a number of different properties have been proposed ever since a distinction was first made between subcategorized and non-subcategorized PPs. Among the various proposals, here we will consider SALVI's (1988: 32-34) list of properties which he specifically applies to Italian. According to Salvi, adjuncts[10] can be distinguished from arguments as they share the following properties:

(8) a. they are optional constituents;

   b. they are not associated with any selection restrictions[11] of the predicate;

   c. they can be freely added to any kind of sentence (if semantically compatible);

   d. they do not present any restrictions in syntactic order

Let us now apply the properties in (8) to some data from Italian:

(9) a. Gianni ha visto il film   (con piacere/ sull'aereo/   il mese scorso/con Francesca)
      G.   has seen the film (with pleasure/ on+the plane/the month last/ with F.
      'Gianni saw the film (with pleasure/on the plane/last month/with Francesca)'

   b. (Con piacere/ sull'aereo/ il mese scorso/ con Francesca) Gianni ha visto il film

   c. Gianni ha visto (con piacere/ sull'aereo/ il mese scorso/ con Francesca) il film

   d. ?Gianni (con piacere/ sull'aereo/ il mese scorso/ con Francesca) ha visto il film

In (9a-d) the PPs in parentheses are all adjuncts as they are optional (8a); they do not bear distinctive features such as [+/- Animate] or [+/- Human] which are in conflict with the predicate selection features (8b) and are freely adjoined since they are not semantically required by the predicate (8c). Finally, they can occur both in initial (9b) and in final position (9a) or between the

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[10] SALVI (1988) speaks of extra-nuclear elements rather than adjuncts in line with previous syntactic approaches within generative grammar.

[11] With the term 'selection restrictions' SALVI (1988) refers to semantic properties such as 'animateness' postulated in syntax in early generative grammar.

predicate and the object (9c) or even between the subject and the predicate (9d), which is less acceptable, but not ungrammatical. Notice that the properties in (8) are language-specific, in particular (8d); however, Italian is not alone in allowing free syntactic order of adjuncts.

If we adopt a comparative perspective, we can see that both (8a) and (8d) in some languages do not allow us to distinguish adjuncts from arguments. As for (8a), we know that there are null-argument or pro-drop languages; apart from Italian, which only allows null subjects, there are so-called non-configurational languages (HALE 1981) which allow sentences in which only the verbal complex is realized[12]. For example, a sentence such as (10a) can be interpreted as (10b) in Warlpiri, an Australian aboriginal language, on the basis of the linguistic or extra-linguistic context:

(10)a. Panti-rni ka[13]   (Warlpiri)

hit-NPST AUX

'He is hitting it'

   b. Ngarra-ngku ka   wawirri   panti-rni

man-ERG   AUX kangaroo hit-NPST

'The man is hitting the kangaroo' (HALE 1981)

Subject and object are dropped in (10a), showing that adjuncts are not the only constituents which can be dropped in this language.

As for (8d), it is interesting to notice that, of all the languages that allow the locative inversion construction, that is, sentences such as the following in English:

(11)   On the corner stood a woman (BRESNAN 1994, (13))

there is Chichewa, a Bantu language, in which the adjunct not only occurs in initial position but also behaves like a subject[14]; as a subject-behaving constituent it certainly cannot be considered an adjunct:

(12)   Pa-m-sikǎ-pa   pá-bádw-a   nkhonya (BRESNAN 1994, (47))

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[12] But see FILLMORE (1986) for cases of pro-drop pragmatically conditioned in a non-pro-drop language such as English.

[13] In the paper the following abbreviations will be used:
ASP= aspect; AUX= auxiliary; ERG= ergative; f_0= fundamental frequency; FUT= future; IND= indicative; NPST= non past; PP= prepositional phrase; SBJ= subject.

[14] As observed by BRESNAN (1994), locative inversion is restricted to unaccusative verbs in Chichewa and in English; this, however, is not relevant to our discussion. What is relevant, on the other hand, is that it is questionable whether the locative constituent in (11) is really an adjunct, as we will see later in the text.

16-3-market-16-this 16SBJ-FUT-raise-IND 10-fight

'In this market is going to raise a fight'

In (12) the locative marker *pa* on the noun in initial position, which is a class marker, is repeated on the verb in the position of subject markers; there is thus a morphological and functional change of the adjunct.

Given the fact that the tests elaborated in syntax to distinguish arguments from adjuncts do not provide neat results cross-linguistically, doubts arouse regarding the possibility of dealing with this distinction in syntax, prompting us to address the semantic treatments of obliques instead.

6. SEMANTIC TREATMENTS OF OBLIQUES

There have been some studies that have singled out the semantic aspects which motivate the inappropriateness of a clear-cut two-way distinction between arguments and adjuncts: VAN VALIN & LAPOLLA (1997), DOWTY (2003) and PRANDI (2004, 2013, 2015). These three studies are interesting in that, albeit in different ways, they share the idea that the boundaries between arguments and adjuncts are fuzzy.

6.a *Van Valin & LaPolla's study of adpositions*

In the first study VAN VALIN & LAPOLLA (1997; also VAN VALIN 2005, 2013) follow JOLLY's (1991, 1992) distinction of three types of prepositions, and divide PPs into arguments, adjuncts and 'argument-adjuncts'. According to the authors, oblique constituents can be arguments such as the RECIPIENT participant in (13a) whose 'logical structure' is (13b):

(13)a. $Bill_x$ gave the $book_z$ to $Fred_y$

    b. [do'(x, Ø)] CAUSE [BECOME have'(y, z)] (VAN VALIN & LAPOLLA 1997: (4.17b, b'))

The RECIPIENT in (13a) is marked by a preposition which is not listed in (13b); this is because prepositions of this kind "can usually be predicted from the logical structure of a verb" (VAN VALIN & LAPOLLA 1997: 158) and undergo a general rule according to which *to* is assigned to the *x* argument in the logical structure segment: BECOME pred' (x, y).

As for adjuncts, the prepositions introducing them are said to be "always predicative by definition, since they do not mark arguments of the verb. Since they modify the core as a whole, they take the logical structure of the verb of the clause as one of their arguments" (ibid.: 159), as shown in (14):

(14)a. Sam baked a cake in the kitchen

    b. be-in' (kitchen, [[do' (Sam, Ø)] CAUSE [BECOME baked' (cake)]]) (ibid.: (4.19a,b))

An 'argument-adjunct' preposition, on the other hand, "differs from argument-marking prepositions, in that the meaning of its argument is not derived from the logical structure of the verb, and from adjunct prepositions in that it does not take a logical structure as one of its arguments; rather it shares an argument with the logical structure of the verb, in this example, Paul" (ibid.: 160). The example of an 'argument-adjunct' provided by the authors is the following:

(15)a. Paul ran to the store[15]

    b. do' (Paul), [run' (Paul)]) & BECOME be-at' (store, Paul) (ibid.: (4.21c,c'))

As (15b) shows, there is less cohesion between the predicate conveyed by the verb and that conveyed by the preposition; both share the argument Paul, but they are represented as being coordinate predications in the logical structure.

6.b *Dowty's study of complements and adjuncts*

The second study of oblique constituents is by DOWTY (2003) who differentiates between complements, adjuncts and 'subcategorized adjuncts'. Section 2 has already provided Dowty's syntactic and semantic definitions of the first two PP types. As for subcategorized adjuncts, these are a kind of intermediate category which, according to Dowty, is justified by the non-grammaticality of the examples in (16b) and (17b):

(16)a. The campanile towers over the Berkeley campus (ibid.: (6a))

    b. *The campanile towers

(17)a He always treated me fairly (ibid.: (6b))

    b. *He always treated me

As (16) and (17) show, Dowty uses the term 'subcategorized adjunct' both for PPs and for bare adverbs. He then goes on to note that the same PPs can have different meanings with different verbs; for example, PPs introduced by *to* in English can have either locative or non-locative meanings as in:

(18)   Mary kicked the ball to the fence (ibid.: (8a))   locative *to*

(19)   Mary explained the memo to John (ibid.: (9a))   dative *to*

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[15] Obviously (15a) differs from the following sentence:
    (i)   Paul ran in the dark
which presents a different meaning and a different logical structure of the verb from those in (15).

On the basis of this kind of data he adopts a psycholinguistic perspective, proposing a single preliminary analysis of all instances of the same preposition that introduce adjunct PPs. In his words

> "the locative adjunct analysis of all occurrences of *to*, *from* and other locative prepositions is a PRELIMINARY ANALYSIS which serve language-learners as a semantic 'hint' .. to figuring out the idiosyncratic correct meaning of the complement analysis for the non-locative instances ..." (DOWTY 2003: 43).

He calls this a 'dual analysis', as the adjunct analysis is a preliminary step towards a complement analysis of non-locative PPs for language learners in cases such as (19). Therefore Dowty considers oblique constituents on a continuum which is psychologically and cognitively important, as it leads to acquisitional and communicative advantages in the interpretation of PPs.

6.c *Prandi's study*

In his first paper (2004) on the subject, Prandi also proposes a three-way distinction of PPs, although from a direction which differs from the two proposals above. In dividing the behaviour of prepositions between those "devoid of autonomous content" and those "possessing an independent, positive content" (PRANDI 2004: 256), he recognizes that in some cases "the behaviour of prepositions, .., does not mark the borderline between the core of the process and its periphery" (ibid.: 257). He identifies a "grey zone where the distinction between arguments and margins blurs, ..., in the presence of roles which cannot be clearly identified on the basis of the formal properties of their expression" (ibid.: 269). Prandi therefore proposes three kinds of prepositional roles; the first belongs to the 'functional core' of a sentence and it identifies an essential or argumental role, while the other two are marginal roles which can be further subdivided into 'inner' and 'outer' roles. Inner margins

> "though non-essential for shaping the core of the process, instrument, purpose, beneficiary ... do not provide the process with an outer background, but are located inside the process, and make a peculiar contribution to its profile" (ibid.: 272),

while outer margins "frame a closed process from the outside" (ibid.: 271) and include spatial, temporal or causal specifications. Based on the observation that

> "while the core of the process can be constructed by grammatical structures within the framework of a simple sentence, any marginal role can be incorporated into the simple sentence as well as specified outside it, in a textual dimension" (ibid.: 269).

Prandi proposes a diagnostic test to distinguish essential from marginal roles and, within the latter, inner from outer marginal roles. As a matter of fact, although we cannot distinguish the oblique argument in (20), we can do so in (21):

(20)   John lives in London. John lives. *It happens in London. (ibid.: (25))

(21)   John met Mary in London. John met Mary. It happened in London. (ibid.: (7))

The marginal role of the locative PP in (21) can be expressed outside the nuclear part of the sentence and can be made an argument of the predicate *happen*, while this is not possible in (20). However, this only works with PPs which are outer margins; the same kind of diagnostics cannot be applied to inner margins, as (22) shows[16]:

(22)   John cut the firewood. It happened *with an axe, *for John, *for cooking the meat, *with William

(23)   John cut the firewood. He did it with an axe, for John, for cooking the meat, with William (ibid.: (10))

With inner margins we need an anaphoric substitute such as 'do it' or 'do so' as in (23) "which safeguards the essential conceptual property of the antecedent process and its main articulation in a subject and a predicate ready to be extended" (ibid.: 273).

However, Prandi (2013, 2015) broadens his approach, proposing to analyse PPs in terms of their encoding properties[17]. There are two kinds of encoding, one relational and one punctual; the former formally encodes the grammatical relations, while the latter encodes the role of the PP 'in isolation', that is, in terms of its internal conceptual properties. In other words subjects, objects and indirect objects, being identified as grammatical relations are encoded according to the relational kind of encoding, while PPs with instrumental, manner or other conceptual roles are encoded according to the punctual kind of encoding. Nonetheless, the distinction between the two kinds of encoding does not correspond to the argument-adjunct distinction as there are prepositional arguments that are encoded according to the punctual kind.

For reasons of space we cannot discuss in greater depth the complex network of possibilities that prepositions determine when added to predicates. Nevertheless, it is important to underline that according to Prandi the distinction between arguments and adjuncts in principle does not allow for any gradation.

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[16] According to an anonymous reviewer (22) is not ungrammatical, it is only odd. Here we are simply reporting Prandi's intuitions.

[17] The idea of a different encoding for PPs is already present in his 2004 book, but there he maintains the inner-outer margin distinction.

6d. The common denominator in the semantic treatments of PPs

In the three studies presented above it is interesting to notice that although they all single out a three-way distinction[18], different aspects of this distinction emerge according to the specific perspectives they adopt and the kind of data they observe. This tells us that oblique behaviour is much more complex than expected and that the only generalization which can be drawn from this picture of PPs is one which identifies a continuum with, or gives a gradient interpretation of, the argument-adjunct distinction; the rather grey zone in the middle, however, is still a relatively unknown and little-experienced conceptual area. Such a continuum would position arguments and adjuncts at the two extremes with the argument-adjunct category in the middle.

Our proposal here is to concentrate on one conceptual area, that concerning the spatial location[19] of events, which, in DIK (1997; DIK, HENGEVELD *et al.* 1990), is divided into two layers by locating spatial orientation, source, path or direction in Level 1, and location in Level 2. Both are considered outside the nucleus, but again on the "borderline between arguments and satellites" (DIK 1997: 87), particularly Level 1 satellites. We will mainly draw upon data from a corpus of Italian in order to deal with utterances in situational contexts, rather than sentences only reliant on speakers' judgements.

7. PPS IN THE CORPUS

As our considerations above suggest, it is methodologically useful to analyse PPs in discourse rather than in single, often 'laboratory', sentences. The relation between adverbials and discourse structure has already been noted at least since CHAFE (1984), while it has been more recently studied by GOLDBERG & ACKERMAN (2001) and by CHAROLLES (2005).

Here we will consider data from a small corpus of semi-spontaneous spoken Italian with the aim of making some generalizations regarding the kind of PPs found. We are naturally aware that even corpus linguistics is limited in that it can only be concerned with the data found therein, thus excluding much other potential data. However, collecting data from discourse means having more reliable samples of language use which can always be integrated with other data from other corpora. Our aim in selecting locative PPs from the corpus is to check whether a two- or three-way distinction is useful in accounting for our data.

We will now proceed to describe the corpus and the syntactic and semantic typology of the locative PPs it contains. We will then consider the pragmatics of the phrases in the corpus and finally

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[18] Or a complex network of possibilities according to Prandi, who continues to clarify his conceptual framework in his more recent papers (2013, 2015). See also PEREK (2015) and MEREU (forthcoming).

[19] We are aware that there are quite various papers on the spatial location of events, but these are generally only concerned with semantics and do not discuss the interplay between syntax and semantics.

examine the prosody of the utterances in order to reveal interesting information structure properties regarding the data.

7.a *The corpus*

Data was drawn from the corpus created by BONVINO (2005) for her Ph.D. dissertation. This has already been used to conduct a number of studies concerning the relationship between syntax, pragmatics and prosody (BONVINO 2004; MEREU 2004, 2008, 2009; MEREU & TRECCI 2004). The corpus includes semi-spontaneous conversations and interviews between speakers from central Italy, in particular the Rome area.

In the corpus we collected 50 occurrences of locative PPs from nine dialogues of various length, amounting to a total of 98 minutes of recordings. The corpus is not very large, but in this paper the emphasis is on the syntax and semantics of the different types of locative PPs selected rather than providing a quantitative analysis of the data[20]. As for the semantic interface, the focus is on the kind of predicate which locative constituents are associated with, while, as far as the syntax is concerned, locative constituents are collected and classified on the basis of their positions, their adjacency to the predicate and the presence of more than one locative PP per utterance.

7.b *The typology of locative PPs*

At the syntax-semantics interface it is preferable to consider the typology of locative PPs in terms of VAN VALIN & LAPOLLA's (1997) distinction between argument, adjunct and 'argument-adjunct' PPs. As expected, among the 50 occurrences we found, the majority are instances of adjunct PPs as in (25), while some are instances of argument PPs (24). There are also, however, borderline cases, that is, locative phrases which are best considered as argument-adjunct PPs (26). The following examples show each type:

(24)   e prendeva posto <u>nel suo settore</u> come gli pareva insomma (argument PP)
             'and (he) took a seat in his area as he liked, in fact'
(25)   me la so' vista brutta <u>sulla Ci – sulla Roma Civitavecchia</u> (adjunct PP)
             'I had problems on the – on the Roma Civitavecchia (highway)'
(26)   sono riuscita a tornare indietro <u>sulla Cristoforo Colombo</u> (argument-adjunct PP)
             '(I) managed to turn back on the Cristoforo Colombo (highway)'

(26) has a PP which is ambiguous in that it can have the following two interpretations:

(26)a.   I managed to turn back (while I was) on the Cristoforo Colombo

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b. I managed to go back to the Cristoforo Colombo

although in the corpus it has the (a) reading[21]. In (26a) the PP is an adjunct indicating the location in which the event takes place; in (26b), on the contrary, the predicate *tornare indietro* includes locative information indicating the direction of the movement as specified in particular by the bare preposition *indietro*. The intermediate status of the PP holds for the interpretation in (26b) in that the direction, already specified by the bare preposition, is further expressed by giving the final destination of the movement back, indicated by the prepositional verb.

At the syntactic level we find both post-verbal (25) and initial adjuncts (27):

(27) però <u>dalla finestra di casa sua</u> mi pare si vedano proprio i palazzoni

'but from the window of his house it seems to me that (one can) indeed see the big buildings'

although the majority of arguments are post-verbal – as in (24).

In our dialogues the PPs we find in initial position which are not clear cases of adjunct PPs are locative constituents in existential presentative structures, that is, cases such as (28):

(28) <u>In questi sotterranei</u> c'erano le scenografie

'in these underground areas there were the stage sets'

We also found one instance of locative inversion[22]:

(29) e <u>su questa tavoletta</u> era eh stampato un numero

'and on this board was printed a number'

In cases such as (28), which have not been widely considered in the literature as far as the argument/adjunct distinction is concerned[23], the impression is that we are dealing with intermediate cases, thus again with argument-adjuncts, though PAYNE (1997: 123) considers these structures 'locative adjuncts'. In the case of the locative inversion in (29), on the other hand, the locative constituent is an argument selected by the predicate *stampato*.

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[21] The fact that we consider readings such as (26b) which do not correspond to the interpretation in the corpus means that we also account for potential data; we, therefore, refer to corpus linguistics in a broader sense.

[22] For more information on locative inversion see Bresnan (1994).

[23] See LA FAUCI & LOPORCARO (1997) and MEREU (2011, 2015) for some exceptions. MORO (1997), who studied these structures over a long period, was mainly concerned with their syntactic properties rather than their argument structure. More recent studies by BENTLEY (2013) deal with the definiteness effect, particularly in Italian.

As for the other positions exemplified in (9c,d) above, there is only one utterance with an adjunct PP between the predicate and the object:

(30)   si vede vedono <u>dai terrazzi</u> questo quest'altro

'one can see (they) see from the balconies this this other'

There are no cases, however, of PPs between the subject and the predicate.

Let us now consider the results obtained by applying PRANDI's (2004) tests with the *happen* predicate in order to distinguish argument PPs and adjunct or outer marginal PPs:

(24)'   *prendeva posto e questo succedeva <u>nel suo settore</u>

'*(he) took a seat and this happened in his area'

(25)'   ?me la so' vista brutta e questo è successo <u>sulla Ci – sulla Roma Civitavecchia</u>

'(I) had problems and this happened on the Roma Civitavecchia (highway)'

(26)'   (?)sono riuscita a tornare indietro e questo è successo <u>sulla Cristoforo Colombo</u>

'(I) managed to turn back and this happened on the Cristoforo Colombo (highway)'

(24)'- (26)' show that the results sounds rather unusual; while the test does not work with the argument PP in (24)' as suggested by PRANDI (2004), this should yield an acceptable complex utterance with an adjunct PP such as the one in (25). On the contrary (25)' does not sound completely appropriate if the PP is within the *happen* clause. This is probably due to the idiomatic predicate *me la so' vista brutta* or to the stative interpretation of the utterance which is in conflict with the *happen* construction. In the case of (26), we obtain a slightly more acceptable result, but only with one interpretation of the ambiguous utterance, that in which the PP is an adjunct. In addition the test yields negative results when we apply it to PPs in initial PPs, as in (27)':

(27)'   ??però mi pare si vedano proprio i palazzoni e questo mi pare succeda dalla finestra di casa sua

'but it seems to me (that one can) just see the big buildings and this it seems it happens from the window of his house'

(27)' might be considered a case of semantic incompatibility between the *happen* predicate[24] and the stative predicate in the first coordinate clause. This means that we cannot consider the test valid for all occurrences of non-argument or argument-adjunct locative PPs.

To summarize, we can say that locative PPs in our corpus tend to be: a) post-verbal, though with b) some cases of initial PPs, c) mostly adjuncts, but also d) borderline categories which are not only in post-verbal position.

7.c *Pragmatic and prosodic analysis of the data*

The most pressing issue now concerns the pragmatic roles the locative in initial and post-verbal position have in order for us to complete the analysis of the PPs in terms of their different positions. It is also important to discover the kind of prosodic marking of the different typology of PPs (whether argument or adjunct or argument-adjunct). In other words it is interesting to check: I) whether arguments are marked differently prosodically from adjuncts and argument-adjuncts, II) whether PPs are prosodically marked on the basis of their pragmatic role, that is, as instances of topic or focus[25]. The two questions are connected in that if the PPs are prosodically marked on the basis of their pragmatic roles, the argument versus adjunct difference should not be relevant. We will therefore now proceed to show the intonation contours of the utterances which represent single instances of each type present in our corpus.

7.c.i. *Prosodic analysis of the PPs*

In showing the intonation contours of the utterances with the PPs, we will only take into account the height of the fundamental frequency or f_0, in an attempt to provide generalizations about the prosody of locatives on the basis of whether there is a constant prosodic behaviour in relation to the different syntactic, semantic and pragmatic PP types. We will check how the locative is prosodically marked in each utterance. Generally, the intonation contour in Italian follows the f_0 declination, which shows a descending curve. If the declarative utterance is a non-final expression, there can be a final rising of the curve at the right boundary signalling that the speaker is continuing to speak. Prosodic prominence is generally marked by a peak-shaped contour which signals a pitch accent; this is usually located on the tonic syllable of the head of a constituent but, in case of a complex construction, it can also be located at the right boundary of the complex constituent. Praat software was used to represent the prosodic behaviour of the utterances.

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[24] (27)' would be slightly better if we used the stative predicate 'sia possibile' (be possible) instead of *happen*, but the utterance would still be somewhat odd.

[25] As an anonymous reviewer points out, there is no necessary correlation between the information structure properties of the sentence and the syntactic-semantic nature of its oblique constituents. However we think it is important to observe the ways in which obliques behave in terms of information structure and of prosodic properties. Both contribute to show that obliques take part in the Principle of pragmatic prominence shown in section 8 in the text. To our knowledge there are very few studies on the pragmatic properties of obliques. See MEREU (2016) for a proposal on the syntax-prosody-pragmatics interface of obliques in Italian.

It has recently been hypothesized that prosodic prominence is related to information structure, but in a way that is different to what earlier studies stated. In these studies it was believed that only focus was prosodically marked by an accent, while more recently[26] it has been shown that prosodic prominence is not limited to the Comment part of the utterance. Let us now see what kind of prosodic marking is associated with the utterances containing the locative constituents in the corpus. For all the data considered here, the utterance is shown above the figure containing the melodic curve and its waveform.

We shall begin with locatives in post-verbal position considering the intonation contour of an utterance such as (24) with an argument PP, here shown as (31):

(31)   e prendeva posto <u>nel suo settore</u> come gli pareva insomma

         'and (he) took a seat in his area as he liked, in fact'
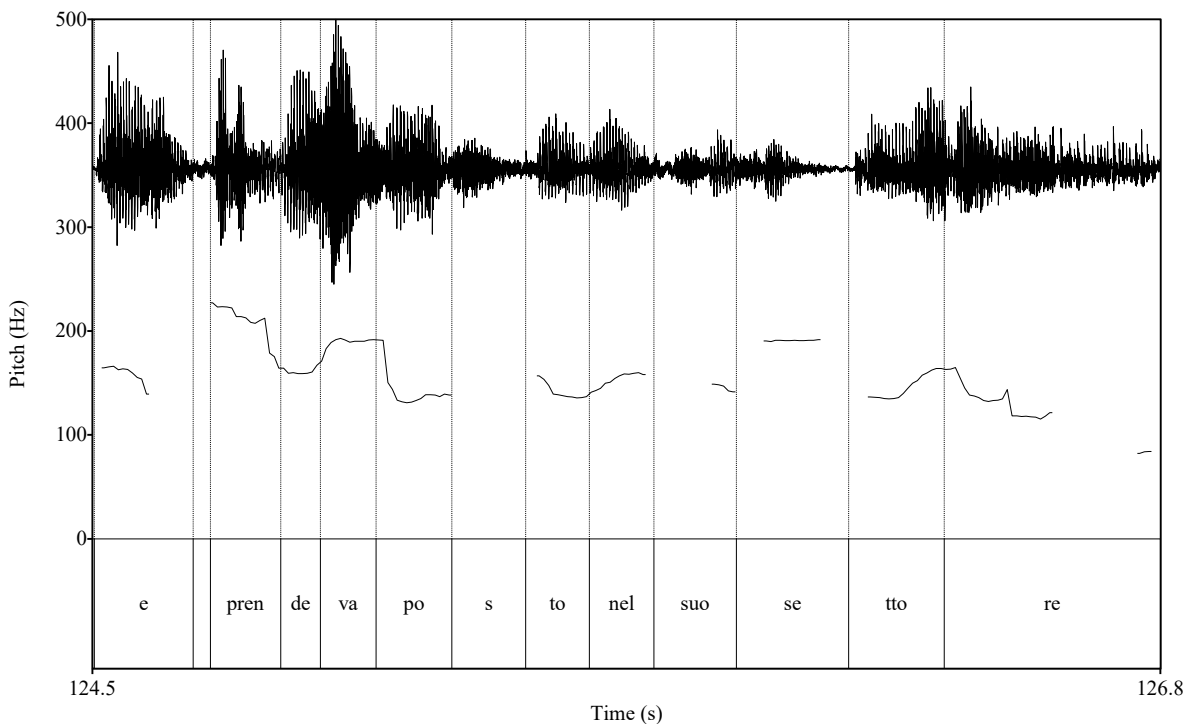

We notice that there is only a minimal rise on the tonic syllable of the location represented by the PP; in fact there are two pitch accents with a higher and a lower value within the VP[27].

Now, let us look at the tonal behaviour of a post-verbal adjunct PP:

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[26] See the Introduction in MEREU (2009) for references to the recent literature on the prosody-syntax-pragmatics interface.

[27] When the contour shows abrupt shifts from the line with sudden very high or very low hertz values, as on the first syllable of *settore* (rather than a gradual lowering or rising), it means that the quality of the recording might be bad at this point: the software has not been able to capture the sound segment, perhaps because of disturbance.

(32)   Era l'una e mezza <u>in un paese completamente vuoto</u>

        'It was one thirty in a totally empty village'
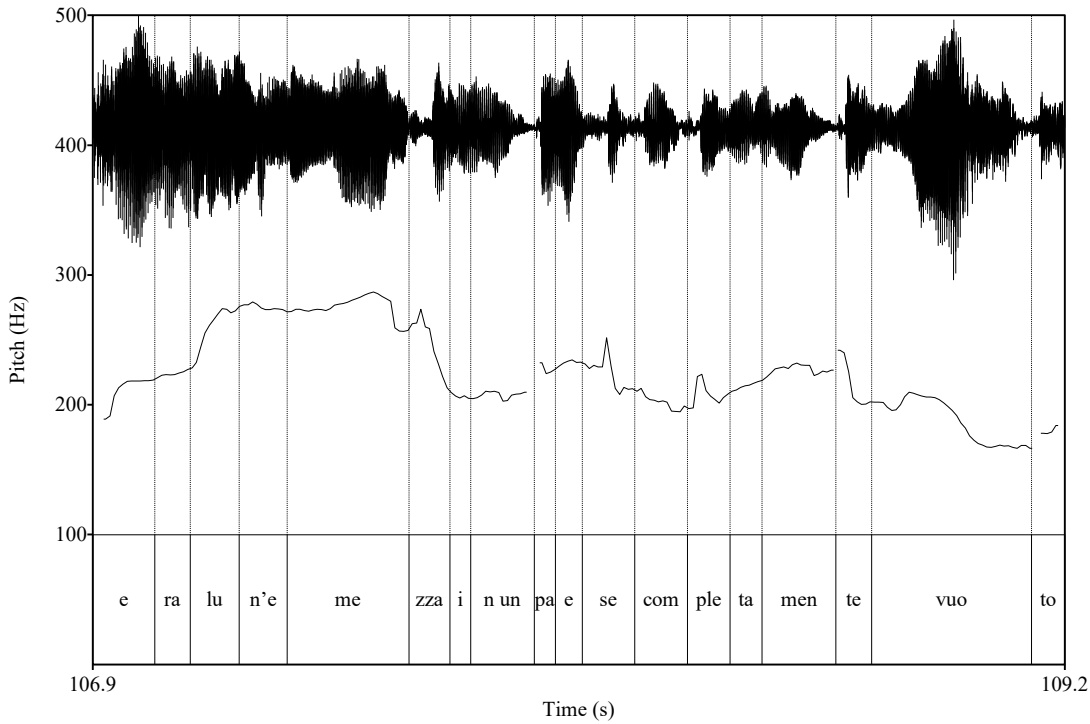
Again in (32) there is no pitch accent on any of the elements in the locative PP, but there is a peak on the nominal predicate, with two almost equally high values; prosodic salience is thus placed on this part of the utterance, followed by a gradual descending of the melodic contour[28].

As for the post-verbal PP in (26), here (33), there is again no pitch accent within the PP associated with it:

(33)   sono riuscita a tornare indietro <u>sulla Cristoforo Colombo</u>

        '(I) managed to turn back to the Cristoforo Colombo (highway)'

---

[28] After the pitch accent the curve continues to descend apart from at two points which again indicate dirty sound segments. The only reliable rising of the curve in (32) is given by the high value on the adverb *completamente*; this is typical of bare adverbs which usually bear locally prominent information. The rising at the end of the sequence indicates that the sentence is non-final, that is, that the speaker continues speaking after it.
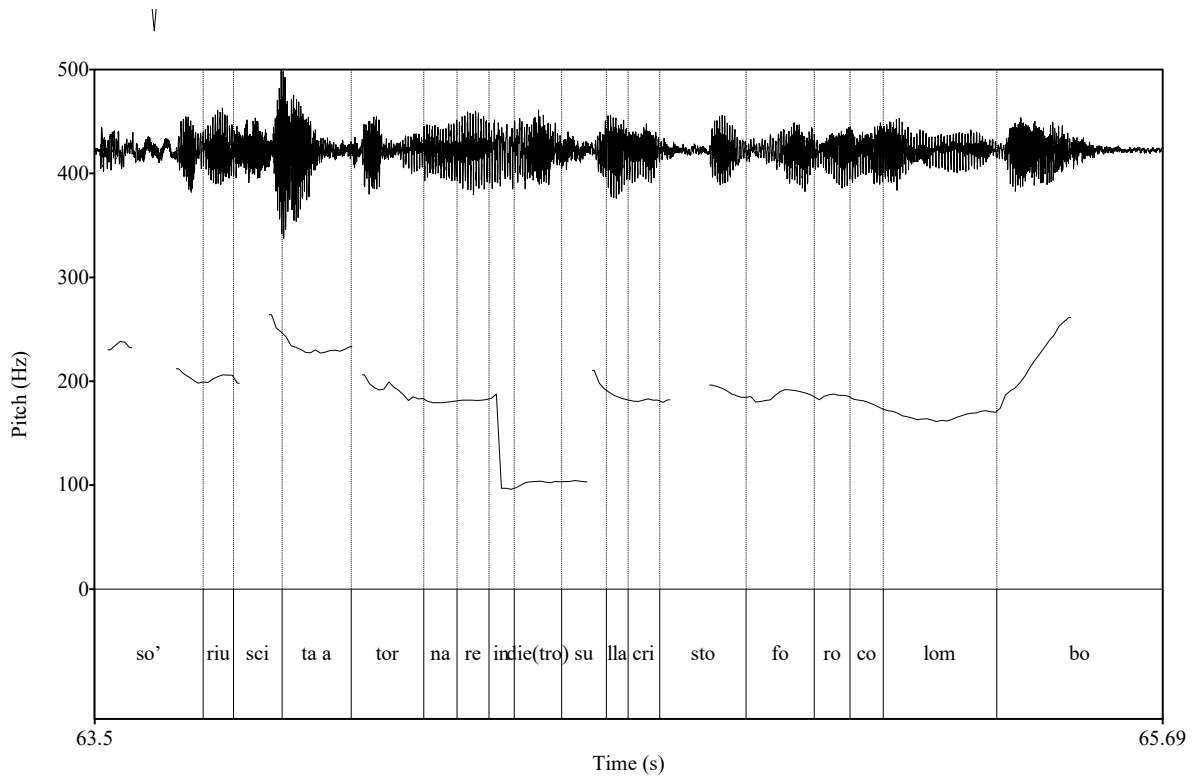
There is only a final rising at the right boundary, an indication of continuation by the speaker.

The different kinds of locatives in initial position will now be examined beginning with the argument-adjunct PP in (28), here (34):

(34)   in questi sotterranei c'erano le scenografie
        'in these underground areas there were the stage sets'
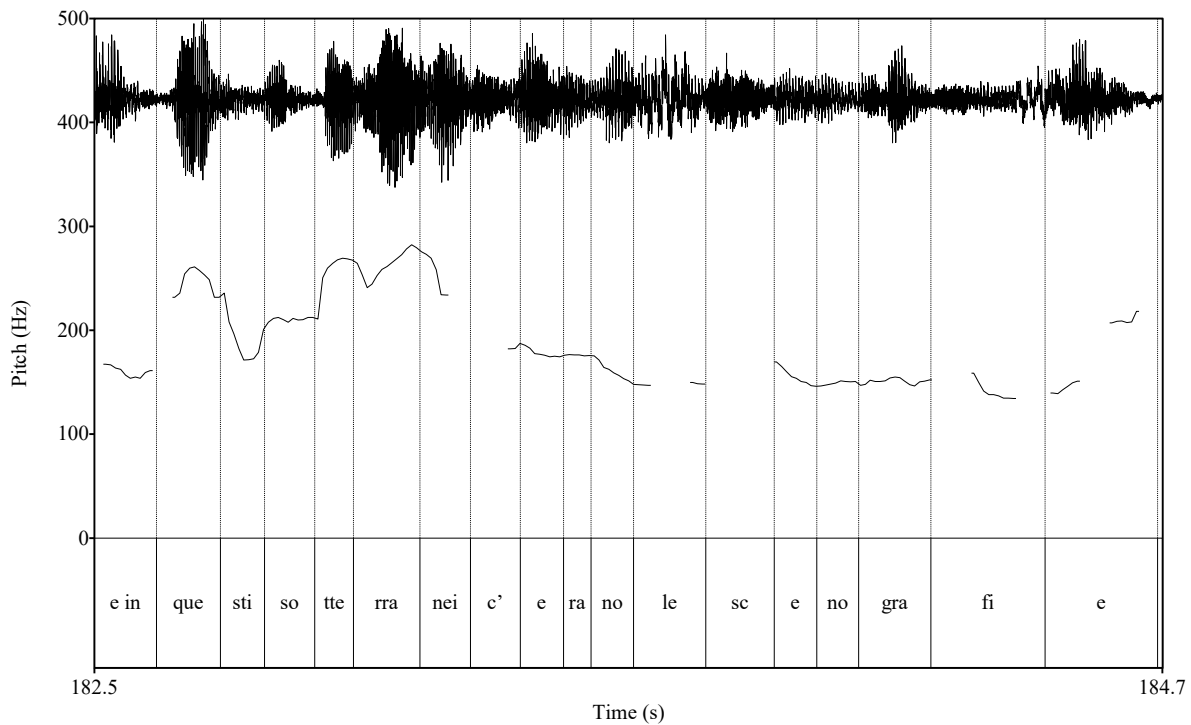
In (34) there are two peaks, one on the tonic syllable of the demonstrative adjective and the other on the tonic syllable of the nominal head of the PP; we therefore have at least two pitch accents within the locative constituent, as often happens with heavy constituents.

The same tonal pattern occurs in the initial locative adjunct of (27), whose intonation pattern is (35):

(35)   però <u>dalla finestra di casa sua</u> mi pare si vedano proprio i palazzoni

        'but from the window of his house it seems to me that (one can) indeed see the big
        buildings'
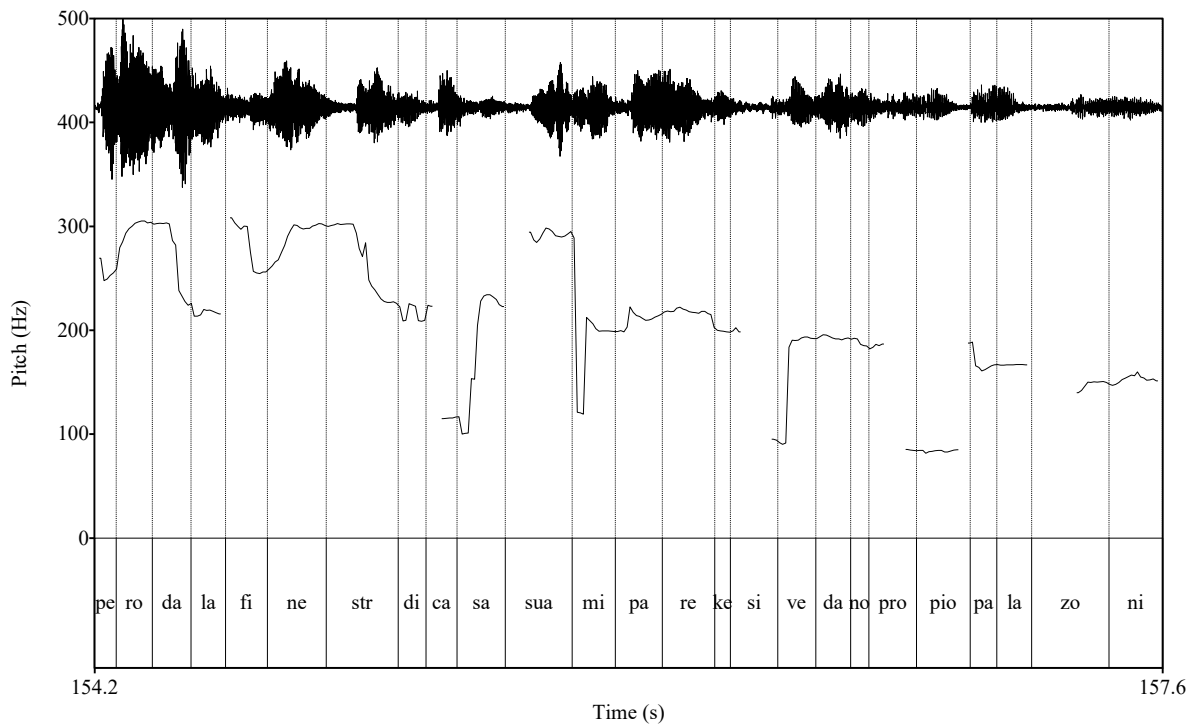
Unfortunately (35) does not have a very reliable intonation pattern because of the various abrupt tonal events in various parts of the utterance, but we can still check at least the tonal behaviour of the locative constituent. Here we have a complex and recursive PP with a first peak on the nominal head of the first PP and then another at the right boundary of the genitive PP.

The tonal pattern for the locative inversion in (29), which is, as we said, an instance of an argument PP, is shown in (36):

(36)   e <u>su questa tavoletta</u> era eh stampato un numero
       'and on this board was printed a number'
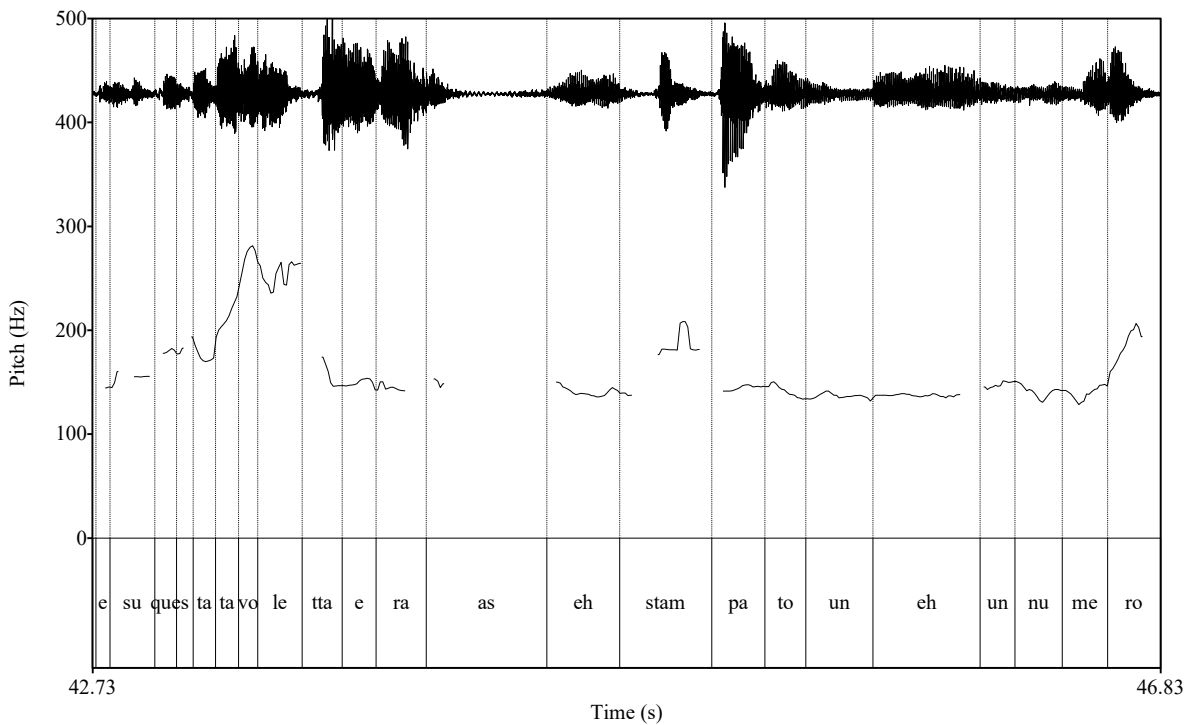
In (36) we have an initial lower pitch on the demonstrative adjective and a higher one in the nominal head of the PP, but no pitch[29] on the rest of the utterance, although there is a final rise signalling the non-final status of this utterance.

It thus seems that only preverbal PPs can be marked by one or more pitch accents.

7.c.ii *Pragmatic roles of the PPs*

Having noted that the locative PPs have prosodic prominence only when they occur at the beginning of the utterance no matter which semantic type they belong to, it is important to investigate whether or not this prominence is always associated with the same pragmatic role. Let us consider, therefore, how pitch accents correlate with topic and focus functions in the following scheme:

(37)

	Topic	Focus
Post-verbal PP	(31), (33)	(32)
Initial PP	(34), (36)	(35)

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[29] See note 19 for the sudden rise on the predicate.

As (37) shows, initial PPs can be either topic or focus constituents, that is, they are either left-dislocated topicalized information or instances of fronted focus. In previous works on information structure (MEREU & TRECCI 2004; MEREU 2004, 2008, 2009) it has been demonstrated that NP topics are prosodically marked showing pitch accent only when they are left topics in initial position and that these do not prosodically differ from left focuses, in that they are both characterized as pragmatically prominent information. Post-verbal PPs can also be either topic or focus, but, as we saw, they are not generally characterized by prosodic prominence unless they signal narrow or contrastive focus.

To explain these results we need to present very briefly some hypotheses on how information structure works.

8. UNIVERSAL PRINCIPLES OF INFORMATION STRUCTURE

In MEREU (2004, 2009) it was shown that there are essentially two pragmatic principles of information structure that affect languages and interact with sentence structure:

(38)   Principle of progression from given to new information:

        "More indefinite/discontinuous/new information follows more definite/continuous/old information" (GIVÓN 1984: 207)

(39)   Principle of pragmatic prominence:

        Pragmatically prominent information precedes pragmatically non-prominent information (MEREU 2004, 2009)

(38) is the principle that configurational languages apply; in these languages syntactic, semantic and pragmatic roles overlap so that subjects tend to be agents and topics and to precede objects which tend to be themes or patients and focus or new information. (39), which is similar to MITHUN's (1987) Newsworthy Principle, is the principle that non-configurational languages obey. In these languages, syntactic, semantic and pragmatic roles generally do not overlap, but whatever is pragmatically prominent or salient information comes before everything that is pragmatically non-salient. Pragmatically salient information is what the speaker considers the relevant part of his/her utterance, and can be either a topic or a focus; the concept is also similar to GIVÓN's (1988) notion of 'task urgency' and to his principle: "Attend first to the more urgent task" (252). We think that the principle in (39) also applies to syntactically-marked constructions in Italian when dislocation or fronting concerns the left periphery or initial part of the sentence.

9. TO RETURN TO THE ARGUMENT VS. ADJUNCT DISTINCTION

Our data reveal that there is no way of dealing with locative PPs separately on the basis of their syntactic and semantic behaviour. Syntactic tests such as the occurrence of the PP in different

positions, and also Prandi's test regarding the possibility of specifying adjunct or marginal roles outside the sentence structure (the *happen* test), do not allow us to make a clear distinction between argument and adjunct PPs; as we have seen, this conclusion also holds for intermediate cases which, following VAN VALIN & LAPOLLA (1997), we have called argument-adjunct PPs.

If we proceed to analyse the prosodic marking of the three different semantic PP types, we see that there are pitch accents only when our PPs are in initial positions no matter which type they belong to, whereas no pitch accent is associated with post-verbal PPs. Finally, we see that there is no fixed association between the syntactic position and the pragmatic role of the PPs in question. There are both topics and focuses in initial, and, of course, in post-verbal position too. The only constant behaviour discovered regards the relationship between the prosodic marking and the syntactic positions of the pragmatic notions.

This can be explained in the following way: a) both left topics and focuses are pragmatically prominent, and b) left topics are pragmatically different from right dislocated topics in that only the former, no matter whether they are also emphatic or contrastive, are pragmatically and prosodically prominent. All these factors do not only concern PPs as they hold true for all types of constituents in initial position (MEREU 2009).

10. CONCLUSIONS

In this paper we have discussed the syntactic and semantic behaviour of one class of PPs, that is, locative phrases. Data from real language use in Italian have shown that we can distinguish among three types of locative PPs semantically: arguments, adjuncts and argument-adjuncts, as was previously proposed by VAN VALIN & LAPOLLA (1997). However, the syntax-semantics interface does not allow us to single out any specific behaviour distinguishing one type from the other. We then proceeded to investigate the prosodic and pragmatic characterization of some utterances with locative PPs in order to show that the various syntactic positions of PPs are due to different meanings in information structure. Once again, the distinction between argument and adjunct PPs has not been confirmed. If our hypotheses are correct, it raises the question as to whether it is still worth maintaining a distinction between adjuncts and arguments in syntax. In other words, although the theory of valency has been important in fixing the number of participants in syntax, and in distinguishing a core from a periphery in sentence structure, perhaps the theory should be reformulated assuming a gradient distinction between argument and adjunct PPs, rather than a distinction in valency between two-argument and three-argument predicates.

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