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One meaning and the other: a corpus-based study of the polysemy of *altro* in Italian

Fabio Del Prete, Fabio Montermini
CLLE (CNRS & Université de Toulouse 2)

Abstract. This chapter proposes a corpus-based investigation and a semantic analysis of the Italian word *altro* ‘other’, focusing on two values of *altro* identified in the previous literature: difference (D-interpretation) and increment along a scale (M-interpretation). In syntax-based studies, focused on cardinal noun phrases, the two values have been related to distinct syntactic positions occupied by *altro* within the NP’s extended projection (Cinque 2015, Kayne 2021): a lower position, associated with the D-interpretation (*altro N* = ‘other kind of N’), and a higher position, associated with the M-interpretation (*altri n N* = ‘*n* more tokens of N’). Conversely, discourse-based studies assume that the two values are due to a lexical ambiguity of *altro*, with the D-interpretation being triggered by a discourse relation of contrast and the M-interpretation by an additive relation (Gianollo and Mauri 2020). We examine the distribution of the two values in the CORIS corpus of contemporary Italian (Rossini Favretti et al. 2002) and consider the question of whether they are equally basic interpretations or one of them is derivable from the other. The analysis we propose relies on the idea that the semantic core of *altro* is the relation of non-identity. The D-interpretation and M-interpretation result from the interaction between this semantic core and features of the larger discourse context, with additive and contrastive features playing a major role. Non-identity is introduced in the semantic representation of the sentence irrespective of the syntactic position of *altro*, while discourse context—including lexical properties of the noun—determines at what ontological level (whether type or token) non-identity is evaluated. The analysis is cast in the framework of *Segmented Discourse Representation Theory* (SDRT; Asher and Lascarides 2003), which allows a modular representation of the separate contributions of *altro* and discourse structure.

In realtà il mio sogno è sempre stato quello di saper ballare bene. [...] Saper ballare! E invece alla fine mi riduco sempre a guardare, che è anche bello, però ... è tutta un'altra cosa.
(‘Actually my dream has always been to be able to dance well. To be able to dance! But in the end I always end up looking, which may even be nice, still ... it is a completely different thing.’)
[Nanni Moretti, *Caro diario*]

Mi piaccion le fiabe, raccontane altre!
(‘I like stories, tell me more!’)
[Francesco Guccini, *Il vecchio e il bambino*]

1. Introduction

This chapter proposes a corpus-based investigation and a semantic analysis of *altro* (‘other’) in contemporary Italian. We will focus on two interpretations of *altro* identified in previous studies: (i) difference between two objects (“D-interpretation”) and (ii) increment of some variable along a scale (“M-interpretation”). These are exemplified by utterances of (1) made in the contexts described below:¹

¹ In almost all its uses (see Section 2) the word *altro* is inflected both for gender and number, like adjectives and some determiners, taking the following endings: *-o* (M.SG.), *-a* (F.SG.), *-i* (M.PL.), *-e* (F.PL.). In this paper we use *altro* as a generic label encompassing all these forms.

- (1) Vorrei un'altra vita.
 want-1SG.PRES.COND an-other-F.SG life-F.SG
 'I would like to have another life.'

In one context, by uttering (1) the speaker expresses their wish that they had a *different* kind of life than their actual one (D-interpretation). In a different context, the speaker is a video-game player who has run out of lives and, by uttering (1), they express their wish to have one *more* life (M-interpretation).

These two interpretations of *altro* have been related to two distinctions:

(NI) *Two kinds of non-identity*

(NI1) x and y are non-identical *qua* individuals, namely, x and y are *numerically different* individuals but belong to the same relevant type;

(NI2) x and y differ in type, and not just *qua* individuals, namely, x and y are *qualitatively different* individuals.²

(DR) *Two kinds of discourse relations*

(DR1) a relation characterising *additive contexts*, by which a discourse item x is added to an item y which is in some sense similar to x ;

(DR2) a relation characterising *contrastive contexts*, by which a predication about x is contrasted to a parallel predication about y , with one predication being asserted and the other negated.

Syntax-based studies, relying on (NI), have proposed that the M-interpretation is related to non-identity between tokens of the same type, as in (NI1) (e.g., 'I would like to have one more life, i.e., one only *numerically* different from my previous lives'), whereas the D-interpretation is related to non-identity between types, as in (NI2) (e.g., 'I wish I had a *qualitatively* different life from my actual life') (Cinque 2015, Kayne 2021). Discourse-based studies, relying on (DR), have argued that the M-interpretation is triggered by additive discourse relations, as in (DR1) (e.g., 'I've already had three lives in this game and I would like to have *yet another* life'), whereas the D-interpretation is triggered by contrastive relations, as in (DR2) (e.g., 'I wish I had another life, *instead of* my actual one') (Gianollo and Mauri 2020).

We will show that (NI) and (DR) operate orthogonally with respect to the D- and M-interpretation. On the one hand, additive contexts do not necessarily involve multiple tokens of the same type but may involve qualitatively different objects. On the other hand, contrastive contexts are possible not only with qualitatively different items but also with numerically different items of the same type. We will thus propose that the D- and M-interpretation are best viewed as surface descriptive labels, while the underlying semantic factors *type/token* and *contrastive/additive* interact in complex ways yielding some natural combinations: D most

² The distinction in (NI) is obviously based on a distinction between two kinds of identity:

- (a) *absolute identity*: for two objects x, y of a certain type T , x is said to be the same (object) as y *tout court*;
 (b) *relative identity*: x is said to be *the same F* as y , for a certain sort F (Geach 1967, Perry 1970).

Gianollo and Mauri (2020: 131) relate negation of absolute identity and negation of relative identity to Tekavčić's (1972) notions of *alietà* 'aliety' (non-identity at the level of individuals, e.g., *un altro, non Marco* 'another one, not Marco') and *diversità* 'difference' (non-identity at the level of properties, e.g., *Marco è diverso da Paolo* 'Marco is different from Paolo'), respectively.

naturally applies to cases in which a contrast between types is expressed, whereas M most naturally applies to cases in which a token of a property is added to another token of the same property. In discourse terms, ‘most naturally’ means ‘more frequently’ and ‘as a default interpretation’ (in the lack of a special context triggering a different interpretation).

The structure of the paper is as follows. In Section 2 we consider a number of syntactic contexts in which *altro* can occur and for each context we check what interpretations of *altro* are available. Section 3 describes the D- and M-interpretation in depth and tackles the question of the relation between the two—is one of them a more basic value, with the other being derived from it via some general mechanism? Or are they equally basic? Or, yet again, are they both derived from a common core? We show that *altro* is relational and behaves anaphorically across the two interpretations and we propose that these are generated from the same semantic core. Section 4 presents the results of an empirical study based on the CORIS corpus (Rossini Favretti et al. 2002), in which 250 occurrences of *altro* were annotated by means of four semantic labels: D (for *D-interpretation*), M (for *M-interpretation*), TY (for *type*) and TO (for *token*). Section 5 presents a formal analysis of our data in the SDRT framework (Asher & Lascarides 2003). Section 6 presents the conclusions and draws some consequences of our study bearing on the relation between logical meanings and discourse structure.

2. The syntactic and semantic status of *altro*

Altro can occur in a variety of syntactic contexts, showing a diversified grammatical behaviour. Dictionaries and grammars generally classify *altro* as an indefinite adjective or pronoun. However, a detailed study of the behaviour of this word reveals a more complex situation: in some contexts *altro* appears to behave as a contentful lexeme, an adjective or noun, in others it behaves more like a functional word. In 2.1 we consider adjectival uses, where *altro* functions as a noun modifier inside the NP or as a predicate in a post-copular position. In 2.2 we consider nominal uses, where *altro* is used as a noun in a generic sentence. In 2.3 we consider pronominal uses, where *altro* occurs inside a DP with no overt nominal (e.g., *ogni altro* ‘everyone else’, or just *altro—non voglio altro* ‘I don’t want anything else’) or following a *WH*-word (e.g., *chi altro* ‘who else’). Finally, in 2.4 we consider determiner-like uses in definite, indefinite and quantificational DPs: *altro* following a determiner inside a DP (e.g., *ogni altro studente* ‘every other student’). We track the availability of the D- and M-interpretation and examine whether there is any correlation between the syntactic structure and the semantic interpretation.

2.1 Adjectival uses

The word *altro* is commonly used in adnominal position. For the most common adnominal occurrences, in which it appears before the noun—e.g., *Vorrei un’altra vita* (‘I would like to have another life’) or *Vorrei altre opinioni* (‘I would like to have other opinions on this’)—, one might think that *altro* works as a determiner there. However, there are adnominal uses unambiguously showing that *altro* can work as a true adjective. These include the following:

- (U1) contexts in which *altro* occurs postnominally, and possibly after a copula, in a predicative position;
- (U2) contexts in which *altro* is coordinated with an adjective, where the coordinated phrase [altro e [_{Adj} α]] can occur either (U2-a) postnominally or (U2-b) prenominally.

The postnominal position (the unmarked position for adjectives in Italian) and the coordination with an adjective both rule out the possibility of a determiner-like status of *altro* on syntactic grounds, since no determiner can appear in either of those contexts.

Examples of (U1) are in (2)-(4):

- (2) conoscere la grammatica non è una cosa altra dal parlare, scrivere, leggere
‘knowing grammar is not a different thing from speaking, writing, reading’
- (3) chi viene ucciso è una persona altra rispetto a quella che viene arrestata
‘who is executed is a different person from the one who was arrested’
- (4) i suoni che si sentono sono altri
‘the sounds that can be heard are different’

In these examples *altro* arguably expresses the property ‘being qualitatively different’ (cf. Cinque’s [2015] TYPE meaning).

Examples of (U2-a) are in (5)-(7):

- (5) le famose “immagini” da cui nascono i libri di Calvino [...] nascono nel momento in cui ci si proietta verso il fuori, verso quella presenza altra e femminile per cui tutto viene creato.
‘the well-known images whence originate Calvino’s stories spring in the moment in which we project ourselves outside, to that different and feminine presence by which all is created.’
- (6) Che cosa si trova dall’altra parte del mare? Può darsi che il giovane Theodore, che giunge praticamente dal nulla e che nessuno conosce, sia il frutto di un mondo altro e diverso?
‘What is there on the other side of the sea? Maybe the young Theodore, who comes from nowhere and whom nobody knows, is the product of a qualitatively different world?’
- (7) Lo spirito di fratellanza è una cosa altra e diversa e si deve esprimere in altri modi.^{3,4}
‘The spirit of brotherhood is something other and different, which has to be expressed in different ways.’

Again, *altro* in these contexts appears to express the property of being qualitatively different. Notice that in (6) and (7) *altro* is (somehow redundantly) coordinated with the adjective *diverso* (‘different’), which would seem to reinforce the meaning already displayed by *altro* in isolation, or to indicate without any possible ambiguity that the D-interpretation is the intended one.

Examples of (U2-b) are in (8)-(11), of which (9) and (11) feature the same coordination [*altro e diverso*] seen above, but occurring prenominal in this case:⁵

- (8) I napoletani sono fantastici, mancano sempre il gol per un pelo, e si disperano grandiosamente, convinti che quella sfortuna si ammucchi sulle infinite altre e millenarie [sfortune] che si abbattono su quel popolo.
‘Neapolitans are wonderful, they always barely miss the goal and fall in great despair, in the firm belief that that misfortune is being added to the innumerable other millennial ones that have been hitting their people.’

³ <https://www.laprovinciacr.it/news/cronaca/148246/d-avossa-no-a-un-integralismo-superato-dalla-storia.html>

⁴ Again, the postnominal position of the coordination [*altro e* [Adj α]] in (7), (8) and (9) rules out the possibility to interpret *altro* as a determiner in these contexts, while *altro* intuitively is expressing qualitative difference there.

⁵ When occurring in prenominal position, the coordination [*altro e diverso*] seems to be characteristic of bureaucratic / juridical texts.

- (9) può accadere che nel corso di un'intercettazione si acquisiscano elementi rilevanti per un altro e diverso reato.⁶
'it can so happen that during a wiretapping one acquires evidence of another, different crime.'
- (10) Le attese sembrano quindi destinate a spostarsi verso il mese di febbraio, anche se il *se* è d'obbligo, visto che il concistoro lo decide il Papa e questi potrebbe anche ritenere opportune altre e successive date.
'Expectations seemingly are going to shift to the month of February, although caution is required, since the consistory is called by the Pope, who might prefer to choose other and successive dates.'
- (11) La costituzione definisce i comuni quali "enti autonomi nell'ambito dei principî fissati da leggi generali della repubblica [...]" e anche, secondo l'altro e diverso significato che le medesime parole hanno nel nostro ordinamento amministrativo, quali "circoscrizioni di decentramento statale e regionale".⁷
'The constitution defines a commune as "an autonomous entity within the scope of the principles established by the Republic's general laws" but also, according to the other and different meaning that the same word has in our administrative status, as "a district of national and regional decentralization".'

We remark that *altro* is interpreted incrementally in (8) and (9): in (8) the misfortune deictically referred to is added to the innumerable more misfortunes that stroke in the past against Neapolitans, in (9) the acquired evidence reveals one *more* crime in addition to the one under investigation (with the adjective *diverso* qualifying the new crime as being different from the previous one). On the other hand, in (10) and (11) *altro* is interpreted alternatively: in (10) it indicates some alternative-to-February date the Pope might consider (with the adjective *successive* qualifying the alternative date as being temporally posterior to February), in (11) it indicates the second term in the pair of the two meanings of the expression being defined (and *diverso* qualifies this term as different from the first term in that pair).⁸

Looking at the (U2-b) contexts in (8)-(11), it so appears that, even if the coordination [*altro e* [_{Adj} α]] provides syntactic evidence for the adjectival nature of *altro*, still we see more abstract meanings emerge for *altro* when this coordination occurs in prenominal position than when it occurs in postnominal position.

2.2 Nominal uses

In a less common use *altro* works as a noun. This use is especially typical of philosophical and religious texts, with the typical contexts being generic sentences in which *altro* is the nominal head of a singular definite NP (with a meaning which could be rendered as 'the other than the self'). It can also appear as a plural definite NP (referring to the other people in general), and in this case it belongs to a more colloquial register (*non bisogna far del male agli altri* 'one shouldn't hurt other people').

Examples of this use are in (12) and (13):

⁶ "Le indagini preliminari della polizia giudiziaria e del pubblico ministero", Grilli Luigi.

⁷ [https://www.treccani.it/enciclopedia/comune_res-7f197f2a-87e5-11dc-8e9d-0016357eee51_\(Enciclopedia-Italiana\)/](https://www.treccani.it/enciclopedia/comune_res-7f197f2a-87e5-11dc-8e9d-0016357eee51_(Enciclopedia-Italiana)/)

⁸ The intuitive interpretation of (10) and (11) suggests that one can have a numerical increment without necessarily having a qualitative difference between the new term and previously introduced terms (e.g., one could acquire evidence of a new crime of exactly the same type as the crime that was previously being investigated). This would seem to provide evidence of an independence between the D-interpretation and the M-interpretation.

- (12) La comunicazione è quindi sempre in qualche misura, un riflesso del mio atteggiamento verso quel preciso altro o anche dell'altro in generale; è un concretizzarsi del mio modo di collocare l'altro nel mio progetto di vita
 'Communication is always, to some extent, a reflex of my attitude toward that specific other or toward the other in general; it is a manifestation of the way I position the other in my life project.'
- (13) Come e cosa si comunica in una società pluralista, dove il famoso altro - sia esso una persona, una comunità, un popolo, una religione, una civiltà - si presenta con un volto diverso e con un quadro di riferimento diversificato?⁹
 'How and what do we communicate in a pluralistic society, in which the famous other - be it a person, a community, a population, a religion, a civilization - presents itself with a different face and a diversified frame of reference?'

The nominal uses of *altro*, along with the (postnominal) adjectival uses reviewed in section 2.1, provide evidence that *altro* can behave as a contentful, semantically-loaded, and even referential, lexeme, endowed with a conventionalized lexical meaning; in the nominal uses, this meaning coincides with the concept 'individual distinct from the self'.

In the following sections we consider uses of *altro* that look more functional in nature.

2.3 Pronominal uses

Much more frequent are the pronominal uses of *altro*. These are observed in a number of contexts, which include the following:

- (U3) contexts in which *altro* occurs after a determiner inside a NP that has no overt noun;
 (U4) contexts in which *altro* occupies an argument position of some predicate by itself (or coordinated with full NPs);
 (U5) contexts in which *altro* occurs after a WH-pronoun inside a complex WH-expression with no overt noun.

Examples of (U3) are in (14)-(15), while (U4) is exemplified in (16)-(17) and (U5) in (18)-(22):

- **(U3) contexts:**

- (14) Nietzsche è forse il filosofo che più di ogni altro è riuscito a mettere in luce l'alterità tra le virtù aristocratiche fondate sulla volontà di potenza
 'Nietzsche is perhaps the philosopher who managed to shed light on alterity among the aristocratic virtues based on the will to power more than anyone else'
- (15) Non abbiamo notato nessun altro.
 'We haven't noticed anybody else.'

In (14) *altro* is naturally understood as anaphoric to the noun *filosofo*; accordingly, a natural interpretation of the sentence is that Nietzsche managed to shed light on alterity more than any other philosopher. In (15) *altro* is anaphoric to some nominal expression salient from previous discourse; for example, if we have previously mentioned some talented musicians whom we noticed, then the sentence is interpreted as 'we haven't noticed any other talented musician'.

⁹ <http://webcache.googleusercontent.com/search?q=cache:FmrC6ykQ5aIJ:net-one.org/notizie/approfondimenti/varie/39-il-paradigma-dellunita.html+&cd=38&hl=it&ct=clnk&gl=fr>

- **(U4) contexts:**

- (16) ho pensato ad altro.
'I thought about other things.'
- (17) si deve avere riguardo alla dimensione dell'impresa, al tipo di organizzazione tecnico produttiva, alla natura e all'importanza del lavoro svolto dal lavoratore detenuto, alla durata prevedibile della carcerazione, alla possibilità di sostituzione, e *altro*.
'one has to consider the size of the enterprise, the type of technical and productive organization, the nature and the importance of the detainee's work, the expected duration of imprisonment, the possibility of replacement, and other.'

In (16) *altro* is interpreted anaphorically to some previously mentioned entity *E* that can be thought about and the sentence is understood as saying that I thought about things that are distinct from *E*, hence out-of-the-blue the sentence receives the D-interpretation. In (17) *altro* is anaphoric to each of the preceding DPs filling the object argument position of *avere riguardo a x* ('to consider *x*') and is interpreted as generically referring to entities that are distinct from those named by those DPs. Since the former entities are added to the latter in the role of object argument of *avere riguardo a*, the sentence receives the M-interpretation (as evidenced by the possibility to translate *altro* as 'more' in this context).

- **(U5) contexts:**

- (18) chi altro potrebbe aiutarti se non io?
'who else might help you if not me?'
- (19) Non so quale altra usare.
'I don't know what else to use.'
- (20) sei già stato a Milano e Roma, dove altro vuoi andare?
'you have already been to Milan and Rome, where else would you like to go?'
- (21) quanto altro latte ti serve?
'how much more milk do you need?'
- (22) cos'altro vuoi per colazione?
'what else do you want for breakfast?'

In each of (18)-(22) *altro* is anaphoric either to expressions occurring in the sentence—*io* in (18) (hence, *chi altro* = 'which person distinct from me'), 'Milano' and 'Roma' in (20) (hence, *dove altro* = 'which place distinct from Milan and Rome')—or to discursively salient expressions.¹⁰ Our intuition is that (18) and (19) most naturally receive the D-interpretation (e.g., 'what person *who is not me* might help you?'), whereas (20)-(22) the M-interpretation (the hearer has already been in Milan and Rome / has already had some milk / has already had some food for breakfast).

¹⁰ Note that the only other type of units that can occupy this syntactic position are expletive, non-referential and more or less taboo nouns, such as *diavolo* (lit. 'devil'), *diamine* (a euphemism for the former), *cazzo* (a taboo word denoting male genitalia), *cavolo* (lit. 'cabbage', but in fact a euphemism for the former), etc.

2.4 Determiner-like uses

In section 2.1 we have considered adnominal uses of *altro* which might suggest a determiner-like status and have argued that at least some instances of those are best seen as adjectival instead—in particular, when occurring in postnominal position *altro* has been shown to express the property of being qualitatively different. We now turn to a complementary task: we show that there are determiner-like uses of *altro*, in constructions of the form [(Det) *altro* (Adj) N (Adj)] (in which Det and Adj are optional and *altro* occurs prenominally; e.g., *un'altra bellissima voce salentina* ‘another wonderful voice from Salento’, *altri punti interessanti* ‘other interesting points’), and we argue against identifying *altro* with an adnominal (qualifying) adjective in such contexts. In this use, *altro* appears to work as a determiner, either in conjunction with another Det-element or by itself.

Adnominal adjectives in Italian often appear after the noun they modify (as in [23a]), although a prenominal occurrence is not excluded (see [23b]):

- (23) a. Ho comprato *un azzurro cappello / un cappello azzurro.
‘I bought a blue hat.’
- b. La cucina aveva una (alta) finestra (alta) di vetro smerigliato.
‘The kitchen had a high window with frosted glass.’

When the noun heads in the indefinite NPs in (23a,b) are pronominalized via the partitive clitic *ne*, as in (24a,b) below, the forms *uno / una* are anaphoric indefinite pronouns distinct from the indefinite determiners:

- (24) a. Quanto a cappelli, ne ho comprato *un azzurro / uno azzurro.
‘Talking about hats, I bought a blue one.’
- b. Quanto a finestre, la cucina ne aveva *un'alta / una alta di vetro smerigliato.
‘Talking about windows, the kitchen had a high one with frosted glass.’

(24a,b) are to be compared with (25a,b), in which the status of the adjective is shown to be similar to that of a restrictive relative clause attached to the indefinite pronoun:

- (25) a. Ne ho comprato uno che è azzurro.
‘I bought one which is blue.’
- b. La cucina ne aveva una che era alta (e di vetro smerigliato).
‘The kitchen had one which was high (and with frosted glass).’

If we now turn to *altro* as a modifier inside a NP,¹¹ we see that (a) it typically appears in prenominal position, as shown in (26a,b), and (b) it is obligatorily preceded by the form *un*, with which it yields a contracted form, while *uno / una* are ungrammatical in this context, as shown in (27a,b):

¹¹ One might describe *altro* as a nominal modifier in this kind of examples, however we do not think that this would be an accurate description, because at this point one still does not know what *altro* is actually modifying in *ho comprato un altro cappello* (‘I bought another hat’)—the modified expression could be the noun *cappello*, but it could also be the determiner *un*. What we need to understand is precisely whether *altro* is a modifier of the N (e.g., like the relative clause in *il cappello che mi hai regalato* ‘the hat that you gave me’) or a modifier of the Det (thus entering the derivation of a complex Det).

- (26) a. Ho comprato un altro cappello / *un cappello altro.
'I bought another hat.'
- b. La cucina aveva un'altra finestra / *una finestra altra.
'The kitchen had another window.'
- (27) a. Quanto a cappelli, ne ho comprato un altro / *uno altro.
'Talking about hats, I bought another one.'
- b. Quanto a finestre, la cucina ne aveva un'altra / *una altra.
'Talking about windows, the kitchen had another one.'

Therefore, *altro* cannot be an adjective in this context. Accordingly, we cannot paraphrase (27a,b) by means of a relative clause in which *altro* is in predicative position (e.g., *Quanto a cappelli, ne ho comprato uno *che è altro* 'Talking about hats, I bought one which is other'). Regarding meaning, our intuition is that (26a) and (27a) can receive a D- or an M-interpretation according to the context (e.g., 'you had suggested to me a blue hat but I bought another one in the end' vs 'I had already bought a hat and now I bought another one'). (26b) and (27b) are also possibly ambiguous between these two interpretations (e.g., 'the dining room had such-and-such window but the kitchen had a different kind of window' vs 'the kitchen had a window such-ad-such and it had another window besides that').

In the plural, the status of *altro* is similar to that of numerical determiners, as shown in (28a,b):

- (28) a. Durante il mio soggiorno ho avuto altri / due / numerosi problemi.
'I had other / two / numerous issues during my stay.'
- b. Quanto a problemi, durante il mio soggiorno ne ho avuti altri / due / numerosi.
'Talking about issues, I had others / two / many during my stay.'

For these sentences the M-interpretation is the only possible interpretation. This pattern is not possible with an adnominal adjective in the place of *altro*:

- (29) a. Durante il mio soggiorno ho avuto gravi problemi.
'I had serious issues during my stay.'
- b. *Quanto a problemi, durante il mio soggiorno ne ho avuti gravi.

Like numerical determiners, *altro* can co-occur with a definite determiner, as shown in (30a,b):

- (30) a. Gli altri problemi che ho avuto durante il mio soggiorno nascono da comportamenti scorretti.
'The other issues I had during my stay originate from improper behaviors.'
- b. I due / numerosi problemi che ho avuto durante il mio soggiorno nascono da comportamenti scorretti.
'The two / numerous issues I had during my stay originate from improper behaviors.'

Unlike numerical determiners, *altro* also co-occurs with indefinite determiners, as shown in (31a,b):

- (31) a. Durante il mio soggiorno ho avuto qualche altro problema / degli altri problemi.
'During my stay I had some other issues.'
- b. *Durante il mio soggiorno ho avuto qualche / dei due problemi.

So far we have considered occurrences of *altro* in contexts of the form [(Det) *altro* (Adj) N (Adj)] in which Det was null, an indefinite or a definite determiner. As for the pronominal uses of type (U3) reviewed in section 2.3, the Det-element can be any quantifying determiner, as shown in (32a,b) for the universal determiners:

- (32) a. Il cosiddetto problema ontologico, come ogni altro problema metafisico, è insolubile.
'The so-called ontological problem, like any other metaphysical problem, is insoluble.'
- b. La verità è dentro di noi, non può essere in nessun altro luogo.
'Truth is inside us, it can be in no other place.'

Since in many of the examples considered above *altro* co-occurs with an element that clearly has the status of a determiner, one might ask in what sense *altro* itself can be said to have determiner-like status. We think that *altro* is actually not a determiner. This is clearer if we consider singular NPs with *altro*. For example, (27a) would become ungrammatical if we stripped it of the determiner and left *altro* in place (see [33]), and similar for (32a) (see [34]):

- (33) *Quanto a cappelli, ne ho comprato altro.
- (34) *Il cosiddetto problema ontologico, come altro problema metafisico, è insolubile.

We think a relevant possibility is that in (26a,b), (30a), (31a) and (32a,b) *altro* combines with a co-occurring determiner to form a complex determiner, whereas in (27a,b) it combines with a co-occurring pronoun to form a complex pronoun.

3. The relation between D-interpretation and M-interpretation

The D- and the M-interpretation are both sensitive to a sort, which is sometimes expressed overtly by a sortal term (a nominal expression following *altro*). For instance, focusing on the D-interpretation, sentence (35) can be understood as (36), but also as (37):

- (35) Napoleone III era un altro.
'Napoleon III was another.'
- (36) [Context: We have been talking about the other, better known Napoleon.]
Napoleon III was not the same *individual* as the *individual* that is salient in the discourse.
- (37) [Context: We are talking about the consequences of some event on the life of Napoleon III.]
Napoleon III was not the same *person* as the *person* he used to be before.

Similarly for the M-interpretation, for example, (38) can be interpreted as one of the propositions in (39), depending on the context in which the question is raised:

(38) Ha bisogno di altro?
'Do you need anything else?'

(39) Do you need any more *thing/information/item/product/ ...?*

Another property *altro* has on both the D- and M-interpretation is that it is semantically relational: the phrase *altro N* expresses a relation between an object denoted by the phrase itself and some other object of type *N* that is salient in the discourse. Consider (40a,b):

- (40) a. Chomsky non c'era però è venuto un altro linguista.
'Chomsky wasn't there, but another linguist came.'
- b. È venuto Chomsky e un altro linguista ancora.
'There came Chomsky and yet another linguist *x* besides Chomsky.'

In both (40a) and (40b) the phrase *altro linguista* denotes a linguist *x* which is related to another (antecedently mentioned) linguist that is salient in the discourse, namely Chomsky.

Looking at Romance, it would seem unlikely that the D- and M-interpretation were due to accidental homonymy, since they are available for the word corresponding to *altro* across Romance languages.¹² Italian *altro* (like French *autre* or Spanish *otro*) derives from Latin *alter* (Gianollo and Mauri 2020; the contribution on Latin in this volume) and previous research has shown that this word was polysemous along the same D/M dimension, e.g., (41a,b), besides having the interpretation of the ordinal number *second* (Gianollo and Mauri 2020), e.g. (41c):¹³

- (41) a. ad alteram fluminis ripam
'on the other bank of the river'
- b. ad rapinam alterius erecti et adtoniti
'intent and stretched toward yet another prey'
- c. cena prima, altera, tertia
'first, second, third course'

Furthermore, we have just seen that the D- and M-interpretations share core semantic properties—sensitivity to a sort, anaphoricity and relationality—; it would thus be surprising to have such a large share of core properties if the two interpretations were due to accidental homonymy.

3.1 Is one interpretation basic and the other derived from it?

One might propose that one interpretation is basic and the other is derived from it via a general inferential mechanism. There are two possibilities in this respect:

¹² There are numerous languages that resolve the polysemy by means of two distinct words (REF). These include German (*weiterer / anderer*) and Russian (*drugoj / inoj*), for instance.

¹³ This interpretation is interesting in a typological perspective, since the Finnish word meaning 'other' is precisely the ordinal for "second" (see the contribution by Elsi Kaiser in this volume).

- (a) **D-first:** The D-interpretation is the base meaning and the M-interpretation is derived from it via pragmatic inference (in special contexts).
- (b) **M-first:** The M-interpretation is the base meaning and the D-interpretation is derived from it via pragmatic inference (in special contexts).

Assuming that the base meaning of a polysemous word *W* is present in all uses of *W* (for a non-base meaning of *W* to arise from *W*'s base meaning, it must be the case that *W*'s base meaning is present), one or the other of the following conditions should hold true:

- (a*) the D-interpretation is always present, even in those special contexts in which the M-interpretation arises (from D-first),
- (b*) the M-interpretation is always present, even in those special contexts in which the M-interpretation arises (from M-first),

We consider each possibility in turn.

A difficulty for **D-first** comes from sentences like (42), in which the NP containing *altro* denotes a particular event *e**:

- (42) Stasera abbiamo fatto un'altra partita a scacchi.
'Tonight we played another chess game.'

In its obvious incremental reading (based on the M-interpretation of *altra*), (42) presupposes that we played a chess game *e* before tonight, which is different from *e**. Now, being a spatio-temporal particular, *e** cannot occur repeatedly (e.g., the game I played yesterday cannot be the same spatio-temporally particular event as game *e**—they are both events of playing chess but they are numerically distinct). It is then obvious that the chess game *e* cannot be the same event as *e**—it would indeed be odd to say *tonight we played a chess game which is different from the one we had played before*. Thus, why bother to say *un'altra partita a scacchi* 'another chess game', rather than the plain *una partita a scacchi* 'a chess game'? Notice that if one said the latter, there would no longer be the implication that we played a chess game before. It seems thus that the only role of *altra* in (42) is to convey an additive implication. The defender of **D-first** might argue that by uttering (42) one could mean that tonight we played a chess game *qualitatively different* from our previous one, and this would not be trivial since it is possible for two (i.e. numerically different) chess games to be qualitatively identical. It is dubious, however, that one would still be using (42) in its incremental reading in this case.

Let's turn to **M-first**. Consider (43), as uttered in the context below:

- (43) Vorrei un'altra vita.
Context: The speaker wishes they had a *different* life from their actual one.
'I wish I had a life which was different from my actual life.'

Here the speaker does not wish to have one more life, in addition to their previous life. It is thus clear that D can be present without M.

Since neither **D-first** nor **M-first** seem tenable, we are pushed to the third possibility below:

- (c) **No first:** D-interpretation and M-interpretation are equally basic meanings and neither is derived from the other.

Given **No first**, we thus expect that there should be contexts in which only the M-interpretation is present and others in which only the D-interpretation is present. (44) would be among the former contexts, (45) among the latter:

- (44) Vorrei un'altra chance.
'I'd like to have *one more chance*.'
- (45) Secondo un'altra ipotesi i dinosauri si sarebbero estinti a causa di un asteroide.
'According to *a different hypothesis*, dinosaurs got extinct because of an asteroid.'

No first seems plausible to us. In the following section we propose that, although independent from one another, the D-interpretation and the M-interpretation are grounded in a common core logical meaning.

3.2 D and M are both grounded in a core logical meaning

The conclusion of the previous section has been that the D- and the M-interpretation are plausibly equally basic interpretations. However, as we have argued above, it is extremely unlikely that they are due to homonymy. As a way out of this *impasse*, we make a two-fold proposal:

- (i) the negation of identity, \neq , is the core meaning of *altro*;
- (ii) both the D- and the M-interpretation emerge from this common core in different types of discourse context.

Consider (46):

- (46) Mi avevi consigliato Capperi ma poi siamo andati in un'altra pizzeria.
'You suggested Capperi to me but eventually we went to another pizzeria.'

In (46) there is contrastive meaning: you suggested to me to go to the pizzeria Capperi but eventually we went to another pizzeria. The contrastive meaning favours the D-interpretation: the pizzeria we went to is different from Capperi. Consider now (47):

- (47) Ieri siamo andati da Capperi e stasera andiamo in un'altra pizzeria.
'Yesterday we went to Capperi and tonight we go to another pizzeria.'

Unlike the contrastive context (46), the coordination (47) is easily understood as additive—yesterday we went to Capperi and tonight we go *again* to a pizzeria.¹⁴ However, even with this additive interpretation, the pizzeria cannot be the same across the two events (it cannot be Capperi in both cases). Compare (47) to (48):

- (48) Ieri siamo andati da Capperi e anche stasera andiamo in pizzeria.
'Yesterday we went to Capperi and tonight we go again to a pizzeria.'

¹⁴ Sentence (47) could perhaps allow for a contrastive construal, but we ignore this possibility and only focus on its obvious additive interpretation.

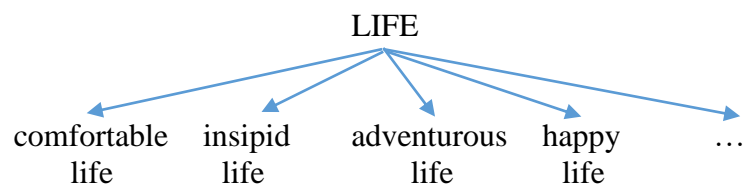
(48) has an additive meaning, too. Crucially, though, there is no entailment in (48) that the pizzeria we go to tonight is not Capperi.¹⁵ Therefore, the question is how to account for the contrast between (47) and (48), and for the similarity between (47) and (46), without postulating that *altro* has the D-interpretation in (47).

The solution we propose is to consider the logical relation of non-identity (\neq) as the semantic core of *altro*. As pointed out by Cinque (2015), followed by Kayne (2021), two ways of being non-identical are relevant to the semantics of *altro*:

(NI1) x and y are non-identical *qua* individuals, namely, x and y are *numerically different* individuals but belong to (are tokens of) the *same relevant type*;

(NI2) x and y differ in type, and not just *qua* individuals, namely, x and y are *qualitatively different* individuals (are tokens of different types).¹⁶

We see (NI1) and (NI2) at work in the interpretation of e.g. (44) and (45), respectively. The reason for this distinction is arguably that chances (opportunities) are a sort of entities allowing for qualitative discrimination less easily than hypotheses. More specifically, we hypothesize that (un)availability of a type interpretation for a noun N^1 is related to the cognitive (un)accessibility of a hierarchical structure in which N^1 dominates more specific nouns N^2, \dots, N^n (hyponyms of N^1). For instance, *vorrei un'altra chance* is mainly interpreted as ‘I wish I had one more chance’ (rather than ‘a different chance’) since the noun *chance* does not easily allow for hyponymical specifications. On the other hand, *vorrei un'altra vita* is easily interpreted as ‘I wish I had a different (type of) life’ since the noun *vita* allows for embedding in a structure such as the following:



In contrast, on the interpretation of *vita* as ‘life of a player in a game’, the noun does not allow for a similar structure and the interpretation of the sentence has ‘one more life’ instead.¹⁷

¹⁵ There might be an *implicature* that it is not Capperi—the speaker would have otherwise said *e anche stasera ci andiamo* (‘and we’ll go there tonight too’). As such, it could be canceled (think of a context in which the speaker does not know yet to what pizzeria they will go).

¹⁶ On the distinction between *token* and *type*, see Wetzel (2018), among others.

¹⁷ Kayne (2021) makes the interesting remark below while discussing the contrasts in (i) and (ii) (from Cinque 2015; according to Cinque, the high position of *altro* relative to the cardinal *due* triggers the M-interpretation, the low position triggers the D-interpretation):

- (i) a. Dammi altri due minuti! ‘Give-me five more minutes!’
b. *?Dammi due altri minuti!
- (ii) a. Se sopravviveranno, saranno due altri individui. ‘If they-survive, they will be two different individuals.’
b. *Se sopravviveranno, saranno altri due individui.

“The deviance of [(i.b)] is due to ‘minutes’ not being readily compatible with the ‘type’-interpretation; the deviance of [(ii.b)], on the other hand, is due to the overall interpretation being one of ‘type’ and not one of ‘token’.” (Kayne, 2021)

Even though we will not provide compositional semantic derivations for our target sentences in this paper, a tentative semantic clause for *altro* for the simpler case of (NI1) could be specified as in (49):

$$(49) \quad [[\text{altro}]] = \lambda N_{\langle e, t \rangle}. \lambda x_e: N(x). \lambda y_e. y \neq x \wedge N(y)^{18}$$

Here *altro* denotes a function taking the following arguments: a noun denotation N , an object x presupposed to be N , and another object y . It then introduces the conditions that y is non-identical to x and y is N . The semantic representation of the NP *un'altra chance* ‘another chance,’ in a DRT-style format (Kamp and Reyle 1993), would thus be as in (50) (the parts in boldface pertain to the presupposed background):

(50)

x, y
chance(x)
$y \neq x$
chance(y)

Turning to (NI2), the semantic clause for *altro* could be specified as in (51) (\leq_τ denotes the relation of being a subtype—e.g., the relation subsisting between the types *philosophy book* and *book*):

$$(51) \quad [[\text{altro}]] = \lambda N^1_{\langle e, t \rangle}. \lambda N^2_{\langle e, t \rangle}: N^2 \leq_\tau N^1. \lambda N^3_{\langle e, t \rangle}. N^3 \neq N^2 \wedge N^3 \leq_\tau N^1$$

Here *altro* denotes a function taking the following arguments: a noun denotation N^1 , a type N^2 presupposed to be a subtype of N^1 , and another type N^3 . It then introduces the conditions that N^3 is non-identical to N^2 and N^3 is a subtype of N^1 . For the NP *un'altra ipotesi* ‘another hypothesis,’ we would thus have a possible semantic representation as in (52) (again, the parts in boldface pertain to the presupposition):

(52)

N^2, N^3
$N^2 \leq_\tau$ HYPOTHESIS
$N^3 \neq N^2$
$N^3 \leq_\tau$ HYPOTHESIS

A possible way to unify clauses (49) and (51) (avoiding to give a disjunctive semantic analysis for *altro*) would consist in assuming that (token-level) individuals are maximally specific types at the bottom of the type hierarchy; the predication relation in “*x is a chance*” would then correspond to the subtype judgment “*x is a subtype of chance.*”

¹⁸ Mayr and Vostrikova (2022) make a similar proposal for the exceptive-additive marker *besides*, as used in sentences such as (i) and (ii):

- (i) No student besides Ann came.
- (ii) Some student besides Ann came.

Interestingly, as pointed out by the authors, *besides Ann* has an exceptive interpretation in (i) (i.e., Ann came but no student other than Ann came) and an additive interpretation in (ii) (i.e., Ann came and some student other than Ann came too). This makes *besides* remarkably similar to *altro* with respect to the availability of D-/M-interpretations.

4. Investigation of the D-interpretation and M-interpretation in the CORIS corpus

In this section we present the results of a study we conducted on the corpus CORIS (Rossini Favretti et al. 2002). We manually annotated 250 occurrences of *altro*, randomly extracted from CORIS, for the features *D(ifference) / M(ore)* and *To(ken) / Ty(pe)*. We found 142 instances of *D*-interpretation, 63 instances of *M*-interpretation, 20 instances of *D+M*-interpretations (described as “*D+M* entanglement”). The remaining 25 cases corresponded to idiomatic formulas (e.g. *fra l’altro* ‘moreover’; *tutt’altro che (facile)* ‘all but (easy)’)—see Fig. 1.

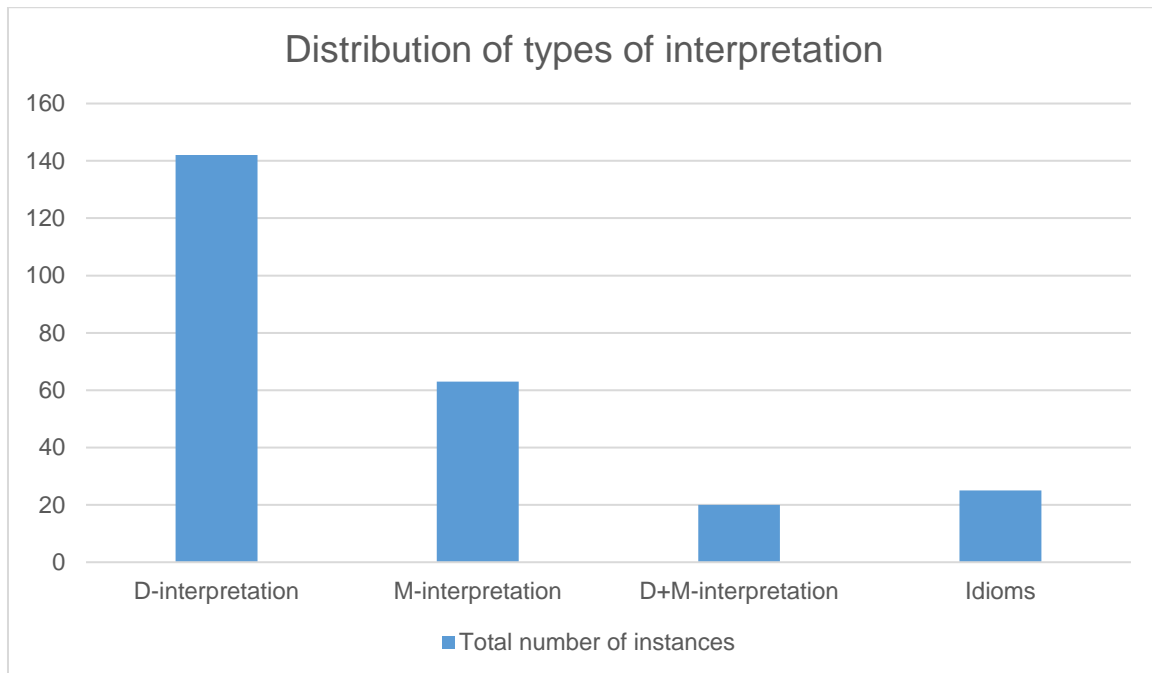


Figure 1. Distribution of types of interpretation.

Importantly, we did not find any alignment *D-Ty* or *M-To*: in some (even most) cases of *D*-interpretation the relevant ontological level is *Token*, in some cases of *M*-interpretation the relevant ontological level is *Type*. More precisely: (a) of the 142 instances of *D*-interpretation, we found 108 cases of *Token*, 33 cases of *Type* and 1 ambiguous case *Token/Type*, (b) of the 63 instances of *M*-interpretation, we found 53 cases of *Token*, 8 cases of *Type* and 2 ambiguous cases *Token/Type*, and (c) of the 20 instances of *D+M*-interpretations, we found 12 cases of *Token*, 5 cases of *Type* and 3 ambiguous cases *Token/Type* (see Fig. 2).

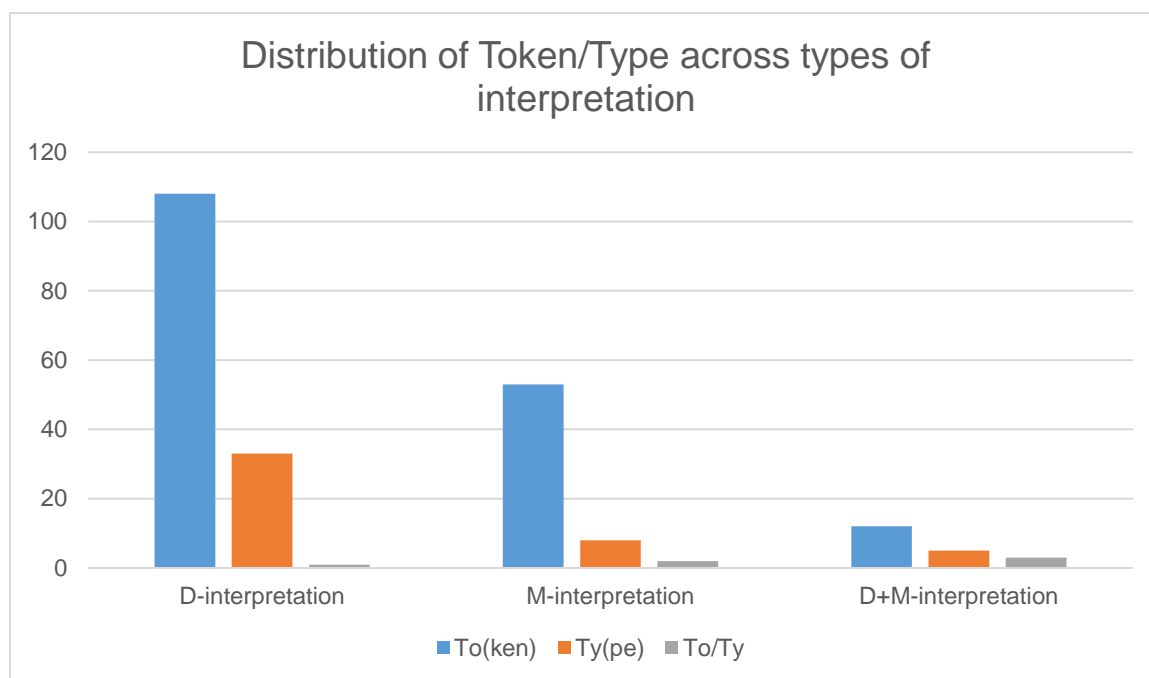


Figure 2. Distribution of Token/Type across types of interpretation.

Below we report some representative sentences or discourses from CORIS, each one representing a relevant combination of the features we selected.

- ***D-interpretation***

Token

(53) Da giovane passava da una festa all'altra, senza divertirsi.
 'In his youth, he used to move from one party to the other, without enjoying it.'

Type

(54) Nel 1911 Giolitti decise che era giunto il momento di conquistare per l'Italia i due vilayet turchi, la Tripolitania e la Cirenaica [...]. Lo fece a freddo [...], per due ragioni. In primo luogo perché la Francia si stava impadronendo del Marocco e il Mare nostrum sarebbe definitivamente diventato un mare anglo - francese. In secondo luogo perché voleva compensare le sue aperture a sinistra con un "regalo" a quelle correnti nazionaliste che stavano emergendo nella società italiana. Il freddo calcolo di Giolitti ebbe un altro effetto, forse imprevisto: provocò la simpatia [...] degli ambienti cattolici.
 'In 1911 Giolitti decided it was time for Italy to conquer the two Turkish vilayet, Tripolitania and Cirenaica. It was a cold decision, dictated by two reasons. First, because France was taking control over Morocco and the Mediterranean Sea would soon become an Anglo-French sea. Second, because he wanted to compensate his left-wings tendencies with a "gift" to those nationalistic trends that were then emerging in the Italian society. Giolitti's cold calculation had a different, maybe unexpected, effect: it caused the sympathy of Catholic milieux.'

- **M-interpretation**

Token

- (55) Il Governo è in piedi e questa è la riconoscenza che mi viene tributata per questa come per tante altre imprese.
 ‘The Government is still in force and this is the gratitude I get for this as well as for many other achievements.’

Type

- (56) [...] in molte città del sud dell'Iraq gli impianti elettrici sono stati bombardati dai raid anglo - americani provocando a catena altre tragedie: panne dei sistemi di pompaggio, dunque carenza di acqua potabile e rischio di gravi epidemie.
 ‘In many Southern Iraqi cities the electrical systems have been bombed in Anglo – American raids, which caused a chain of other tragedies: breakdowns of the pumping systems, therefore shortage of drinking water and risk of serious epidemics.’

- **D+M-interpretation (“D+M entanglement”)**

- (57) Il computer è, dunque, il primo e il più importante strumento di lavoro degli studiosi del clima. [...] Tuttavia i "modelli di circolazione generale" sono modelli semiempirici. Nel senso che bisogna immettere continuamente nelle equazioni dati rilevati sul campo [...] e reiterare il calcolo. Per recuperare questi dati gli studiosi del clima hanno bisogno di altri strumenti. I più banali sono i termometri e i barometri.
 ‘The computer is the first and most important working instrument of climatologists. However, general circulation models are semi-empirical models: one needs to keep feeding their equations with field data and to repeat the calculation. To collect these data climatologists need other instruments, among which the simplest are thermometers and barometers.’

The CORIS data show that additive contexts do not necessarily involve multiple tokens of the same type (e.g., *Cameriere, un'altra birra* ‘Waiter, another beer, please’) but may involve qualitatively different objects (e.g., *Ho già un cane—un Setter che tengo in giardino—e ora ne vorrei un altro, un piccolo cane tipo barboncino* ‘I already have a dog—a Setter whom I keep in the garden—and now I would like to have another one, a pet dog like a Poodle’, or *Ho già un barboncino e ora vorrei un altro animale da compagnia* ‘I already have a Poodle and now I would like to have another pet’); on the other hand, contrastive contexts are possible not only with qualitatively different items (e.g., *Non mangio carne, potrei avere un'altra cosa?* ‘I don’t eat meat, may I have another thing?’), but also with numerically different tokens of the same type (e.g., *Ho appena scelto questa carta dal mazzo ma sento che non è la mia carta fortunata, posso sceglierne un'altra?* ‘I’ve just picked this card from the deck but I feel it’s not my lucky card, can I pick another one instead?’).

These results show that Cinque’s (2015) and Kayne’s (2021) distinction between token-level and type-level *altro*, on the one hand, and Gianollo & Mauri’s (2020) distinction between contrastive and additive discourse relations, on the other, do not capture the same interpretational distinction regarding *altro* but refer to two different dimensions of semantic variation in the way *altro* is interpreted in context (Gianollo 2023).

5. Analysis of the data in SDRT

In this section we provide formal analyses of some representative sentences in the framework of *Segmented Discourse Representation Theory* (SDRT; Asher & Lascarides 2005). SDRT is particularly apt to frame our proposal since it allows a modular representation of the separate contributions of *altro*'s lexical semantics and discourse structure.

Building on the previous proposals considered above, the formal analysis we propose for the D- and M-interpretation is based on the following claims:

- (a) *altro* always contributes \neq to the sentence meaning (across D- and M-interpretation),
- b) it presupposes a discourse antecedent x , refers to a discourse entity y and asserts that $x \neq y$,
- (c) x and y can be of any ontological type (different tokens of the same type or different sub-types of the same type),
- (d) the discourse context, including the lexical properties of the N, determines the ontological type of x and y ,
- (e) the M-interpretation only emerges in additive contexts (whatever the ontological type of x and y),
- (f) the D-interpretation is favored in contrastive contexts (whatever the ontological type of x and y).

We take “additive” to mean that some underlying event predication, $\Phi[\dots]$, has been backgrounded (along with the antecedent entity x that *altro* is anaphoric to), containing x in some role, i.e., $\Phi[x]$, and a repetition of $\Phi[\dots]$ occurs in the assertion, in which the y referred to by *altro* appears in the same role as x , i.e., $\Phi[y]$. For example, (58) is interpreted as in (59):

(58) Abbiamo bisogno dell'aiuto di altri volontari che si uniscano a noi.
'We need help from other volunteers who may join us.'

(59) Presupposition: $\{x \text{ are volunteers \& we have the assistance of } x\}$
Assertion: $[it \text{ is needed that } (\exists y \text{ } y \text{ are volunteers \& } y \neq x \text{ \& } y \text{ join us \& we have the assistance of } y)]$

On the other hand, we take “contrastive” to mean that some underlying event predication $\Phi[\dots]$ is asserted of y but negated of the antecedent entity x , i.e., $\Phi[y]$ and $\neg\Phi[x]$ both appear in the assertion. For example, (60) is interpreted as in (61):

(60) Cerchiamo un'altra soluzione, più semplice della prima.
'We are looking for a different solution, simpler than the first one.'

(61) Presupposition: $\{x \text{ is a solution to our problem \& } x \text{ is of type } \tau_1\}$
Assertion: $[we \text{ look for } (\exists y \text{ } y \text{ is a solution to our problem \& } y \text{ is of type } \tau_2 \text{ \& } \tau_2 \neq \tau_1 \text{ \& } y \text{ is simpler than } x \text{ \& we adopt } y \text{ \& } \neg(\text{we adopt } x))]$

We show next how the analysis applies to some examples discussed in the previous literature.

We assume that a type variable τ_n is present in the semantic representation in the M-interpretation too. The type variable will always occur twice: once to specify the type of the backgrounded entity (i.e., the anaphoric antecedent of *altro*) and once to specify the type of the foregrounded entity. For the M-interpretation, we assume that the type variable τ_2 of the foregrounded entity by default takes the same value as the type variable τ_1 of the backgrounded entity. This accounts for the remark that *altro* on the M-interpretation means ‘one more token of the same kind’ (Gianollo & Mauri 2020, ...). We believe though that the identity between τ_2 and τ_1 is due to a default inference which can be overridden if information to the contrary is specified, as in the following dialogue:

- (62) A: Posso avere un'altra borsa?
 B: Ne vuole ancora una grande?
 A: Non ha importanza, anche piccola va bene.
- A: ‘May I have another bag?’
 B: ‘Would you like to have a big one again?’
 A: ‘It doesn’t matter, a small one would do too.’

Sentence (63), out of context, is ambiguous between D- and M-interpretation:

- (63) Posso avere un'altra borsa?
 ‘May I have another bag?’

The semantic representations associated with (63) under these two readings are given below.

Notational conventions: In the SDRT structures below, the symbol \leq_τ is used for the relation of subtype, \diamond and \square are used as modal operators of permission and request, respectively, and \neg , \Rightarrow are used for logical negation and conditional, respectively; note that \diamond , \square , \neg are prefixed to whole SDRT structures, while \Rightarrow is interposed between two SDRT structures, the one to the lefthand side representing the antecedent of the conditional and the one to the righthand side representing its consequent (Kamp and Reyle 1993). We use the following symbols as variables ranging over specific domains: (a) “ x ”, “ y ” for (token-level) *individuals*, (b) “ τ_1 ”, “ τ_2 ” for *types*, (c) “ e_1 ”, “ e_2 ” for *events*, (d) “ t_1 ”, “ t_2 ” for *times*. Moreover, we use small caps for terms referring to types, e.g. “BAG” refers to the type corresponding to the N “bag”.

Types have a cumulative denotation: We assume that type terms are *cumulative*: if $\text{TYPE}(x)$ and $\text{TYPE}(y)$ are both true predications and $x \oplus y$ is the plural individual obtained by summing x and y , then $\text{TYPE}(x \oplus y)$ is also a true predication (Krifka 1998, Landman 2000, Kratzer 2008). (Thus, below when we write “MINUTE(x)” we do not imply that the entity denoted by “ x ” is a duration of a single minute.) QUANT is a function that takes a type τ and an entity x of type τ as arguments and returns the number of parts of x that are atoms in the denotation of τ .

- D-interpretation of (63): ‘May I have a different bag (as a replacement)?’

s, x, τ_1
$s = \text{the speaker}$ $\text{BAG}(x)$ $\text{TYPE}(x) = \tau_1$ $\tau_1 \leq_{\tau} \text{BAG}$ \diamond
y, τ_2, e_2, t_2 $\text{BAG}(y)$ $\text{TYPE}(y) = \tau_2$ $\tau_2 \leq_{\tau} \text{BAG}$ $\tau_2 \neq \tau_1$ $\text{HAVE}(e_2, s, y)$ $\text{TRACE}(e_2) = t_2$ $\text{now} < t_2$ \neg
e_1 $\text{HAVE}(e_1, s, x)$

Here the negation of identity contributed by *altro* is at the level of types: the speaker asks for there to be a bag y of a type different from bag x and for them to have bag y and not to have bag x .

- M-interpretation of (63): ‘May I have one more bag?’

s, x, τ_1, e_1, t_1
$s = \text{the speaker}$ $\text{BAG}(x)$ $\text{TYPE}(x) = \tau_1$ $\text{HAVE}(e_1, s, x)$ $\text{TRACE}(e_1) = t_1$ $t_1 < \text{now}$ \diamond
y, τ_2, e_2, t_2
$\text{BAG}(y)$ $y \neq x$ $\text{TYPE}(y) = \tau_2$ $\tau_2 = \tau_1$ $\text{HAVE}(e_2, s, y)$ $\text{TRACE}(e_2) = t_2$ $\text{now} < t_2$

In the case of the M-interpretation of (63), the negation of identity contributed by *altro* is at the level of tokens (of the same type **BAG**): the speaker asks for there to be a bag y non-identical to the bag x they already have and for them to have bag y in addition to x .

Sentence (64) is considered by Cinque (2015) as a paradigm of M-interpretation (highlighted by the high position of *altri* above the cardinal element *cinque* ‘five’):

(64) Dammi altri cinque minuti!

The semantic representation for this sentence is given below.

- M-interpretation of (64): ‘Give me five more minutes!’

$s, h, x, \tau_1, e_1, t_1$
$s = \text{the speaker}$ $h = \text{the hearer}$ $\text{MINUTE}(x)$ $\text{TYPE}(x) = \tau_1$ $\text{GIVE}(e_1, h, s, x)$ $\text{TRACE}(e_1) = t_1$ $t_1 < \text{now}$ <input type="checkbox"/>
y, τ_2, e_2, t_2
$\text{MINUTE}(y)$ $\text{QUANT}(\text{MINUTE}, y) = 5$ $y \neq x$ $\text{TYPE}(y) = \tau_2$ $\tau_2 = \tau_1$ $\text{GIVE}(e_2, h, s, y)$ $\text{TRACE}(e_2) = t_2$ $\text{now} < t_2$

As for the M-interpretation of (63), the negation of identity is at the level of tokens (of the same type **MINUTE**): the speaker commands the hearer that there be a duration y of 5 minutes, non-identical to the duration x the hearer has already granted them, and the hearer give them y in addition to x .

Finally, we consider sentence (65), regarded by Cinque (2015) as a paradigm of the D-interpretation (highlighted by the low position of *altri*, below the cardinal element *due* ‘two’):

(65) Se sopravviveranno, saranno due altri individui.

- *D*-interpretation of (65): ‘If they survive, they will become two different persons.’

x, τ_1
PERSON(x) QUANT(PERSON, x) = 2 TYPE(x) = τ_1
e_1, t_1
SURVIVE(e_1, x) TRACE(e_1) = t_1 now < t_1
\Rightarrow
y, τ_2, e_2, t_2
PERSON(y) QUANT(PERSON, y) = 2 TYPE(y) = τ_2 $\tau_2 \neq \tau_1$ BECOME(e_2, x, y) TRACE(e_2) = t_2 $t_1 \leq t_2$

In the case of (65) the *D*-interpretation apparently is present without the context being *contrastive* (as we defined the concept above). However, we might speculate that the underlying predicate BECOME is what triggers the *D*-interpretation of this sentence: after the adversity they might endure, the two persons being talked about would be a kind of persons that they are not at present.

6. Conclusion

Natural languages present a vast array of phenomena laying at the interface between grammar and logic (Chierchia 2013). A large part of these phenomena belongs to pragmatics, in particular to the domain of scalar reasoning (Fox 2007). Another area that has been extensively studied is the rich domain of functional items; within this domain, formal semantics has been traditionally concerned with that part of the vocabulary that consists of quantificational determiners and adverbs (Frege 1892, Russell 1905, Montague 1973). Less studied within this tradition are words that exhibit a clear logical meaning in some core uses, while showing a more diversified syntactic distribution, and a correlative variation in their semantic behavior, from the type of purely functional (logic-based) items to that of more contentful lexical items. In this paper we have considered one such word in Italian and have examined its syntactic distribution and semantic properties. The study of this word proves to be an interesting window on the interface between language and logic, as it shows how logical meaning interacts with linguistic structure.

Based on corpus data, we have shown that *altro* varies semantically from an adjective-like meaning, roughly corresponding to ‘qualitatively different’, to a two-sided logical meaning: (i) difference between two objects (*Different*-interpretation) and (ii) increment along a scale (*More*-interpretation). We have elaborated on previous analyses based on structural syntactic factors or discourse factors and have worked out our proposal building on crucial insights from those analyses. In our account, negation of identity is the semantic core of *altro*, as such it is present in the semantic representation of all sentences containing this word (even

though sometimes only trivially) while the D-interpretation and the *M*-interpretation are the result of the interaction between this core meaning and the contrastive or additive property of the discourse context. The core non-identity meaning is introduced in the sentence semantic representation no matter what the syntactic position of *altro* is, while discourse context contributes to determining the relevant ontological level at which non-identity is to be evaluated. We have thus proposed a unified analysis for the different interpretations of *altro* that neatly separates *altro*'s lexical meaning from extra-lexical components to be ascribed to discourse structure. We have casted our analysis in Asher & Lascarides' (2003) SDRT, a flexible framework allowing a modular representation of the separate contributions of *altro* and discourse structure. We hope that our proposal will contribute to improve our understanding of the complex interactions between logical meanings and linguistic structure.

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