



Cognitive perspectives on English-Italian spatial particles: towards a motivated description of spatial and non-spatial senses from the lower section of the vertical dimension

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Abstract

English and Italian differ a great deal in their respective repertoires of spatial particles (an important subset of which are prepositions), an area which seems to be quite problematic in foreign language learning. Most current EFL textbooks and didactic grammars tend to provide partial and idiosyncratic cross-linguistic descriptions of such items, while the majority of dictionaries' accounts are grounded in an alphabetical order. This article contributes to the field of research on Cognitive Linguistics applications to pedagogical grammar (see, e.g., Tyler and Evans 2004, Evans and Tyler 2005, Boers et al. (eds) 2010) by proposing a motivated, cognitively grounded contrastive account of particles in English and Italian which ideally addresses the needs of pedagogy professionals as well as of advanced Italian learners of English. The proposal draws on Tyler and Evans's (2003) Principled Polysemy Network model (also see Evans 2010) and applies the rationale of a cognitively oriented view of Lexical Complexity (Bertuccelli Papi and Lenci 2007) to the overall organisation of data. Spatial and non-spatial senses of particles of verticality are here focused on, especially those in the lower section of the vertical axis. The examples were mainly gathered from dictionaries, corpora and informants.

Key words: spatial particles, polysemy networks, lexical complexity

1. Introduction

Spatial particles are polyfunctional and polysemous and often display asymmetric uses across languages, which may cause difficulty in learning.¹ English and Italian indeed differ a great deal in their respective repertoires of particles (an important subset of which are prepositions), an area which seems to be quite problematic in foreign language learning. Most current EFL textbooks and didactic grammars tend to provide partial and arbitrary cross-linguistic descriptions of such items, while the majority of dictionaries'

accounts are grounded in an alphabetical order.

This article is part of a work in progress (cf. Masi 2011) which contributes to the field of research on Cognitive Linguistics applications to pedagogical grammar (see, e.g., Tyler and Evans 2004, Evans and Tyler 2005, Boers *et al.* (eds.) 2010) by proposing the idea for a motivated, cognitively grounded contrastive account of a range of particles in English and Italian which ideally addresses the needs of pedagogy professionals as well as of advanced Italian learners of English. The examples tackled here belong to the spatial and non-spatial senses of particles of verticality, especially those in the lower section of the vertical dimension.

The theoretical background at the basis of the work proposes an integration of different cognitive perspectives, viz. Tyler and Evans's (2003) Principled Polysemy Network model and a cognitively oriented view of Lexical Complexity (Bertuccelli Papi and Lenci 2007). Relevant data for analytical purposes were taken from past studies, dictionaries, corpora and native speakers' judgments.

Figure 1 below shows an overview of particles in the lower section of the vertical axis in both languages, which highlights the higher number of members in English. The senses of *under* and *below* (vs. *sotto*) will be especially focused on, as they are the most frequent within the English compositional set.

+ Proximity/contact between TR and LM		
English	↑ ↓	Italian
<i>Under, Underneath</i> <i>Beneath</i> <i>Below</i>		<i>Sotto</i> <i>(al di sotto)</i>
- Proximity/contact between TR and LM		

Figure 1. English and Italian particles of verticality, lower section: Overview

In the selection of examples provided below, the English ones that foreground a spatial configuration (1 and 2) recruit different prepositions of the relevant compositional set depending on the reference point (Landmark) in the relation involved in each case, while the corresponding translations into Italian opt for *sotto*. In such cases the asymmetry between the two languages' repertoires could pose problems in terms of active production skills in English by Italian learners. Greater problems, in fact, emerge in more abstract cases (cf. e.g. 3 to 6), both in terms of correct interpretation of source language items and of their matching with appropriate translation options (the options

in between parentheses, in the examples below and elsewhere in the present work, are indicative of a lower degree of / or dubious preference, while those with an asterisk are unacceptable):

- (1) a. She found a letter *under* / *underneath* / (*beneath*) / **below* the carpet
b. Ha trovato una lettera *sotto* il tappet
- (2) a. A flock of ducks flew *below* / *under* / (*underneath* / *beneath*) the clouds
b. Uno stormo di anatre è volato *sotto* / *al di sotto delle* nuvole / *basso* nel cielo [*low* in the sky]
- (3) a. It's impossible to run the marathon in *under* one hour
b. È impossibile fare / completare la maratona *in meno di* un'ora / **sotto* un'ora
- (4) a. She is in the year / class *below* me
b. (Lei) è un anno / in una classe *indietro* rispetto a me / **sotto* la mia
- (5) a. I don't interact with Alan much, as he is *below* / *beneath* me in the law firm
b. Non interagisco molto con Alan, dal momento che è *al di sotto di* me / (*sotto di* me) nello studio legale / [...] nello studio legale è un mio *subalterno* [*subordinate*]
- (6) a. The business went *under*
b. L'azienda è *fallita* [*bankrupt*]

In what follows, section 2 focuses on the composite background adopted in this study in more detail, and on information about data collection and elaboration. Section 3 is devoted to a more systematic description (than mere listing) of relevant examples such as those provided above, while section 4 reports on a small experiment run with students. Some concluding remarks highlight the usefulness potential of the proposed rationale and point to necessary directions for the expansion of the research.

2. Background

Since Brugman and Lakoff's ground-breaking work on the polysemy of *over* in the 1980s,² there have been increasing attempts in the Cognitive Linguistics

literature to account for the different meanings of spatial particles in a motivated way capable of translating into psychologically plausible descriptions (among the theoretically informed and pedagogically oriented accounts are, e.g., Lindstromberg 1998, Boers and Demecheleer 1998, Dirven 2001, Rudzka-Ostyn 2003, Tyler and Evans 2003, 2004, Radden and Dirven 2007; for a theoretically informed contrastive English-Italian account, see Taylor 1988). However, as far as such items are concerned, the main trends in the actual practice of the teaching of English as a foreign language to adult Italians are still largely based on idiosyncratic listings of examples.

The present research takes inspiration from previous studies in the literature (mentioned in the selection above and beyond that) and proposes an integration of different but compatible cognitive perspectives applicable to the study of particles' polysemy for a motivated account of the cross-linguistic mapping of their senses. More specifically, the work hinges upon a framework based on a cognitively oriented view of Lexical Complexity (Bertuccelli Papi and Lenci 2007) as an overarching paradigm that takes Tyler and Evans's (2003) Polysemy Networks of English prepositions as a starting point for comparative purposes.

2.1 Polysemy Networks

Tyler and Evans's (2003) Principles Polysemy Networks (henceforth PPNs) are radial categories with spatial proto-scenes or core lexical concepts (see Evans 2010) which also crucially involve functional elements. The proto-scene is usually the earliest attested meaning associated with a given lexical form and the predominant one in the network.³

Functional elements allow for the development of various sense extensions, which cluster around proto-scenes and arise as a result of conventionalised correlations in experience, through repetition, reanalysis of conceptualisations and pragmatic strengthening (Traugott 1989). The reanalysis of conceptualisations is potentially recursive and a distinct sense can be the result of the reanalysis of another conventionalised sense rather than deriving directly from the proto-scene. Also, specific uses of particles can convey complex nuances of meaning indebted to more than one sense, whose variation depends on the receiver / interpreter, too. Tyler and Evans (2003: 84-85) indeed argue that there are often multiple motivations for a particular use, which reflect the flexibility and redundancy of spatial scenes and the richness of human cognition.

The model posits a set of cognitive principles that constrain the interpretation of utterances, i.e. several inferencing strategies (e.g. knowledge of real-world force dynamics such as gravity, the *best fit* between a concept and communicative needs, 'relativistic' topological extension) and ways of viewing a scene (e.g. from a particular vantage point). Not all uses, however, are contained within the semantic network, as some of them are created online in

the course of situated interpretations of utterances. Here are the two criteria adopted for sense distinction: for a sense to count as distinct from the primary spatial one

- it must involve content that is not purely spatial in nature and / or in which the spatial configuration between the Trajector and the Landmark (henceforth TR and LM) is changed vis-à-vis the other senses associated with a particular preposition, and
- there must be instances of the sense that are context-independent.

More recently, Evans (2010) has placed greater importance on the detection of a richer array of functional consequences associated with spatial relations and available to language users depending on the possible different ways we interact with objects and entities in everyday life. On the one hand, emphasis is taken away from the distinction between fully-fledged senses vs. contextualised interpretations. More importance is given to a detailed account of linguistic patterning and the way this maps onto a more sophisticated network of information representing the functional complexity of prepositional use potential. On the other hand, the degree of conventionality of the various uses can in fact be corroborated through psycholinguistic experimentation and corpus-based statistical techniques for sense distinction.⁴

2.2 Lexical Complexity

As for Lexical Complexity, the framework is based on a general notion of complexity elaborated by Merlini Barbaresi (2003) and draws on the theory of dynamic complex systems (cf., e.g., Larsen-Freeman and Cameron 2008, Beckner *et al.* 2009). In more detail, in Bertuccelli Papi and Lenci's (2007) conception, the lexicon is a dynamic complex system embedded within the complex system of language, and lexical items can be viewed as micro-systems embedded within the system of the lexicon. The notion of complexity is based on:

- the amount of information necessary to describe the possible states of a system at a given stage of its development, and
- organizational properties.

Dynamic systems involve, among other things, *principles* that constrain the *forms* and the level of *stability* of their organization.

In the present account PPNs are indeed viewed as evolving complex systems of sense continua, where polysemy is the epiphenomenon of historical

processes *emerging* from usage. In more detail, PPNs are conceived of as *forms* of the organisation of a lexical micro-system, and proto-scenes or primary lexical concepts, in particular, are viewed as the *basic forms* of the organisation.

Semiotic universals (cf. Peirce's 1965 semiotics) are claimed to be the principles constraining the organisation of data (see Bertuccelli Papi and Lenci 2007), which bring about naturalness scales presumably correlating with and reflecting different degrees of cognitive complexity associated with possible difficulties in learning.

The organisation of lexical relations involves two levels of description and two distinct orders of complexity: at an intra-linguistic level we can talk about a 'first order' of complexity. At a cross-linguistic level, which is what especially matters here, we can talk about a 'second order' of complexity. This recursively depends on a) the complexities of the Source and Target lexical systems, and b) the links between them (see Bertuccelli Papi and Lenci 2007).

A hypothesis at the basis of the present account (also cf. Masi 2011) is in fact that semiotic principles underlie schematization processes that are responsible for the organisation of linguistic categories not only within but also across language systems. Furthermore, on a more specific level, it is here hypothesised that a different configuration of proto-scenes (i.e. the *basic forms* of systems' organisation constrained by semiotic universals) is ultimately responsible for different degrees of inter-systemic intersection and cross-linguistic divergence of senses.

The principles especially referred to here are diagrammatic iconicity and uniqueness (cf. Peirce 1965, although others could be mentioned too, e.g. transparency, see Koj 1979). An icon is the most natural sign in Peirce's triadic conception, and involves similarity between *signans* and *signatum* (the two sides of a sign). Diagrammatic iconicity, in particular, is a sub-type of iconicity whereby *signans* and *signatum* show analogous internal relations. Uniqueness can be defined as a less stringent version of biuniqueness, the latter involving a mutually exclusive one-to-one relation between *signans* and *signatum* that is inversely related to the pervasive principle of economy regulating language use.

More specifically, at an intra-linguistic level, diagrammatic iconicity is here viewed as constraining the degree of similarity between each sense extension (within a given particle's polysemy network) and the proto-scene. Similarity can be roughly reckoned on the basis of the absence / presence (and type) of spatial configuration involved, and the correlated degree (+/-) of concreteness vs. abstractness of TRs and LMs. Uniqueness, instead, can be viewed as reflecting the extent to which a sense tends to be almost exclusively identified by a given particle, roughly reckoned on the basis of the number and types of

(near) synonyms available within a language. Let us now consider the examples below:

- (1) a. The picture is *over* the sofa
b. Il quadro è *sopra* il divano
- (2) a. The town is *over* the bridge
b. La città è *al di là del/ oltre* il ponte [*on the other side of / beyond*]
- (3) a. Holidays are *over*
b. Le vacanze sono *finite*

The examples display different degrees of diagrammatic iconicity, viz. maximum degree in the case of (1), which coincides with the spatial proto-scene configuration of *over* (whereby the TR is higher than and proximal to the LM, see Tyler and Evans 2003: 64 ff.), and progressively lower degrees in (2), which represents the sense extension called the On-the-other-side-of sense, and (3), namely the so-called Completion sense (*ibid.*).

As for uniqueness, in the case of example (1) we have a high degree, as the only nearly synonymous option appears to be *above*, although with inevitable changes in the spatial configuration (i.e. the distance between TR and LM being greater in this case). In (2) we could resort to other locative expressions such as *beyond*, *on the other side of*, while for the adverbial particle or adprep (see Tyler and Evans 2003) in (3) we would have to use 'more divergent' participle forms corresponding to *finished*, *concluded*.

At a cross-linguistic or inter-systemic level, a 'second order' of uniqueness can be reckoned on the basis of items' productivity in translation, i.e. the degree to which a given option can be used to translate a sense compared to other near-synonymous options. For example, the *over-sopra* correspondence is stable in the case of (1 a – b), whereas the On-the-other-side-of sense is not licensed in the network of *sopra* (cf. the translations in 2 b). Inter-systemic uniqueness entails congruent evaluations in terms of a 'second order' of diagrammatic iconicity. Indeed, the higher the number and the divergence of 'competing' translation options for a given sense of a particle, the lower the degrees of uniqueness and diagrammatic iconicity between word-concept pairs in the two linguistic systems, thus reflecting a higher level of 'second order' complexity.

2.3 Data collection and elaboration

The main sources of data were dictionaries, along with corpora and

informants. In more detail, the analysis presented in section 3 is the result of the following stages of elaboration:

a) Random data samples of around 300 occurrences per particle in each language were collected from corpora,⁵ and the various concordances were matched, as much as possible, with the senses listed in dictionaries⁶ and in the networks of relevant particles as proposed by Tyler and Evans (2003). For the development of Italian networks, reference was made to Tyler and Evans's (2003) criteria mentioned above (§ 2.1). Corpora occurrences frequently displayed a conflation of senses, and sometimes the application of those criteria to the analysis was not straightforward and required subjective evaluation. In fact, the continually evolving nature of systems makes it difficult to keep the sense-use distinction constant, and further research from different perspectives (experimental and statistical) is needed for a more precise identification of the level of stability and conventionalisation of several of the emerging distinctions.

b) Analysis of lexical complexity at an intra-linguistic level: this stage consisted in identifying and approximately quantifying abstract and contextual variables constraining the senses in the networks of particles. The variables have been regarded as relevant dimensions for semiotic evaluations and correlated ordering of senses.

c) Analysis of lexical complexity at a cross-linguistic level: the extent of inter-systemic correspondence between major senses of particles was established on the basis of translation tasks (of English sentences into Italian) submitted to adult native Italians who were also proficient speakers of English (advanced level).⁷ For this stage of the analysis, the quantity and types of translation options have been regarded as the relevant basis for semiotic evaluations.

The rationale sketched thus far brings about a progression from the core of the networks' intersections to their periphery and to ever more divergent areas covering uses of particles that are exclusive to either language.

3. Analysis of examples of particles from the lower section of verticality

3.1 Core of the intersections

The examples below (some of which have already been mentioned but are proposed once more for convenience) differ, among other things, in terms of the distance between TR and LM, which is what seems to constrain the selection of the appropriate preposition(s) in some cases:

- (1) a. She found a letter *under* / *underneath* / (*beneath*) / **below* the carpet
- (2) a. A flock of ducks flew *below* / *under* / (*underneath* / *beneath*) the clouds

On the one hand, in (1) we have minimum or no distance between TR and LM, which excludes at least one out of the four prepositions of the English compositional set at issue.⁸ *Under*, in this context as well as in many others, appears as the most generally accepted option, with *underneath* here possibly emphasising the idea of 'hiddenness' (see Lindstromberg 1998: 152). On the other hand, in (2) we have the potential for maximum distance between TR and LM, which is preferably conveyed by *below*, although other options, besides *under*, are possible as slightly less automatic substitutes (depending on one's perspective).

As far as *under* vs. *below* are concerned, the cases in (1) and (2) appear as especially complying with the respective proto-scenes of these particles as proposed by Tyler and Evans's (2003: 121 ff.), viz. that for *under* involves a TR lower than and proximal (functional component) to a LM, while that for *below* involves a TR lower than and distal (functional component) with respect to a LM (where contact is excluded).⁹

Examples (3) and (4) below involve different degrees of distance between TR and LM which make them even more dependable on subjective interpretation. This is possibly the cause for the wide range of acceptable options there (especially in 4):¹⁰

- (3) a. The life jacket is kept *under* / *below* the seat (other less 'automatic' options are possible too)
- (4) a. A flock of ducks flew *under* / *underneath* / *below* / *beneath* the bridge

As for Italian, the proto-scene for *sotto* involves a TR lower than a LM but allowing for underspecification, as displayed by the pervasive use of the preposition in the subsequent translations of the preceding examples:

- (1) b. Ha trovato una lettera *sotto* il tappeto
- (2) b. Uno stormo di anatre è volato *sotto* le nuvole¹¹
- (3) b. Il giubbotto di salvataggio è posizionato *sotto* il sedile
- (4) b. Uno stormo di anatre è volato *sotto* il ponte

3.2 Periphery of intersections

As far as the networks of *under* vs. *sotto* are concerned, the examples below show that the prepositions appear to share the Less sense (cf. Tyler and Evans 2003: 124 ff.), i.e. the spatial configuration 'lower than' has been reanalysed as 'less quantity than'. In Italian, *sotto* can be used as a suitable translation option competing with other ones, also depending on the level of formality involved in each case, although in (7 a - b) the use of *sotto* in connection with a temporal span is quite awkward:

- (5) a. You can't drink here if you're *under* 21
b. È vietata la vendita di alcolici a chi è *sotto* i 21 anni / a chi ha *meno* di 21 anni [*less than*] / ai *minori* di 21 anni [*younger than*]
- (6) a. The government decided to exempt incomes *under* \$ 4,000
b. Il governo ha deciso di esentare i redditi *sotto* i / *al di sotto dei* / *inferiori ai* 4000 dollari [*lower than*]
- (7) a. It's impossible to run the marathon in *under* one hour
b. È impossibile fare / completare la maratona *in meno di* [*in less than*] un'ora / **sotto* un'ora

Another sense in the network for *under* which appears to be licensed, to a large extent, in the network for *sotto* too is the Control sense (*ibid.*), viz. 'being under a LM' is reanalysed as 'being under its control or influence'.¹² Once again, the Italian data display both converging translations and more deviant ones (esp. see 11 a – b). In the case of (10 a – b), a literal translation is possible, but the use of the divergent idiomatic expression proposed below would be a more natural option, cf.

- (8) a. George works *under* his father's close supervision at the family business
b. Nell'azienda di famiglia George lavora *sotto* l'attenta supervisione / il controllo del padre
- (9) a. *Under* pressure
b. *Sotto* pressione
- (10) a. He was caught driving *under* the influence of alcohol
b. È stato sorpreso alla guida *sotto* l'effetto dell'alcol / *in stato di ebbrezza* [*in a state of inebriation*]

- (11) a. Philip felt himself *under* obligation to attend the new boss's party
 b. Filippo *si è sentito obbligato / in dovere di* [*sentirsi in dovere di – be obliged*] andare alla festa del nuovo capo

Another consequence of a TR being in a lower position than and proximal to a LM is that of the TR being covered by the LM (Tyler and Evans 2003: 125). The Covering sense can be conveyed by both prepositions in questions, although the cross-linguistic mapping does not coincide all the time (esp. see 14 a – b below):

- (12) a. *Under* a false name
 b. *Sotto* falso nome

- (13) a. The curator keeps the pictures hanging in the gallery *under* glass to protect them
 b. Il curatore tiene le immagini della galleria *sotto* vetro / il curatore espone le immagini nella galleria *protette* da [*protected by*] un vetro

- (14) a. He hid his yawn *under* a cough
 b. Ha mascherato lo sbadiglio *con* [*with, by means of*] un colpo di tosse

As far as the networks of *below* vs. *sotto* are concerned, The Next-one-down sense of *below* (*ibid.*) is shared by *sotto* in spatial settings as in (15 a – b), but divergence emerges in more abstract contexts as in (16 a– b), where the Italian version hinges upon the front-back axis to express temporal precedence, cf.

- (15) a. His office is *below* mine
 b. Il suo ufficio è *sotto* il mio

- (16) a. She is in the year / class *below* me
 b. (Lei) è un anno / in una classe *indietro* [*behind*] rispetto a me

Some degree of competition among translation options is also displayed by the following data, which represent the Topographical distance sense (*ibid.*), cf.

- (17) a. The hydroelectric station is five miles *below* the dam
 b. La centrale idroelettrica è (situata) 5 miglia *sotto* la diga / a valle [*downstream*] della diga

A Metalinguistic sense (not included in Tyler and Evans's PPN for *below*) appears to be derived from the preceding Topographical distance one (the sense is frequently instantiated in my data), cf.

- (18) a. See below
b. v. *sotto*

The PPN for *below* too has a Less sense (Tyler and Evans 2003), esp. meaning 'lower than a certain level or degree', cf.

- (19) a. The temperature dropped *below* freezing
b. La temperatura è scesa *sotto* zero
- (20) a. The European stock markets fell *below* their lowest levels for half a century
b. I mercati azionari europei sono scesi *sotto* i / *al di sotto dei* / ai livelli più *bassi* [*lowest levels*] da / in 50 anni

The network for *below* also covers an Inferior sense (Tyler and Evans 2003: 129), as exemplified by the cases that follow.¹³ However, while (21 b) has *sotto* as suitable translation, in (22 b) the use of *sotto* would be awkward, as it would trigger, or at least be ambiguous with, the Control sense, so that different substitutes or paraphrases seem necessary in this context, cf.

- (21) a. *Below* average
b. *Sotto* la media
- (22) a. I don't interact with Alan much, as he is *below* / *beneath* me in the law firm
b. Non interagisco molto con Alan, dal momento che è *al di sotto di* me nello studio legale / [...] nello studio legale è un mio *subalterno* [*subordinate*] / (*sotto* di me)

3.3 Divergences

Among the exclusive senses of *under* vs. *sotto*, there is what Tyler and Evans (2003: 127) call the Non-existence sense of *under*, cf.

- (23) a. The business went *under*
b. L'azienda è *fallita* [*bankrupt*]

The non-spatial use of the Next-one-down sense of *below* also belongs here (recall e.g. 16 a – b).

The following examples represent exclusive cases of *sotto*: the Italian example in (24 a) displays a Temporal use that could be traced back to the Control sense, and which is translated into English (24 b) via a different preposition, cf.

- (24) a. *Sotto* Natale
b. *At* Christmas (time)

Examples (25) and (26) below could be regarded as another development of the Control sense, whereby emphasis is placed on the consequence of a controlling or influencing process and the TR is reanalysed as Focus-of-attention subjected to that process:

- (25) a. Essere *sotto* i riflettori
(26) a. *Sotto* questo aspetto

Notice the opposite configuration (*sotto* vs. *on*) summoned by the English translation in (25 b), as well as the divergent translation of (26 b),

- (25) b. To be *on* the spot
(26) b. *From* this viewpoint

The examples in (27 a - b) propose a spatial arrangement underlying divergent experiences and correlated configurations of the LM 'rain', i.e. while Italian recruits a vertical alignment, English opts for a 'full immersion', cf.

- (27) a. Camminare *sotto* la pioggia
b. To walk *in* the rain

Another case of divergent use is provided by the following example, where a consequence of an unfortunate event, rather than the event in itself, seems to come to the fore:

- (28) a. Finire / andare *sotto* una macchina
b. To be run *over* [by a car]

Further data analysis is obviously necessary, to shed more light on the other members of the English set (*underneath* and *beneath*) and to come to terms with the high degree of idiosyncrasy of divergent cases, which are often found in connection with phraseological and idiomatic expressions.

4. An exploratory test with students

A translation task was submitted to 46 Italian students in their first year of a specialised degree programme in translation from English into Italian (Faculty of Foreign Languages and Literature of the University of Pisa).¹⁴ The students had to translate 35 English sentences containing different particles (cf. *over*, *through*, *under*, *below*, *beneath*, *up*, *down*) and covering both spatial and non-spatial uses. Below are the results concerning some of the most problematic cases that emerged in relation to 22 sentences involving particles of verticality in the lower section (with the exclusion of orientational ones, viz. *up* and *down*):

- the Inferior sense of *below* (in 'I don't interact with Alan much, as he is *below* me in the law firm') was problematic for 20% of students, who either provided a wrong translation or no translation at all;
- the Inferior sense (with negative connotation) of *beneath* ('John acted in a manner *beneath* him') was problematic for 35% of students, who either provided a wrong translation or no translation at all;
- percentages predictably increase even more in connection with opaque phraseological units ('the firm went *under*', which 41% of students had problems with) and collocations ('beneath contempt', which 89% of students had problems with).

Although the test layout (in terms of some sentences' co-text, or lack of co-text in the case of 'beneath contempt') might have influenced the poor performance in some cases, and revision before replication of the experiment is surely necessary, the overall outcome appears to confer significance to the general hypothesis of difficulty involved in the mastery of non-spatial and cross-linguistically divergent uses of particles. Pedagogical resources that take such constraints as spatial vs. non-spatial configuration and contrastive divergence among the variables for organisational purposes thus appear relevant and useful.

5. Concluding remarks

More refined and in-depth analyses of further data are obviously needed. Also, converging evidence from multiple sources is of great importance for the corroboration and / or revision of hypotheses. As suggested by Evans (2010),

among others, evidence should take the form of psychological testing and application of statistical techniques (cf., e.g., Gries 2006, Gries and Divjak 2010), so as to discriminate between more stable senses vs. uses of particles. Experimentation within the classroom (similarly to what carried out, for instance, by Tyler 2008 with modals) is also important for the corroboration and enhancement of data organisation.

Even though much work still lies ahead, what is proposed in the preceding sections can be viewed as a matrix for explaining extended uses of particles in the EFL classroom, i.e. as a pivot for the implementation of a lexicographic resource with a motivated organisation of extensive contrastive examples in different contexts of use, beneficial, for example, for a correct use and interpretation by advanced learners, and possibly for a more immediate retrieval of functional equivalents in translation, too, especially in the case of phraseological expressions, in order to avoid calques.

In spite of past criticism levelled at radial categorisation (see, e.g., Sandra and Rice 1995, Rice 1996), the latter is in fact at the basis of many cognitive linguistics inspired applications to the teaching of English vocabulary in the second and foreign language classrooms which have been proposed over the past fifteen years (e.g. Lindstromberg 1998, Dirven 2001, Rudzka-Ostyn 2003, Tyler and Evans 2004, Condon 2008; also see Boers and Lindstromberg 2006, 2008 and references therein). Indeed, recent experimental work on the effectiveness of Cognitive Linguistics inspired methods in the classroom provides empirical evidence in favour of such methods (see Boers and Lindstromberg 2006). In addition, current work in Second Language Acquisition is starting to show the benefits of using explicit contrastive analysis and translation in form-focused instruction for the teaching of English vocabulary to adults (Laufer and Girsai 2008).

The main distinctions within a radial category (main senses vis-à-vis the proto-scene) are more likely to be useful at early stages of learning, while subtler distinctions at the periphery of categories are a good candidate for explicit instruction at more advanced levels, as simple exposure does not (always) seem to be enough for their learning. Although the 'quest for motivation' should not be pushed too far, especially at early stages of the learning process, at more advanced levels some extra-knowledge may be the only means to achieve 'conceptual learning', as automatic learning of native-like accuracy and fluency does not guarantee full understanding, for instance, of the distinctions underlying similar uses of different particles.

Notes

¹ In the relevant literature, the word *particle* tends to be used as a neutral designation for the two distinct but overlapping categories of spatial prepositions and adverbs which follow the lexical verb in verb-particle combinations (e.g. English phrasal verbs).

² See Brugman (1981), Brugman and Lakoff (1988), Lakoff (1987).

³ The primary sense, that is, is involved in the majority of the distinct senses found in the network. For other criteria for determining the primary sense or proto-scene of networks, see Tyler and Evans (2003: 47 ff.), who build on Langacker (1987: 376).

⁴ In this regard, Evans (2010) underlines the relevance of the proposals outlined, respectively, in Sandra and Rice (1995) and Gries (2006).

⁵ The *British National Corpus* was accessed by means of the Sketch Engine, see Kilgarriff *et al.* (2004), while for Italian, reference was made to *La Repubblica Corpus* online.

⁶ On the Italian side are De Mauro (2000) and Zingarelli (2004); on the English side, cf. Sinclair *et al.* (2001), the *Oxford English Dictionary* online and Webster online; bilingual dictionaries were consulted, too, viz. Picchi (1999) and Garzanti online.

⁷ The sentences for the tasks were mainly taken from Tyler and Evans (2003).

⁸ Although Lindstromberg (1998: 154) includes *beneath* in the range of prepositions of the set in cases similar to the one portrayed in example (1), where there is contact between TR and LM, native English informants recruited for the present study were not unanimous in their acceptance of *beneath* in this context.

⁹ Contact between TR and LM is possible in the case of the Next-one-down sense of *below*, mentioned in 3.2.

¹⁰ Lindstromberg (1998: 155), however, states that *below* 'seems to be little used as a preposition of path' in examples such as the one proposed in (4).

¹¹ '*Sotto le nuvole*' is far less frequent than '*below the clouds*'. Another translation option could be the longer expression '*al di sotto delle nuvole*', as well as the paraphrase '*basso nel cielo*' [low in the sky].

¹² This label (including social influence too) is used by O'Keefe (1996: 306).

¹³ O'Keefe (1996: 306) talks about inferiority applying to 'social status'.

¹⁴ The course in question was *Corso di Laurea Magistrale in Traduzione Letteraria e Saggistica*. The test took place in the spring of 2012. All the participants had a BA Degree with B2/C1 competence in the English language. A translation task, rather than a description of images, was chosen so as to evaluate the level of difficulty possibly experienced by students of this level of expertise in connection with certain uses of particles (no dictionary was allowed).

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