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REFERENCE TO STATIC SPACE IN GREEK: A CROSS-LINGUISTIC AND DEVELOPMENTAL PERSPECTIVE OF POSTER DESCRIPTIONS

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Περίληψη

Με στόχο μια πληρέστερη ανάδειξη των εκφράσεων τόπου της ελληνικής, εξετάζονται περιγραφές αφίσας από ενήλικες σε σύγκριση μάλιστα με αντίστοιχα δεδομένα από δεκάχρονα παιδιά και άλλες γλώσσες. Οι εκφράσεις των ενηλίκων αποδεικνύονται πιο συχνές, ποικίλες και περίπλοκες από των παιδιών, περιλαμβάνοντας λ.χ. ακόμη πιο σύνθετες και αφηρημένες προθετικές φράσεις όπως «στο βάθος της πλατείας» ή στοιχεία κίνησης όπως «προς». Ωστόσο, πριμοδοτούνται πάντα απλές προθετικές φράσεις ουδέτερης τοποθέτησης με «σε» έναντι πιο εξειδικευμένων σημασιολογικά όπως με 'on' και 'in' στα αγγλικά. Η διαγλωσσική διαφορά στη λεκτική αναπαράσταση του τόπου ίσως εξηγεί και τη σχετικά περιορισμένη πυκνότητα πληροφοριών χώρου στις ελληνικές περιγραφές.

Keywords: spatial language, static space, locatives, cross-linguistic differences, language acquisition, descriptive discourse, Greek

1. Introduction

This paper aims at contributing to how space is construed in language through a description of static spatial expressions in Greek. Previous research has shown commonalities across languages but also differences even among closely related languages like English, French and Italian not merely in the forms but also the concepts coded (e.g.

Becker & Carroll 1997, Levinson 2003). For instance, the somewhat equivalent words *on* in English and *su* in Italian differ fundamentally according to Becker and Carroll: *on* is used only for contiguous entities (e.g. *the book on the table*), whereas *su* also subsumes non-contiguous ones (corresponding to English *over*; also see Skopeteas 2007 on cross-linguistic differences regarding the coding of superior, contact and non-contact). Such differences often stump second language learners and suggest different cognitive construals of spatial relations (e.g. Vandeloise 2006), however much these construals may be perceptually and socially constrained according to some theoretical approaches (see e.g. Hendriks, Hickmann & Lindner 2010).

Previous descriptions show Greek coding locative relations, like other Indo-European languages, prototypically through prepositions and adverbs. These moreover appear in four possible ways (see e.g. Theofanopoulou-Kontou 1992, Tachibana 1994, Skopeteas 1999, 2007, Bortone 2010): a) adverbs alone (example 1), b) the preposition *apo* 'from/off/out of/over/by/through/to' + adverb (example 2), c) simple prepositional phrases (PPs) with the prepositions *se* 'in/at/on' or *apo* whose noun phrase (NP) specifies the landmark relative to which an entity is placed (example 3), d) complex PPs, which involve an adverb and a simple PP (example 4).[1]

(1) μέσα έχει μια κυρία
in/inside has a lady
'Inside [the kiosk] there is a lady.'

(2) από πάνω στέγες
from above roofs
'Above roofs.'

(3) σ-την πλατεία ένα περίπτερο
in/at-the square a kiosk
'In the square a kiosk.'

(4) δίπλα σ-το δέντρο είναι ένα κιόσκι
next-to in/at- the tree is a kiosk
'Next to tree there is a kiosk.'

1 The examples in the paper come from our data.

Nonetheless, we feel the need for a more detailed description for two reasons. For one, languages also employ less prototypical means of coding location such as verbs and nominals (e.g. English *to lie* and *to the right*, respectively). In addition, descriptions of Greek (e.g. Zafeiriadou 2010) have overwhelmingly drawn from written discourse, in fact primarily literary (e.g. Tzartzanos 1996). However, the range of options offered by a language but also its speakers' habits in exploiting them can be fully revealed only if we analyze oral discourse as well.

We studied, more specifically, oral descriptions of a poster. This type of discourse favors locatives, notably more than narratives do (see Hendriks, Watorek & Giuliano 2004) and we also assume conversations. Also being extended discourse it provides more opportunities for locatives relative to isolated sentences describing simple scenes in most previous experimental studies of spatial language (e.g. Hickmann & Hendriks 2006; also Skopeteas 2007 on Greek).

We focus upon locatives used by adults, but approach them through a cross-linguistic as well as developmental perspective. This can reveal expressions which are more typical or used solely by Greek-speaking adults. It is also feasible because data has been collected through the very same method from adults and children in Greek and other languages, including English, French, Polish (Hendriks et al. 2004, Watorek 2004, Hendriks & Watorek 2012), Italian (Giuliano, D'Ambrosio & Greco 2003), Chinese (Ji 2007) and Arabic (Hirzalla 2007), within a project with wider aims (see originally Watorek, Lambert & Perdue 2002). We will in fact compare the descriptive texts of adults with those of children aged 10 years. This was the most advanced child age in the project, but also the one claimed to coincide with mastery of static spatial language (see e.g. Hendriks & Watorek 2012, but also Graf 2006, 2010 for similar claims regarding conversations).

2. Method and data analyses

The data were collected from 10 speakers per age group, as in related studies, through a poster depicting a town centre. This complex scene offers abundant chances for locatives, enhanced by asking participants to describe it to an interlocutor who would draw it with no visual access to it.

We analyzed the descriptions in terms of density and type of locative information. In establishing a corpus of locative expressions, we included besides prepositions and

adverbs nominals functioning as adverbials, e.g. *t' aristera* in (5) (noted *in passim* for Greek by Bortone 2010).

(5) σ-τ' αριστερά μας υπάρχει ένα ποδήλατο
in/at-the-pl left-pl our exists a bicycle
'On our left there is a bicycle.'

We excluded locatives not related to the prototypical spatial elements of prepositions and adverbs, such as posture verbs (e.g. *kathete* 'sit-3sg'), as have all related studies. Undoubtedly, these should be taken into account in the future.

The density of locative information was computed as follows: We counted the length of each descriptive text in terms of propositions and subsequently the percentage of propositions containing locatives but also the number of locatives as some propositions contain more than one.

We identified types of expressions on the basis of the theoretical assumption of cognitive/functional linguistics that meaning is inseparable from form (e.g. Langacker 1987). More specifically, we noted the range of expressions and thus concepts. We find such a data-driven description a necessary starting point for any essential cross-linguistic comparison (see e.g. Halliday 2002), instead of supposing universal concepts and language-particular forms. After all, universality is argued for only at a deeper level (e.g. Johannes, Wang, Papafragou & Landau 2015) and at the same time questioned by extensive research showing differences on how space is construed across languages (e.g. Levinson 2003). Comparison with other languages can, however, be made feasible by grouping expressions into larger categories.

We found useful the distinction of expressions into topological and projective, as in many previous studies including the related ones based on Watorek et al. (2002). Following Skopeteas (1999) on Greek (who draws from Klein 1991) but also Becker and Carroll (1997) amongst others, we defined topology as locating entities relative to finite areas and projection as locating entities towards a certain direction in a space construed as infinite (e.g. *in* vs. *in front of*). We then identified various subcategories, shown in the results.

3. Results

We begin with a developmental perspective of the data. For one, adults produced much lengthier texts than children, on average 66 propositions relative to 34. However, density of locatives increased less dramatically, from 46% of propositions with locatives to 57% and from 1.34 to 1.37 locatives per utterance. Secondly, regarding types of expressions the most notable development is the increase of projectives but also of the most complex type of topologicals. Both categories increase from 43% to 60% in adults and include more complex expressions formally and conceptually.

More particularly, projectives increase from 36% to 48% of the total. We included in them all directional locatives, whether involving the three dimensional axes of verticality (e.g. *apo pano* in 2 earlier), sagittality (e.g. *piso apo* in 6) and laterality (e.g. *s-t' aristera* in 5 earlier) or leaving the direction unspecified as in (7) or (8) typically through PPs with the locative nouns *meria* or *plevra* 'side/part'. Non-axes-based directionals have also been recognized by Tutton (2016), who calls them *non-specific*, but have not been counted separately in related studies (even though Hendriks & Watorek 2012: 411 mention French *vers* 'towards').

(6) πίσω από το άγαλμα διαγώνια υπάρχει ένας τύπος με καπέλο
behind from the statue diagonally exists a guy with hat
'Behind the statue diagonally there is a guy wearing a hat.'

(7) υπάρχει μια στάση λεωφορείου προς τον δρόμο
exists a stop bus-gen towards the street
'There is a bustop on the side of the park facing the street.'

(8) απ' τη μια μεριά […] είναι η πόρτα
from/on the one side […] is the door
'On one side […] there is the door.'

Developmentally, verticality expressions, though predominant at 10 years, are notably restricted in favor of all other types. Adults use above all sagittal and to a lesser extent lateral, followed by vertical and, finally, non-specific expressions.

The three later flourishing types of projectives involve more non-prototypical and also complex expressions, used marginally or not at all by children. These include: a)

PPs with prepositions signaling dislocation directly or indirectly, more particularly fictive motion or scanning over the poster (see e.g. Talmy 2000), i.e. *pros* 'towards' (see 7 earlier), *mexri* 'up to', finally *apo* (a marker associated with distant entities and dislocation by Zafeiriadou 2010 and Skopeteas 1999) (see 8 earlier). b) PPs including complex NPs with two nouns, one being a genitive denoting an entity and the other specifying the spatial relation as in (9). c) Non-specific directionals not only with the above mentioned PPs but also elements adding geometric information (e.g. *dhiaghonia* 'diagonally' in 6 earlier).

(9) σ-το βάθος της πλατείας υπάρχει ένα δρομάκι
in/at-the depth the-gen square-gen exists a street-dim
'In the background of the square there is an alley.'

The increase of projective expressions is coupled with an increase of dynamic construals of location more generally. Almost all adults exploited motion verbs in describing location, while this occurred only marginally in two children. These involve fictive motion, appearing either as a journey of the interlocutors over the scene (10) or of entities of the poster relative to a stationary observer (11).

(10) συνεχίζουμε προς τα πάνω
continue-1pl towards the-pl on/up/over
'We continue upwards.'

(11) αυτό προχωράει σ-το βάθος
this proceeds to-the depth
'This [building] goes towards the background.'

Topological expressions remain more frequent than projectives even in adults but appear in three generic sorts: deictic (e.g. *eki* 'there'), neutral 'at place' (e.g. *s-tin platia* in 3 earlier) and specific (see Watorek's 2003 similar scheme). The specifics were further subdivided into: a) basic relations of inclusion, exclusion and contact/support which can be established objectively (example 1 earlier illustrates inclusion), b) subjective relations whereas the speaker estimates proximity and distance of entities (see 4 earlier) and c) complex relations which mostly refine basic relations (e.g. specialized inclusion in 12).

(12) μια κυρία μες σ-τη μέση του δρόμου
a lady inside in/at-the middle the-gen street-gen

'A lady in the middle of the street.'

Only the complex subcategory increases developmentally, in fact doubling its proportion from 11% to 22% within topology. However, neutral 'at place' locatives remain quite notable even in adults at 41% of topologicals (relative to 40% in children). On the other hand, deictics decrease to 13% from 19% in children.

It is with complex topologicals more particularly that adults use new expressions or increase those used marginally by children, as in the case of projectives. New concepts include, for instance, interposition and center of a region (subtypes of exclusion and inclusion, respectively) not only with free adverbs and complex *se* PPs as in children (13) but also complex *apo* PPs with new adverbs (e.g. *endhiamesa* 'between' in 14).

(13) έχει ένα περιπτεράκι ανάμεσα σ-τα δύο κτίρια
has a kiosk-dim between at-the two buildings

'It's got a small kiosk between the two buildings.'

(14) ενδιάμεσα από αυτά τα δύο τ' αυτοκίνητα […] είναι μια κυρία
between from these the two the cars […] is a lady

'Between these two cars […] there is a lady.'

'Across from' relations more particularly (a type of specialized exclusion) are coded not only through complex *apo* PPs as in children but also locative nouns like *fatsa* 'across from' (lit. 'face') used adverbially (15).

(15) φάτσα σου πίσω […] πάλι δύο κτίρια
face you-gen behind […] again two buildings

'Across from you in the background […] another two buildings.'

More generally, the move towards greater specification of spatial relations through more projective and complex topological expressions is also seen in the following developments: For one, increased combining of locatives in the same proposition (e.g. 6 earlier). Secondly, quantifying of placement relative to a certain direction or area

through greater use of a) iconic repetition of adverbs or nominals used adverbially (*ghonia ghonia* in 16), b) comparative modifiers (*pio* 'more/further' in 16 again).

(16) έχει ένα περίπτερο, όχι γωνία γωνία, λίγο πιο μέσα
has a kiosk not corner corner a-bit more inside

'There is a kiosk, not exactly in the outer corner, a bit further inside.'

4. Discussion and conclusion

We now discuss our findings, including the developmental changes, through a cross-linguistic comparison. We see this comparison as highlighting certain tendencies of Greek in coding locative information, which differ in some ways from those of languages studied within the Watorek et al. (2002) project. Greek speakers use more deictic and, above all, more neutral locatives and thus less specific topologicals and projectives. They also provide less locative information, in spite of adults enriching the frequency and range of locative expressions relative to children.

We begin with projectives, which increase more than topologicals in adults. This is expected given previous claims about their greater formal and semantic complexity and later acquisition relative to topological expressions (e.g. Piaget & Inhelder 1967, Johnston & Slobin 1979, Graf 2006). The later flourishing of the two horizontal axes more particularly has been widely noted, often including the later emergence and lower frequency of laterals over sagittals. Indeed, we also found laterals developing largely in adults, as expected given previous claims as to their greater cognitive complexity due to their totally subjective viewpoint of relata (e.g. Graf 2006) but also its greater restriction in various ways across languages (e.g. Levinson 2003). We also found more dynamic construals of static space in adults (as expected e.g. by Talmy 2000; also see Carroll & von Stutterheim 1993 on data from English and German). Moreover, we noted geometric information more frequently, which is indeed taken as more demanding cognitively (e.g. Piaget & Inhelder 1967) and thus not surprisingly coded through more abstract adverbs and nominals. However, projectives increase earlier and to a greater extent in some languages over others, surpassing topological ones even at 7 years in French but not even in adults in Greek and Polish (Hendriks & Watorek 2012). Different preferences for conceptualizing the same situation have

been noted across languages, including for instance projective depth expressions in French (e.g. *au premier plan* 'in the foreground') as against topological 'far' ones in English (Tutton 2016; also see Ji's 2007 related study of English vs. Chinese). They have been moreover ascribed to predominant linguistic conventions, concerning above all the range of expressions but also their combinatorial possibilities. In addition, Greek speakers use less specific topologicals relative to speakers of French and English at least in related studies even with basic relations such as inclusion and contact/support (see e.g. Watorek 2004).

Overall however, specification of spatial relations through topological and projective expressions increases in Greek adults relative to children. Yet, the most striking tendency of Greek is the preference for neutral 'at place' locatives, at 21% of all expressions even in adults (relative to 26% in children). By contrast supposedly neutral locatives like English *at* are very restricted in most languages of the Watorek et al. (2002) project (with the exception of Arabic) and in other studies more generally (e.g. Sinha, Thorseng, Hayashi & Plunkett 1994). Moreover, Greek neutral locatives consist largely of simple *se* PPs, the most frequent of all locative expressions across ages, at 18% for 10-year-olds but still at 14% for adults. In fact, use of *se* is even more frequent if we take into account, amongst others, abstract PPs which we categorized as complex topologicals or projectives (e.g. *s-to vathos* 'in the background'). This tendency reinforces the idea that Greek is a place-prominence language, as Becker and Carroll (1997) have called languages like Spanish and Arabic which prefer a general in meaning preposition simply positioning entities at a place. These languages specify details of location mainly with adverbs or leave them implicit. By contrast, subspace-prominence languages like English force the use of prepositions coding specific spatial relations. This is clearly illustrated when the same detail of the poster is described in Greek as *s-to pagaki*, *s-ton dhromo* but in English[2] as *on the bench*, *in the street*, etc., thus suggesting once again differential construal of a scene.

Our Greek data also includes notable use of deictics. Although deictics decrease developmentally in accord with previous findings and claims that speakers become less egocentric with age (e.g. Graf 2006), they have practically disappeared in other languages at even earlier ages (e.g. see Hendriks & Watorek 2012 for 1% or less at 10 years in French, English and Polish). However, in Greek they are largely not exophoric but endophoric, including cataphorics specified by an ensuing *pu* 'where' clause (17).

2 The English data were provided to us by H. Hendriks and M. Watorek.

(17) εκεί που είναι το περίπτερο είναι κι ένα άγαλμα
there where is the kiosk is and a statue

'At the kiosk, there is also a statue.'

Endophoric deictics have not been noted in the related studies, while particularly the cataphoric *eki pu* 'there where' constructions seem unnatural in English at least. It seems that the structure of Greek favors such discourse-dependent expressions.

We end by noting that the density of locatives remains lower in Greek adults at 57% relative to related studies, where it is quite notable in some languages, e.g. 91% in Chinese and 72% in English (Ji 2007). Moreover, while Hendriks and Watorek (2012) report density peaking at 10 years in English, French and Polish, this occurs only in adults in Greek. We suggest that lower density in Greek may reflect the preference of place-prominence languages to locate entities simply at a place and to leave specific relations more implicit. Of course, a more reliable comparison of density would need additional measures, such as locative verbs and propositions with more than one locative. The latter increase in Greek, but we have no precise data from related studies (see nonetheless Ji's 2007 mentioning of such propositions in her study of English- and Chinese-speaking adults, also Graf's 2010 findings on their developmental increase in English conversations).

We conclude that speech corpora – even semi-experimentally elicited ones – can enrich and refine descriptions of locative expressions, especially when the communicative situation favors their use. Our developmental perspective allowed us to chart besides typical locative expressions also less typical and apparently more demanding ones conceptually and formally used mostly or solely by adults. Moreover, we have shown that a cross-linguistic comparison of speaker habits can contribute to the synchronic description of languages, including their typological characterization either as place- or subspace-prominence in the coding of static space, especially when based on speech produced in the same communicative situation.

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