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Encoding spatial relations: language typology and diachronic change in Greek*

Abstract

While motion verbs in some languages display selectional restrictions for their spatial complements, motion verbs in other languages freely combine with any type of spatial complement. In the course of Greek history, two inter-related typological transitions take place: In Classical Greek, selectional restrictions emerge in the subcategorization frames of motion verbs as a result of reanalysis; in Post-Classical Greek, prepositions, cases, and adverbs abandon the distinction between static and dynamic spatial relations.

Ενώ τα ρήματα κίνησης κάποιων γλωσσών εμφανίζουν περιορισμούς επιλογής σχετικά με το συμπλήρωμά τους, τα ρήματα κίνησης άλλων γλωσσών συνδυάζονται με διαφορετικούς τύπους συμπληρωμάτων. Κατά την ιστορία της ελληνικής γλώσσας λαμβάνουν χώρα δυο συσχετιζόμενες τυπολογικές μεταβολές: στην ελληνική της κλασσικής περιόδου, τα ρήματα κίνησης αναπτύσσουν τέτοιου είδους περιορισμούς· στην ελληνική της μετα-κλασσικής περιόδου, οι προθέσεις, οι πτώσεις και τα επιρρήματα χάνουν τη διάκριση μεταξύ στατικών και δυναμικών σχέσεων στο χώρο.

1. Syntax and semantics of spatial relations

Cross-linguistic differences in the syntax-semantics interface have been captured within the framework of **lexicalization patterns** (see Talmy 1985; 2000), which is based on the idea that languages differ in the way semantic components are distributed over syntactic constituents. The range of phenomena that are accounted for in this framework includes statements of the type "a given concept *a* is encoded in language *x* through category *i* (e.g., verbs) while in language *y* the same concept is encoded through category *j* (e.g. prepositions)". An implicit assumption of such statements is that the notion of 'encoding' is restricted to information that is part of the lexical meaning. What is ignored, is relational information, i.e. the several restrictions that are located in the subcategorization frames of the involved constituents (e.g., in verb valency). The theoretical aim of this paper is to defeat this assumption in showing that subcategorization restrictions have a crucial contribution to the semantic decomposition of the clause in determining the set of possible permutations of semantic components in a given language.

Spatial expressions serve to localize a referent relative to another referent, whose location is typically assumed to be already known in discourse. In the following, the localized

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referent is termed 'localized object' and the referent which serves as a reference point for the localization of the localized object is termed 'reference object'. The spatial relation may be static ([–dyn]) or dynamic ([+dyn]) depending on whether the location of the localized object changes in time with respect to the location of the reference object or not.

Languages of the world differ with respect to the patterns they use to convey this distinction: some languages lexicalize this distinction through the verb, whereas other languages distinguish motion and location through the combination of the verb with a relational element (cf. LEHMANN 1992: 632–634). Very different relational elements are employed cross-linguistically such as prepositions, cases, and several classes of affixes that share the common property of being part of the verb's sister node that contains the reference object and are termed 'spatial relators' in the following (see TALMY 1985: 102; 2000: 101).

Languages that encode spatial relations through the verb are exemplified in (1) from Yucatec Maya. The contrast between the verbs *yàan* 'exist' and *òok* 'enter' denotes the opposition between a static relation (1a) and a dynamic relation (1b) while the choice of preposition is not influenced by the spatial relation involved (cf. GOLDAP 1992: 618–622; LEHMANN 1992: 634 ff.; BOHNEMEYER 1997: 83).

(1a) *le* *ch'o'-e'* *ti'* *yàan* *ich* *u* *y-àaktun-e'*
DEF mouse-D3 there exist in POSS.3 0-hole-D3
'the mouse is in its hole' [LEHMANN 1992: 634]

(1b) *le* *ch'o'e* *h* *òok* *ich* *u* *y-àaktun-e'*
DEF mouse-D3 PAST enter(ABS.3.SG) in POSS.3 0-hole-D3
'the mouse entered into the hole' [LEHMANN 1992: 634]

Yucatec Maya has two classes of motion verbs (cf. BOHNEMEYER 1997: 83): inactive intransitive verbs like *òok* 'enter' in (1b), and active intransitive verbs like *hùilankil* 'creep' indicating manner of motion. Whereas the inactive intransitives indicate a change of spatial relation (see [1b]), the active intransitives – when used with spatial adjuncts – indicate motion-in-location, i.e., motion of the localized object without any change in its relation to the reference object (see [2]).

(2) *Pèedro-e'* *h* *xíimbal-nah* *ich* *le* *k'áax-o'*
Peter-D3 PAST walk-CMPL in DEF forest-D2
'Peter walked in the forest'

In other languages, the distinction between static and dynamic relations is expressed through the combination of the verbs with a relational element. In German, a static relation is encoded through a static verb which is obligatorily used with a preposition taking a dative complement (see [3a]).[1] A dynamic relation is encoded through a motion verb and its directional argument, i.e. a PP with an accusative complement (see [3b]). Moreover, motion verbs might be used with an adjunct PP with dative which indicates motion-in-location (see [2]), i.e., the movement of the localized object in space does not influence its spatial relation to the reference object (see [3c]).

[1] The contrast between dative and accusative complements is possible for a subset of German prepositions; for an overview see PITTNER (1999: 60–74).

(3a) *er* *liegt* *auf* *der/*die* *Straße*
3.SG:NOM lie:3.SG on DEF:DAT.SG.F street.F:SG
'he is lying on the street'

(3b) *er geht* *auf* *die* *Straße*
he go:3.SG on DEF:ACC.SG.F street.F:SG
'he goes onto the street'

(3c) *er* *geht* *auf* *der* *Straße*
he go:3.SG on DEF:DAT.SG.F street.F:SG
'he walks on the street'

The data presented so far reveals a twofold typology between languages of the Yucatec Mayan type, that encode the component [±dyn] in the verb, and languages of the German type, that encode the component [±dyn] through a combination of the verb with a relational element in the verb's sister node. However, this analysis does not account for the interplay of the relational information of the verbs that underlies the contrast between (1b) and (2) in Yucatec Maya and (3b) and (3c) in German. In the former contrast, two different motion verbs form part of an expression of static spatial relation in (2) and an expression of dynamic spatial relation in (1b). In the latter case, it is assumed that motion verbs license a [+dyn] complement which accounts for the difference between (3b) and (3c).

Moreover, the relational information of the verb is subject to typological variation. In languages of the German type, the component [±dyn] of the relational element is selected by the verb. However, this does not hold for Bahasa Indonesia, in which all logically possible permutations between static/dynamic verbs and static/dynamic relational elements are available. The critical example is (4b), which shows that a [+dyn] preposition may occur with a non-motion verb and this combination is accommodated semantically.[2]

(4a) *kita* *mau* *makan* *di* *réstoran*
1.PL.IN want eat at restaurant
'we want to eat in the restaurant'

(4b) *kita* *mau* *makan* *ke* *réstoran*
1.PL.IN want eat to restaurant
'we want to go to the restaurant and eat (there)'

(4c) *mereka* *lari* *ke* *Jakarta*
3.PL run to Jakarta
'they run to Jakarta'

(4d) *ani* *lari* *di* *stadion* *senayan*
Ani run at stadion Senayan
'Ani runs in stadion Senayan'

In order to account for these data, a typology with two independent factors is needed. The first factor is the availability of spatial relators that are sensitive to the [±dyn] distinction. This factor distinguishes Yucatec Maya from German and Bahasa Indonesia. The

[2] A further language exemplifying this type is Ewe (see AMEKA 1995: 141f.).

second factor is verb valency and relates to the availability of selectional restrictions in the subcategorization frame of the verb. This distinction allows for the typological differentiation between German and Bahasa Indonesia (see Table 1). A fourth possible language type is predicted by this typology, namely one which encodes the component [±dyn] neither through the spatial relator nor with the selectional restrictions of the verb. In this language type, the distinction among static and dynamic events is subject to pragmatics; however, no language is found in which this typological pattern is pervasive for the lexicalization of spatial relations. Hence, the distribution of typological properties in Table 1 suggests the following (tentative) implication: 'If a language does not encode spatial relation through the spatial relator, then it displays selectional restrictions on the V'.

	relator	selectional restrictions of the V
Bahasa Indonesia	+	–
German	+	+
Yucatec Maya	–	+

Table 1: Encoding spatial relations: Basic typological distinctions

In the following, we show that diachronic data from Greek reveals two typological transitions across the possible types presented in Table 1. In the oldest documents of Greek (stage A), verbs do not impose any constraints on the component [±dyn] of the spatial relators (cf. § 3). At stage B, which roughly corresponds to the Classical Era, the verb selects either a static or a dynamic relator (see § 4). At stage C, which is first attested in the Post-Classical documents, Greek adpositions lose the component [±dyn] (see § 5).

2. Spatial relators in Ancient Greek

Ancient Greek employs a pervasive distinction between static and dynamic relators. This semantic distinction is reflected in the contrast between local cases which is attested in the older documents of Greek and in ancient poetry. Adjunct nominals in spatial function occur in the dative or the accusative, whereby dative is used in static relations (see [5a]) and accusative in dynamic ones (see [6a]). These adjunct nominals are modified by adverbs in the oldest documents of Greek, which are reanalyzed as prepositions in later stages (see Kuryłowicz 1964: 171). The dative/accusative contrast is inherited by the spatial PPs (see [5b] and [6b]), rendering a system which is similar to German, with the difference that Greek prepositional complements may also be in the genitive for the encoding of ablative spatial relations. Moreover, a paradigm of archaic local suffixes is found attached on nominals (mostly toponyms or typical locations) and local adverbs. The opposition between static and dynamic relations is encoded through the suffixes *-thi* and *-de* respectively (or their allomorphs, see Brugmann ^{3}1900: 253), as illustrated in (5c) and (6c). The former suffix is a remnant of the locative case and is in complementary distribution with the case suffixes, while the latter originates in an older postposition that governs the accusative case. Furthermore, the same distinction is found in some lexical minimal pairs, e.g., the prepositions *en* 'in' and *eis* 'into', the adverbs *éndon* 'inside' and *ésō* 'towards the inside', the interrogative adverbs of place *poû* 'where' and *pêi* 'to which place'.

(5a) *ilíōi* *eggegáasin*
Ilios.N:DAT.SG be.in:PF:3.PL
'they dwelled in Ilios' [HOMER, *Iliad* 6.492; 8 c. BC]

(5b) *hup'* *amáksēisin* *bóas* *zeúgnusan*
under wagon.F:DAT.PL cow.F:ACC.PL yoke:PAST:3.PL
'they yoked the cows under the wagons' [HOMER, *Iliad* 24.782f.; 8 c. BC]

(5c) *purà* *phaíneto* *ilió-thi*
fire.N:NOM.PL shine:PAST:3.SG Ilios-LOC
'fire shone at Ilios' [HOMER, *Iliad* 8.561; 8 c. BC]

(6a) *autòn* *agoímetha* *ílion*
this:ACC.SG.M bring:OPT:1.PL Ilios.N:ACC.SG
'we will bring him to Ilios' [HOMER, *Iliad* 17.163; 8 c. BC]

(6b) *hupò* *spéos* *élase* *mḗla*
under cave.N:ACC.SG drive:AOR:3.SG sheep.N:ACC.PL
'he drove the sheep under the cave' [HOMER, *Iliad* 4.279; 8 c. BC]

(6c) *ithákēn-de* *eleúsomai*
Ithaca.F:ACC.SG-ALL come:FUT:1.SG
'I will come to Ithaca' [HOMER, *Odyssey* 1.88; 8 c. BC]

It has to be noted that even in the oldest documents of Greek the encoding of spatial relations is not fully transparent. Some local prepositions govern one case irrespective of spatial relation, e.g., the preposition *prò* 'in front of' always selects the genitive. Second, Ancient Greek prepositional cases do not exclusively serve the encoding of spatial relations; genitive and accusative also contrast for the encoding of several properties of the reference object: The genitive gives rise to a partitive reading, whereas the accusative encodes an extensional perspective. In these uses, genitive and accusative occur either in static or in dynamic spatial relations (cf. HORROCKS 1981: 194; LURAGHI 2003: 329–331; THEOPHANOPOULOU-KONTOU 2000 on the partitive genitive).

3. Stage A: lack of selectional restrictions

At stage A, which is attested in the oldest documents of Greek, the verb does not employ any selectional restrictions on the spatial complement. In texts of this era, a static verb may occur with either static (see 7a) or dynamic spatial relators (see 7b) and the same distribution is found for motion verbs (see 8).

(7a) *menôn* *dómois*
stay:PART.FUT:NOM.SG.M house.M:DAT.PL
'who will stay at home' [SOPHOCLES, *Oedipus Rex* 1291; 5 c. BC]

(7b) *emoì* *mèn* *arkeî* *toûton* *es*
1.DAT.SG LNK$_1$ be.enough:3.SG this:ACC.SG.M into
dómous *ménein*
house.M:ACC.PL stay:INF
'it is enough for me, that he goes at home and stays there'
[SOPHOCLES, *Ajax* cod. Laur. 80; 5 c. BC]

(8a) *eis* *oînon* *bále* *phármakon*
into wine.M:ACC.SG throw:AOR:3.SG drug:ACC.SG.N
'she/he dropped a drug into the wine' [HOMER, *Odyssey* 4.220; 8 c. BC]

(8b) *híppō* *pléksante* *khamaì*
horse:NOM.DU.M strike:PART.AOR:NOM.DU.M on.the.ground
bálon *en* *koníēisi*
throw:AOR:3.DU in dust:DAT.PL.F
'the two horses stroke him and threw him onto the ground into the dust'
[HOMER, *Iliad* 5.588; 8 c. BC]

Grammarians of Ancient Greek refer to this construction as *constructio praegnans* (KÜHNER & GERTH [3]1898: 540). It is attested in the oldest Greek documents, e.g., in Homer (see [8]), in the ancient poetry (see [7]), and in some authors of the Classical Era, especially in XENOPHON (see [9]).

The semantics of the construction <V_{-dyn}, rel_{+dyn}> is not conventionalized in Ancient Greek, i.e. the combination of these semantic components is accommodated through inferences about the possible events that may take place in a given situation. In example (7b), the dynamic relator indicates the movement of the localized object in order to reach the place in which the static event 'stay' will take place. However, the interpretation that the event denoted by the verb follows the event of motion denoted by the preposition is not inherent in the construction at issue. The verb *halísketai* 'to catch' does not license a spatial complement. Whenever it occurs with a spatial adjunct, this normally involves a static relator (see [9a]), but instances with dynamic relators are also attested (see [9b]). In the latter example, the event of motion, that is encoded through the dynamic preposition *eis*, follows the completion of the non-motion event that is lexicalized by the verb.

(9a) *toiaûta* *thēría* *halísketai* *en*
such:NOM.PL.N animal.N:NOM.PL catch:MEDP:3.SG in
ksénais *khṓrais*
foreign:DAT.PL.F country.F:DAT.PL
'such animals are caught in foreign countries'
[XENOPHON, *Cynegeticus* 11.1.2; 4 c. BC]

(9b) *eis* *Lakedaímona* *grámmata* *pemphthénta*
into Lacedaemon.F:ACC.SG letter.N:ACC.PL send:PART.PASS.AOR:NOM.PL.N
heálōsan *eis* *athḗnas*
catch:AOR:3.PL into Athens.F:ACC.PL
'letters which were sent to Lacedaemon were captured and sent to Athens'
[XENOPHON, *Hellenica* 1.1.23; 4 c. BC]

In concluding, the interpretation of a construction <V_{-dyn}, rel_{+dyn}> depends on pragmatics. In (7b), the dynamic event that is encoded through the preposition is interpreted as anterior to the non-spatial event that is lexicalized through the verb. In (9b), contextual considerations suggest the reverse order, i.e., the non-spatial event of the verb is anterior to the event of movement that is expressed through the preposition. In sum, the exact spatial configuration that corresponds to the combination of the [±dyn] components is the result of pragmatic inferences.

In contrast to the interpretational freedom of the constructions with static verbs, the construction <V_{+dyn}, rel_{-dyn}> always denotes a particular type of spatial event. It is a resul-

tative construction: the static relator denotes the static relation that follows the completion of the motion event. Consider the following minimal pair: The 'lightning' does not stay in the barracks after the event of 'falling' in (10a). The soldiers stay in the river after having fallen into it (10b). The construction <V_{+dyn}, rel_{-dyn}> is only attested with events of the second type, i.e., in contexts that allow for the interpretation that the motion event is completed and profile the end state that follows its completion.

(10a) *píptei* *keraunòs* *eis* *tò* *stratópedon*
fall.3.SG lightning.M:NOM.SG into DEF:ACC.SG.N barracks.N:ACC.SG
'a lightning fell into the barracks' [XENOPHON, *Hellenica* 4.7.7; 4 c. BC]

(10b) *hoi* *mèn* *autôn* *euthùs* *en* *tôi*
DEF:NOM.SG.M LNK_1 3.GEN.PL.M directly in DEF:DAT.SG.M
potamôi *épeson*
river.M:DAT.SG fall:AOR:3.PL
'some of them directly fell into the river' [XENOPHON, *Hellenica* 3.4.24; 4 c. BC]

The fact that the construction <V_{+dyn}, rel_{-dyn}> always occurs with the same semantics is evidence for the emergence of government. In contrast to German, Ancient Greek motion verbs do not select a relator that lexically bears the [+dyn] component (i.e., both static and dynamic relators may occur with those verbs). Similarly to German, Ancient Greek motion verbs select the thematic properties of the dominated PP, i.e., it is always the goal of motion, either introduced by a dynamic relator or with a static one, whereby in the latter case a resultative interpretation is added to the event.

The interaction between aspectual properties and the [±dyn] component of the relator may be observed in languages with grammaticalized resultatives. Consider examples (11a) and (11b) from Korean. In view of the typology in Table 1, Korean is a language of the German type. Motion verbs govern dynamic spatial complements (see *-lo* 'ALL' in 11a). However in the resultative construction, the same complement is introduced by a static relator (see *-e* 'LOC' in 11b).

(11a) *nakyəph-i* *alae-lo* *ttələ̈ci-n-ta*
leaf-NOM down-ALL fall-PRS.FIN
'the leaves fell down'

(11b) *nakyəph-i* *alæ-e* *ttələ̈cy-ə* *iss-ta*
leaf-NOM down-LOC fall-SUBR be-FIN
'the leaves fell down and laid (there)'

We may speculate that the behavior of motion verbs at stage A is not an isolated peculiarity of a subset of the lexicon, but reflects a general typological property of the older documented stages of Greek. The property at issue is the lack of government which has been attributed to the Ancient Indo-European languages (see MEILLET 1964: 358–360 on verb valency in Greek and Vedic). Government evolves in Indo-European languages in two grammatical domains: adverbs grammaticalize to adpositions and verbs develop restrictions in argument structure (see also LEHMANN 1998). If this speculation is on the right track, we expect that the constructions at issue will occur in other Ancient Indo-European languages too. Indeed, the construction <V_{+dyn}, rel_{-dyn}> is also documented in a small set of motion verbs in Old Hittite and has the same interpretational properties as in Greek (cf. LURAGHI 2001: 33 f.). In Vedic, many motion verbs display the alternation

between locative and accusative complements, e.g., the verbs *gam* 'to go', *á-viç* 'to arrive in', *áva-vyadh* 'to descend to', etc. (cf. Delbrück 1888: 121f.; Gaedicke 1880: 153–156). According to Delbrück (o. c.: 122), the construction of these verbs with a noun in locative case focuses on the achievement of the goal, whereas the construction of these verbs with a noun in accusative case focuses on the process of movement towards the goal. The same alternation between accusative and locative with motion verbs is also reported for Avestan (Reichelt 1909: 227; 261f.).[3]

4. Stage B: development of selectional restrictions

At stage B, the Greek verb obtains selectional restrictions: motion verbs license a [+dyn] complement and do not occur with goal constituents with a [–dyn] relator anymore. Similarly, static verbs do not occur with spatial constituents with the [+dyn] component. This diachronic stage is assumed for Classical Greek. Apart from the archaisms found in poetry or in Xenophon, verbs do not display the selectional freedom of the older stage anymore.

This development is the result of a reanalysis. At stage A, all permutations of static/motion verbs with static/dynamic relators are possible. However, they are not equally frequent: the occurrence of motion verbs with [–dyn] relators is less frequent than their occurrence with [+dyn] relators and similarly the use of static verbs with [+dyn] relators is less frequent than their use with [–dyn] relators. This asymmetry does not result from a grammatical asymmetry of the constructions at issue, but reflects the conceptual complexity of the involved semantic configurations. Events of simple motion or simple location are simpler and more common in discourse vis-à-vis complex events that combine a static and a dynamic component, as analyzed in section 3. This asymmetry fulfills the basic requirement for a reanalysis to take place. The re-interpreting language learner applies the following reasoning (see Croft 2000: 126f.): "Since the motion verb is used predominantly with a motion relator, the occurrence of this relator is licensed by a syntactic property of the verb, namely a selectional restriction with the component [+dyn] on its complement slot." The same reasoning applies to the frequent occurrence of static verbs with [–dyn] relators. This reanalysis results in the enrichment of the subcategorization frame of the verbs.

The empirical evidence for this change is that the constructions of mismatch between the [±dyn] component of the verb and the [±dyn] component of the relator are not documented in Greek after the Classical period (see Kühner & Gerth [3]1898: 540–545). Only a restricted subset of verbs allows for an alternation between [–dyn] and [+dyn] relators in the colloquial varieties of Attic (cf. Luraghi 1996: 91f.; Smyth [2]1956: 368). These are verbs of spatial transposition, such as *tithḗnai* 'put:inf' (see [12]), *hidrúein* 'seat:inf', etc. It is significant for the grammar of this era, that this property is lexically conditioned, i.e., it is also part of the lexical representation of a subset of verbs.

[3] Only the construction of motion verbs with static relators is reported in grammatical descriptions. The construction of static verbs with dynamic relators is not mentioned, but neither explicitly excluded.

(12a) *tà* *tithémena* *epì* *tòn*
DEF:ACC.PL.N put:PART.AOR:ACC.PL.N upon DEF:ACC.SG.M
bōmón
altar.M:ACC.SG
'those that are put upon the altar' [SEG 35.113; c. 300 BC]

(12b) *toùs* *líthous* … *tithēìs*
DEF:ACC.PL.M stone.M:ACC.PL put:PART.AOR:NOM.SG.M
epì *tê̂i* *gōníai*
upon DEF:DAT.SG.F corner.F:DAT.SG
'after putting the stones on the corner' [IG II^2 1671.21; c. 300 BC]

5. Stage C: loss of contrast in the relational element

We have already mentioned that a subset of Ancient Greek relators are not specified with respect to the [±dyn] component and, hence, combine freely with static verbs and verbs of motion (see section 2). In the course of language change, Greek relators lose their transparency due to two kinds of processes, namely (a) the desemanticization of cases and (b) the idiomaticization of several <preposition, case> constructions. The desemanticization of cases is a continuing process in Ancient Greek that leads from semantic to structural cases. For instance, the genitive of prepositional complements loses its partitive function in Classical Era, which was attested with several prepositions in the previous period (see LURAGHI 2003: 291). Additionally to the loss of some older meanings of cases, particular <preposition, case> constructions are idiomaticized in unpredictable ways developing non-compositional semantic properties. For instance, <*epí*, genitive> denotes vertical orientation, while <*epí*, dative> denotes contact with a surface which is not necessarily the upper one, (see LURAGHI 2003: 308f.). The preposition *pará* 'beside/near' is the only preposition in Classical Greek that retains the opposition genitive ~ dative ~ accusative for the lexicalization of the distinction ablative ~ stative ~ allative, but this holds only true for a subset of the possible reference objects, namely humans. When the same preposition is used with long objects, the accusative is used in all spatial relations (for a detailed treatment of the evolution of Ancient Greek prepositions cf. LURAGHI 1996; 2003).

The result of desemanticization and idiomaticization is opacity, i.e., the meaning of the <preposition, case> construction is not derived through a compositional function applied to the meaning of its components. What is relevant for the history of spatial constructions, is that the encoding of motion on the relator is opaque: some <preposition, case> constructions do not encode [±dyn] at all, while in other constructions of the same type this component is encoded through case. These ramifications fulfill the requirements for a second reanalysis to take place (see DRESSLER 2000: 290; CROFT 2000: 121): The language learner applies the following reasoning: "Since the motion verb carries a [±dyn] component (stage B), and since the relators do not behave in a readily transparent way, then the [±dyn] component of the event is probably expressed through the verb". This assumption invokes a reanalysis which results in the loss of the [±dyn] component with those relators that had one and led to the syncretism of locative and allative expression, which is broadly attested across languages (STOLZ 1992: 79). Some instances of the des-

emanticization of the spatial relators are already documented in archaic documents,[4] but the process becomes generalized in the post-Classical Era (after the 4th century BC). The reanalysis takes place across grammatical categories, affecting all [±dyn] contrasts in Ancient Greek relators: the dative/accusative contrast in prepositional constructions, the opposition between the prepositions *en* 'in' and *eis* 'into', the adverbs *éndon* 'inside' and *eísō* 'towards the interior', the interrogative adverbs *poû* 'where' and *pêi* 'to which place', and the local suffixes *-thi* 'LOC' and *-se* 'ALL' are now used in free variation both in static and dynamic spatial events. (13) illustrates the use of the prepositions *en* and *eis* in free variation, (14) illustrates the free variation of the prepositional genitive, dative, and accusative (all three cases are used with the complement of the same verb), and (15a–15b) illustrate the free variation in the use of local suffixes with adverbs. The fact that the same development takes place across grammatical categories is in line with the idea that it relates to a reanalysis at a higher level, namely at the level of the distribution of the [±dyn] component over syntactic constituents.

(13) *Taorsenoûphis ... epelthoûsa en*
Taorsenouphis.F:NOM.SG come.upon:PART.AOR:ACC.SG.F in/into
têi oikíai mou ...
DEF:DAT.SG.F house.F:DAT.SG 1.GEN.SG
epelthôn ho taútēs
come.upon:PART.AOR:NOM.SG.M DEF:NOM.SG.M that:GEN.SG.F
anêr ... eis tḕn oikían mou
man:NOM.SG.M in/into DEF:ACC.SG.F house.F:ACC.SG 1.GEN.SG
'Taorsenouphis came into my house … and her husband came to my house …'
[BGU 1.22.10–32; 114 AD]

(14) *epì dè toùs bōmoùs paratithénai*
on LNK_2 DEF:ACC.PL.M altar:ACC.PL.M place.upon:INF
mēroús, ... tà dè epì toû
thigh.bone:ACC.PL.M DEF:ACC.PL.N LNK_2 on DEF:GEN.SG.M
bōmoû en tôi eleusiníōi,
altar:GEN.SG.M in/into DEF:DAT.SG.N of.Eleusis:DAT.SG.N
tà epì tôi toû ploútōnos
DEF:ACC.PL.N on DEF:DAT.SG.M DEF:GEN.SG.M Pluto:GEN.SG.M
bōmôi
altar:DAT.SG.M
'place thigh-bones upon the altars, a part upon the altar of Eleusis, and a part on the altar of Pluto' [SEG 36.206.15–19; ca. 300 AD]

(15a) *ekoímēsa ekeî*
sleep:AOR:1.SG there
'I slept there' [BGU 3.775.r.8; 3 c. AD]

(15b) *ekeîse parekálesa tòn kúrión mou*
there invoke:AOR:1.SG DEF:ACC.SG.M lord:ACC.SG.M 1.GEN.SG
'I invoked my lord there' [BGU 3.984.6–7; 4 c. AD]

[4] Cf., e.g., the adverb *ésō* in static relations in HERODOTUS, *Hist.* 5.33.13.

The result of this reanalysis is the complete desemanticization of Greek relators with respect to the [±dyn] component. The relators that originally distinguished between motion and non-motion remained in free variation for a long period (from the Hellenistic period to the Middle Ages). In later stages of Greek, the accusative as the only prepositional case and the preposition *eis* from the pair *en* ~ *eis* take over. As regards the encoding of spatial relations, Greek develops into the language type that encodes the [±dyn] component through the selectional restrictions of the verb only (see Yucatec Maya in Table 1).

Parallels to the history of Greek relators may be found in other Indo-European languages. For instance, developments in the same direction led to the desemanticization of several relators in Romance languages. However, there are no conceptual reasons to assume that this process is uni-directional; indeed, the opposite direction is exemplified by German. In Old High German, most prepositions select the case (accusative or dative) of their prepositional complement and only few prepositions are found with both cases in opposition (cf. BEHAGHEL 1924: 34–38). In the course of language change, the case opposition was generalized to almost all spatial prepositions (cf. DESPORTES 1984: 111–130). In this case, analogy establishes a pervasive pattern of encoding [±dyn] in the relator.

6. Conclusions

We have distinguished three stages in Greek diachrony with respect to the encoding of spatial relations (see Table 2, compare Table 1): **stage A**: several types of relators encode the [±dyn] component; the verb does not display any selectional restrictions on this component of the relator; at this stage, which is attested in the oldest documents of Greek, the encoding of spatial relations has the same typological properties as the pattern illustrated by Bahasa Indonesia (see section 1); **stage B**: the verb selects the [±dyn] component of the relator; at this stage, Greek is similar to German with respect to the encoding of spatial relations; **stage C**: the relator loses the distinction [±dyn], and Greek patterns with the Yucatec Mayan type.

	spatial relator	selectional restrictions of the V
stage A	+	–
stage B	+	+
stage C	–	+

Table 2: Encoding spatial relations: Greek diachrony

The evolution of the Greek lexicalization patterns is based on two subsequent processes of reanalysis: (a) the transition from stage A to stage B evolved through a reanalysis of a contextual property (frequent occurrence of [+dyn] verbs with [+dyn] relators) as a lexical property ([+dyn] verbs license a [+dyn] relator); (b) the transition from stage B to stage C is accounted for in terms of a second reanalysis: the loss of transparency in the encoding of the [+dyn] component in the relator led to the reinterpretation that this component is only part of the selectional restrictions of the verb.

Moreover, we have argued that the typology of lexicalization patterns should not be limited to the distribution of conceptual components in the lexical meaning of the involved

constituents but it should take into account relational information too. The typological and diachronic data presented in this paper shows that verb valency has a crucial role in determining the possible permutations of semantic components in syntactic constructions and the range of possible language types.

Abbreviations

ABS	absolutive	LOC	locative
ACC	accusative	M	masculine
ALL	allative	MEDP	mediopassive
AOR	aorist	N	neuter
CMPL	completive	NOM	nominative
D	deictic	OPT	optative
DAT	dative	PART	participle
DEF	definite	PASS	passive
DU	dual	PAST	past
F	feminine	PF	perfect
FIN	finite	PL	plural
FUT	future	POSS	possessive
GEN	genitive	PRS	present
IN	inclusive	SUBR	subordinator
INF	infinitive	SG	singular
LNK	linker		

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