

Chapter 7



Revisiting the grammatical function “object” (OBJ and OBJ_θ)

Stella Markantonatou

Institute for Language and Speech Processing, Athena RIC, Greece

Niki Samaridi

Faculty of Philology, National and Kapodistrian University of Athens

Free subject verb multiword expressions (MWEs) of Modern Greek and English provide data that challenge the theoretical status of the syntactic notion OBJECT. We compare the syntactic reflexes of three types of verbal complement: objects of typical monotransitive verbs, indirect objects of ditransitive verbs and fixed accusative noun phrases (NPs) that occur as direct complements of verbs in MWEs. Passivisation, clitic replacement, object optionality and distribution present themselves as syntactic reflexes that draw relatively clear cut lines across these three classes of verbal complements and suggest that the Grammatical Functions OBJ(ect) and OBJ(ect)_θ of LFG should not be assigned to the fixed accusative NPs that occur in verb MWEs; rather a new Grammatical Function should be defined for this purpose.

1 OBJ and OBJ_θ

1.1 OBJ and OBJ_θ in Modern Greek and English

It is widely claimed that the grammatical behavior of MWEs can be captured with the same machinery that is used for compositional structures (Gross 1998a; Gross 1998b; Bargmann & Sailer 2017; Kay & Sag 2014). We will present evidence from Modern Greek and English that possibly challenges this claim at the level of Grammatical Functions (GFs), more particularly the notion of syntactic object. GFs are primitive concepts for Lexical Functional Grammar (LFG) that is

Greek



Stella Markantonatou & Niki Samaridi. 2018. Revisiting the grammatical function “object” (OBJ and OBJ_θ). In Manfred Sailer & Stella Markantonatou (eds.), *Multiword expressions: Insights from a multi-lingual perspective*, 189–215. Berlin: Language Science Press. DOI:10.5281/zenodo.1182599

the theoretical framework of our discussion. Other linguistic theories, such as transformational grammar (Baker 2001) and HPSG (Pollard & Sag 1994) use GFs implicitly through appropriate structural interpretations.

LFG distinguishes between two objects, the OBJ and the OBJ_θ (Bresnan & Moshi 1990; Dalrymple 2001). OBJ combines with prototypically transitive verbs. According to existing wisdom on syntax and semantics, the NP τον κώδικα των Ναζί, ton kodika ton Nazi, ‘the Nazi code’ (1) is the object of the transitive verb: it is marked with the accusative case while the semantics of the eventuality of code breaking assigns it the Proto-Patient role (Dowty 1990).

- (1) Τσιούριγκ: ο κρυπτογράφος που έσπασε τον κώδικα των Ναζί.
 Turing: o kriptografos pu espase ton kodika ton Nazi.
 Turing: the cryptographer who broke the code.ACC the Nazi
 ‘Turing: the cryptographer who broke the Nazi code.’

OBJ_θ (Bresnan & Moshi 1990) always co-occurs with an OBJ in the environment of an active predicate. Its distribution is restricted to the so-called ditransitive verbs. In (2) the NP *a book* instantiates the OBJ_θ GF and the NP *Sue* instantiates the OBJ. The NP *Sue* turns up as the subject of the passivised verb in (3).

- (2) *Helen gave Sue a book.*
 (3) *Sue was given a book.*

Modern Greek has a relatively small number of ditransitive verbs, such as the verb διδάσκω, didasko, ‘teach’ (4)-(7), that subcategorise for OBJ_θ (Kordoni 2004). Examples (5)-(7) show that Modern Greek passive ditransitive verbs pattern with standard English passive verbs (3): the NP ιστορία, istoria, ‘history’ that instantiates the OBJ_θ does not turn up as the subject of the passive form of the verb (6).

- (4) a. Ο Πέτρος διδάσκει στη Μαρία ιστορία.
 O Petros didaski sti Maria istoria .
 the Petros teaches to.the Maria history.ACC
 ‘Petros teaches history to Maria.’
 b. Ο Πέτρος διδάσκει τη Μαρία ιστορία.
 O Petros didaski ti Maria istoria
 the Petros teaches the Maria.ACC history.ACC
 ‘Petros teaches Maria history.’

- (5) *Η Μαρία διδάσκεται ιστορία από τον Πέτρο.*
 I Maria didaskiete istoria apo ton Petro.
 the Maria is.taught history.ACC by the Petros
- (6) **Ιστορία διδάσκεται τη Μαρία από τον Πέτρο.*
 Istoria didaskiete ti Maria apo ton Petro.
 history is.taught the Maria.ACC by the Petros
- (7) *Ιστορία διδάσκεται στη Μαρία από τον Πέτρο.*
 Istoria didaskiete sti Maria apo ton Petro.
 history is.taught to.the Maria by the Petros

But are OBJ and OBJ_θ that have been modeled on compositional data enough to capture MWE behavior? This is how the original question, namely whether “compositional” syntax is appropriate for MWEs, may be couched in an LFG framework. The discussion in the remainder of this paper is structured as follows: at the second part of §1 we present the diagnostics for distinguishing between the two types of object that are available in LFG, namely the OBJ and the OBJ_θ. In §2 we apply the classical constituency diagnostics on MWEs in order to identify the constituents that will instantiate the GFs. In §3, we apply the objecthood diagnostics on the constituents identified within MWEs and compare the results with the ones received from the application of the same diagnostics on compositional structures. Passives are discussed in §4. In §5 we discuss the results of the application of objecthood diagnostics on MWEs, the pros and the cons of four different answers to our original question and argue in favor of the adoption of a new GF, which we call FIX. Finally, in §6 we show that a variety of MWEs can be modeled with FIX. We conclude with a set of questions open to future research.

1.2 Diagnostics for distinguishing between OBJ and OBJ_θ

Hudson (1992) has discussed the following 11 diagnostics for distinguishing between English direct and indirect objects, OBJ and OBJ_θ respectively in LFG terms: passivisation, extraction, placement after a particle, participation in heavy-NP shift, accusative case in a true case system, lexical subcategorisation, bearing the same semantic role as the prototypical direct object, animacy, existence of idioms with the same verb head, being the extractee of an infinitival complement, controlling a depictive predicate. Although some of these diagnostics have been shown to be disputable (Thomas 2012), they still provide an excellent starting point that we will adapt to the needs of Modern Greek. Modern Greek hardly

object/indirect
object(

uses any verb+particle constructs and has no infinitivals. Of the remaining diagnostics lexical subcategorisation, heavy NP shift, animacy and control of a depictive predicate do not apply to MWEs that have fixed structures and non-compositional semantics. The idiom-based diagnostic is left out because fixed expressions are idioms. Lastly, the extraction diagnostic will be used as a diagnostic of constituency.

We will not use semantic roles as a diagnostic because of their inherent fuzziness (Dowty 1990) and because MWEs have non-compositional semantics. LFG assumes that OBJ can bear any or no thematic role at all since expletives can also materialize objects. It is generally accepted that Modern Greek has no overt expletives (Kotzoglou 2001). OBJ_θ, on the other hand, has been restricted to “themes” (Bresnan & Moshi 1990).

The NP that instantiates an OBJ_θ never turns up as the subject in passives (6) while the NP that instantiates an OBJ does (5), (7).


The case diagnostic yields ambiguous results in Modern Greek because direct and indirect objects and a range of adjuncts denoting time and place are instantiated with accusative NPs: of the two accusative NPs in (8), the NP ένα γράμμα, *ena γrama*, ‘a letter’ functions as an object while the NP την Παρασκευή, *tin Paraskievi*, ‘on Friday’ is an adjunct that can be questioned with πότε, *pote*, ‘when’.

- (8) Θα γράψω ένα γράμμα στον Κώστα την Παρασκευή.
 Tha γrapso ena γrama ston Kosta tin Paraskievi.
 will write.1SG a letter.ACC to.the Kostas the Friday.ACC
 ‘I will write a letter to Kostas on Friday.’

Other diagnostics found in the literature seem to be language specific (Shi-Ching 2008). One of them is the position of the object in the sentence. In Modern Greek, normally both OBJ and OBJ_θ follow the verb. Modern Greek is a language with relatively free word order. Adjuncts can appear anywhere in the sentence between constituents (the exact positions depend on the type of the adjunct).

We will enrich our collection of diagnostics with various types of pronominalisation including relativisation (9), *Who/What*-questions (10), (11) and clitic replacement (12). Pronominalisation has been used as a constituency diagnostic (Radford 1988). In certain languages relativisation has been used as a diagnostic for distinguishing between OBJ and OBJ_θ: in Cantonese (Shi-Ching 2008), the OBJ of monotransitive verbs and the OBJ_θ in ditransitive constructions are relativised with a gap while the OBJ of ditransitive constructions is relativised with a resumptive pronoun. Modern Greek does not have similar pronominalisation

phenomena but we will see that relativisation is of some interest. We will also use *Which*-questioning (10), which has been adopted by Shi-Ching (2008) in her discussion of OBJ/OBJ_θ in Cantonese and has been briefly discussed in Kay & Sag (2014), as well as clitic replacement (12).

- (9) *Ο κώδικας των Ναζί τον οποίο έσπασε ο Άλαν Τιούριγκ*
O kodikas ton Nazi ton opio espase o Alan Turing ...
 ‘The Nazi code **that Turing** broke ...’ 
- (10) *Ποιον κώδικα έσπασε ο Άλαν Τιούριγκ;*
Pion kodika espase o Alan Turing?
 ‘Which code did Alan Turing break?’
- (11) *Τί έσπασε ο Άλαν Τιούριγκ;*
Ti espase o Alan Turing?
 ‘What did Alan Turing break?’
- (12) *Τον έσπασε ο Άλαν Τιούριγκ.*
Ton espase o Alan Turing.
him broke.3SG the Alan.NOM Turing.NOM
 ‘Alan Turing broke it.’

We will adopt the standard assumption that Modern Greek OBJ/OBJ_θ are materialized as phrasal constituents when they are not materialized by weak pronouns (clitics). Modern Greek widely uses pre-verbal clitics, which have been analysed both as NPs and as affixes (Joseph 1989). We do not think that the phrasal status of clitics bears on the issues examined here.

2 Multiwords

Word order permutations, adverb placement and control phenomena indicate the presence of phrasal constituents in Modern Greek MWEs. Drawing on Kay & Sag (2014) and Samaridi & Markantonatou (2014), we assume that Modern Greek free subject verb MWEs contain an idiomatic verb predicate that selects for a free subject and a number (including zero) of (possibly) idiomatic complements.

Greek

2.1 Constituency diagnostics

Radford (1988) mentions preposing, postposing and adverb interpolation as distributional diagnostics of phrasal constituents. We will use the term WORD ORDER

PERMUTATIONS to collectively refer to preposing and postposing.

Because we are working with MWEs that contain postverbal NPs –often of some complexity– we note that in Modern Greek, postnominal genitive NPs or weak pronouns denoting possession or some property and postnominal PPs cannot be extracted from the matrix NP (13b), (14b). The matrix NP¹ participates in word order permutations (13c), (14c).

- (13) a. *Ο Γιάννης φοράει τα παπούτσια του Γιώργου.*
 O Gianis forai [ta paputsia tu Giorγy].
 the John wears the shoes the.GEN George.GEN
 ‘John wears George’s shoes.’

b. *Tu Giorγy forai o Gianis ta paputsia.

c. [Ta paputsia tu Giorγy] forai o Gianis.

- (14) a. *Η Ελένη αγόρασε ένα ταψί για γλυκά.*
 I Eleni agorase [ena tapsi gia γlika].
 the Eleni bought a tin for cakes
 ‘Eleni bought a tin for cakes.’

b. *Γia γlika agorase i Eleni ena tapsi.

c. [Ena tapsi gia γlika] agorase i Eleni.

Furthermore, a temporal adverb may occur between the verb and its NP complement (15a), (16a) but it cannot occur within the NP (15b), (16b):

- (15) a. *Ο Γιάννης φόρεσε χθές τα παπούτσια του Γιώργου.*
 O Gianis forese χthes [ta paputsia tu Giorγy].
 the John wore yesterday the shoes the George.GEN
 ‘John wore George’s shoes yesterday.’

b. *Ο Gianis forese ta paputsia χthes tu Giorγy.

- (16) a. *Η Ελένη αγόρασε χθες ένα ταψί για γλυκά.*
 I Eleni agorase χthes [ena tapsi gia γlika].
 the Eleni bought yesterday a tin for cakes
 ‘Eleni bought a tin for cakes yesterday.’

b. *I Eleni agorase ena tapsi χthes gia γlika.

¹The matrix NP is placed in brackets ‘[]’ in the examples (13)-(16).

Radford (1988) notes that pronouns such as ‘what’ can be used to question NP constituents irrespectively of their syntactic function, namely whether they are subjects (17), objects (18) or complements of prepositions (19), as well as a range of sentential complements.

- (17) *Τί ήρθε το πρωί; Το τραίνο.*
Ti irthe to proi? To treno.
 what.NOM came the morning the train
 ‘What came in the morning? The train did.’
- (18) *Τί φοράει ο Γιάννης; Τα παπούτσια του.*
Ti forai o Gianis? Ta paputsia tu.
 what.ACC wears the John.NOM the shoes his
 ‘What does John wear? His shoes.’
- (19) *Από τί κρύωσε η Ελένη; Από τον αέρα.*
Apo ti kriose i Eleni? Apo ton aera.
 from what caught.cold the Eleni.NOM from the wind
 ‘What gave a cold to Eleni? The wind.’

We will use these diagnostics to identify phrasal constituents in MWEs.

2.2 MWE constituents

object/indirect
object()

Below we will use two types of verb MWE that admit a free subject (not a fixed one):

1. The first type is represented with the verb MWE (20) and contains an accusative NP that is an independent nominal MWE. We know that it is independent because it can combine with several verbs and it is synonymous with the noun *permission*. We will use the label NP_MWE to refer to this type of nominal MWEs.

- (20) *Έδωσε το πράσινο φως για το Erasmus+.*
Edose to prasino fos gia to Erasmus+.
 gave the green.ACC light.ACC for the Erasmus+
 ‘S/He gave the green light for Erasmus+.’

multiword
expres-
sion/flexibility

2. The second type contains fixed accusative NPs that do not form independent NP_MWEs. We will use the label Fixed_NP to denote this type of NP that here is represented with three verb MWEs admitting a free subject. Two of them involve the Fixed_NP *τα μούτρα* POSS, *ta mutra* POSS where the obligatory POSS anaphor is bound by the subject (22), (23). The noun *μούτρα*, *mutra* is a colloquial word for ‘face’ (21). Within the MWEs, the Fixed_NP *τα μούτρα* POSS, *ta mutra* POSS does not have the meaning ‘POSS face’.

- (21) *Πλύνε τα μούτρα σου που είναι μες τη βρώμα.*
 Pline ta mutra su pu ine mes ti vroma.
 wash.IMP the face.ACC yours.GEN that is in the dirt
 ‘Wash your face that is very dirty.’

- (22) *Πίχνω τα μούτρα μου.*
 Rixno ta mutra mu.
 drop.1sg the face.ACC mine.GEN
 ‘I suppress my dignity.’

- (23) *Κοιτώ τα μούτρα μου.*
 Kito ta mutra mu.
 look.1sg the face.ACC mine.GEN
 ‘I look at myself.’

Word order permutations (24a)-(24b), adverb interpolation (25a)-(25b) and *What*-questioning (26a)-(26b) establish that the NP *τα μούτρα* POSS, *ta mutra* POSS is a constituent of the respective MWEs:

- (24) a. *Τα μούτρα σου να ρίξεις.*
 Ta mutra su na riksis.
 the face.ACC yours.GEN to drop.2SG
 ‘It is your dignity that you should suppress.’
 b. *Τα μούτρα σου κοίτα.*
 Ta mutra su kita.
 the face.ACC yours.GEN look.2SG.IMP
 ‘Look at yourself.’

- (25) a. *Ο Γιάννης έριξε τότε τα μούτρα του.*
 O Gianis erikse tote ta mutra tu.
 the John dropped then the face his
 ‘Then John suppressed his dignity.’
 b. *Η Ελένη κοίταξε τότε τα μούτρα της.*
 I Eleni kitakse tote ta mutra tis.
 the Eleni looked then the face hers
 ‘Eleni looked at herself for once.’
- (26) a. *Έριξε τότε τα μούτρα του. Τί έριξε;*
 Erikse tote ta mutra tu. Ti erikse?
 dropped then the face his what dropped
 ‘He suppressed his dignity for once. What did he do?’
 b. *Η Ελένη κοίταξε τα μούτρα της. Τί κοίταξε;*
 I Eleni kitakse ta mutra tis. Ti kitakse?
 the Eleni looked the face hers what looked
 ‘Eleni looked at herself. What did she do?’

3 OBJ, OBJ_θ: syntactic reflexes

3.1 Objecthood diagnostics and the Fixed_NP

Constituency diagnostics seem to set apart structures with an NP_MWE from structures with a Fixed_NP.

The passivisation diagnostic returns a range of results: (20) has a passive counterpart (27a) but (23) and (24) do not (examples (27b) and (27c) respectively):

- (27) a. *Δόθηκε το πράσινο φως για τη δόση.*
 Dothikie to prasino fos gia ti dosi.
 was.given the green.NOM light.NOM for the instalment
 ‘Permission for the instalment was given.’
 b. * *Τα μούτρα μου κοιτάχτηκαν (από εμένα).*
 Ta mutra mu kitaxtikan (apo emena).
 the face mine was.looked.at by me
 ‘I looked at myself.’

- c. * *Να ριχτούν τα μούτρα σου (από εσένα).*
Na rixtun ta mutra su (apo esena).
 to be.dropped the face yours by you
 ‘It is your dignity that you should suppress.’

The relativisation diagnostic yields similar results: (20) does not block relative clauses targeting the NP_MWE (28) while (22) and (23) block relative clauses with the Fixed_NP as a target (29).

- (28) *το πράσινο φως το οποίο έδωσε η ΕΕ στους αγρότες*
to prasino fos to opio edose i EE stus ayrotes
 the green light the that gave the EU to.the farmers
 ‘the green light that EU gave to the farmers’

- (29) * *Τα μούτρα σου, που έριξες τότε, να τα ξαναρίξεις.*
Ta mutra su, pu erikses tote, na ta ksanariksīs.
 the face yours that dropped.2SG then to them re.dropped.2SG
 ‘You suppressed your dignity then and you should suppress it again.’

The *Which*-questions diagnostic returns similar results: NP_MWEs (20a) allow for which-questions (30) but Fixed_NP (22),(23) do not (31).

- (30) ? *Ποιο πράσινο φως έδωσε η Ευρωπαϊκή Ένωση;*
Pio prasino fos edose i Evropaiki Enosi?
 which green light gave the European Union
 ‘Which permission did the EU give?’

(31) is a piece of dialogue that was evaluated by 6 native speakers who were instructed to choose one of the following three labels: “joke”, “description of an event”, “other”. All speakers chose the label “joke”. The joke, irony or pun effects seem to be due to the fact that the question *ποιο χέρι*, *pio xieri*, ‘which hand’ is unexpected in the context of the MWE. The MWE does not imply that someone actually put his/her hand in the fire while the question *ποιο χέρι*, *pio xieri* shifts discourse to the literal meaning of *χέρι*, *xieri*, ‘hand’. Raskin (1985) argues that jokes arise from the violation of the Gricean conversational maxims that require information-bearing and serious and sincere communication.

- (31) *Βάζω το χέρι μου στη φωτιά ότι ο Κώστας ζει. Ποιο χέρι;*
Vazo to xieri mu sti fotia oti o Kostas zi. Pio xieri?
 put the hand my in.the fire that the Kostas lives which hand
 ‘I am absolutely sure that Kostas is alive. Which hand?’

The replacement with a clitic in discourse with the same MWE produces an interesting effect: as expected, (20) allows for cliticisation of the NP MWE within the same expression (32), however, definite Fixed_NPs also allow for cliticisation with the same MWE (33):

- (32) Έδωσε το πράσινο φως για το Erasmus+; Ναι, το έδωσε.
 Edose to prasino fos gia to Erasmus+? Ne, to edose.
 gave the green light for the Erasmus+? yes, it gave
 ‘Did s/he give the green light for Erasmus+? Yes, s/he did.’

(33) was also evaluated by 6 speakers who were instructed to choose one of the following three labels: “joke”, “description of an event”, “other”. They all chose the label “description of an event”. Therefore, the clitic τα, ta, ‘them’ can be used to replace objects in the context of the same MWE.

- (33) Θα ρίξω τα μούτρα μου. Εγώ δεν τα ρίχνω.
 Tha rikso ta mutra mu. Ego den ta rixno.
 will drop the face.PL_j mine I not them_j drop
 ‘I will suppress my dignity. I will not.’

Tsimpli & Mastropavlou (2007) following work by Cardinaletti & Starke (1999) and Tsimpli & Stavrakaki (1999) argue that Modern Greek third person clitics are “clusters of agreement and case features” and that they lack a referential index – a fact that explains their need of an antecedent. We can safely assume that cross-reference across same MWEs satisfies agreement and case features and makes sure that semantics is identical across structures.

Indefinite Fixed_NP cannot be replaced by a clitic even in the context of the same MWE (35). Compositional structures (34) allow for clitic replacement of indefinite objects, even across different predications.

- (34) Ο Γιώργος έταξε στην Ελένη διακοπές. Τis σχεδιάζει καιρό.
 O Giorγos etakse stin Eleni diakopes. Tis sxiediazai kiero.
 the George promised to.the Eleni holidays them plans time
 ‘George has promised a holiday to Eleni. He has been planning it for some time.’
- (35) to promise hares with stoles ‘to make unrealistic promises’
 Έταξε λαγούς με πετραχήλια. *Τους έταξε παντού.
 Etaze layus me petraxilia. *Tus etaze pantu.
 promised hares_j with stoles them_j promised everywhere
 ‘He made unrealistic promises. He made these promises to everyone.’

Ariel (2001), in the context of **Accessibility Theory**, argues that “referring expressions code a specific and (different) degree of mental accessibility” where “mental accessibility” is meant as a shorthand of “accessibility of mental representations that are available to the addressee in the discourse”. Referential expressions are accessibility markers guiding the addressee how to retrieve appropriate mental representations. Drawing on distributional findings, Ariel suggests an ordering of referential expressions from low to high accessibility markers. On this ordering, definite expressions are situated on the edge of low accessibility marking and 3rd person clitics on the edge of high accessibility marking. This means that the addressee perceives definiteness as a signal that an entity has just been introduced to the discourse and the existence of a clitic as a signal that she has to look for an entity that has been introduced to the discourse sometime ago. Therefore, definiteness should “attract”, so to say, clitics. Perhaps, definiteness is the reason why (only) definite Fixed_NP can be replaced with a clitic. The reader should keep in mind that replacement of a Fixed_NP with a clitic is allowed only in the strict context of the same MWE and that indefinite Fixed_NP cannot be replaced (35).

Lastly, discourse collapses if cross-reference is required across different MWEs (36) and across MWEs and compositional structures (37) (compositional structures allow for cross-reference across different predications). (36) and (37) below sound absurd. At best, (37) produces a joke/irony effect – an effect that was observed with *Which*-questions as well.

- (36) * Ο Πέτρος έριξε τα μούτρα του και μετά τα κοίταξε.
 O Petros erikse ta mutra tu kie meta ta kitakse.
 the Petros dropped the face.PL_j his and then them_j looked
 ‘Petros suppressed his dignity and then he looked at himself.’

- (37) * Έριξα τα μούτρα μου. Τα είχα καλύψει πριν.
 Erikse ta mutra mu. Ta ixa kalipsi prin.
 dropped the face.PL_j mine. them_j had covered before
 ‘I suppressed my dignity. I had covered my face in advance.’

English MWEs present a picture similar to the Modern Greek one. Kay & Sag (2014) discuss the case of the English verb MWE *to kick the bucket* and apply similar diagnostics. The MWE *to kick the bucket* resists passivization. Furthermore, relativisation, *Which*-questioning and replacement of *the bucket* with *it*² are not possible (38a)–(38c).

²It is the nearest English equivalent of Modern Greek clitics.

- (38) a. * *the bucket that the peasant kicked ...*
 b. * *Which bucket did the peasant kick?*
 c. *The peasant kicked the bucket. * Also, his wife kicked it.*

3.2 Application of objecthood diagnostics on OBJ_θ

The accusative NP την ελληνική ιστορία, tin eliniki istoria, ‘the Greek history’ in (39) instantiates an OBJ and responds positively to all constituency diagnostics.³ In (40) the definite NP την ελληνική ιστορία, tin eliniki istoria instantiates an OBJ_θ.

- (39) Ο Πέτρος διδάσκει στην κοπέλα την ελληνική ιστορία.
 O Petros didaski stin kopela tin eliniki istoria.
 the Petros teaches to.the girl the Greek.ACC history.ACC
 ‘Petros teaches the Greek history to the girl.’
- (40) Ο Πέτρος διδάσκει την κοπέλα την ελληνική ιστορία.
 O Petros didaski tin kopela tin eliniki istoria.
 the Peter teaches the girl.ACC the Greek.ACC history.ACC
 ‘Peter teaches the girl the Greek history.’

We have already illustrated with examples (5)-(7) that the Modern Greek OBJ_θ patterns with the English OBJ_θ as regards passivisation.

Relativisation is somehow unwelcome with an OBJ_θ: (41a), (41b) were accepted as grammatical by 50% of the speakers.

- (41) a. η κοπέλα που διδάσκει ο Πέτρος την ελληνική ιστορία
 i kopela pu didaski o Petros tin eliniki istoria
 the girl.NOM who teaches the Petros the Greek history.ACC
 ‘the girl to whom Petros teaches the Greek history’
- b. η ελληνική ιστορία που διδάσκει ο Πέτρος την κοπέλα
 i eliniki istoria pu didaski o Petros ti kopela
 the Greek history.NOM that teaches the Petros the girl.ACC
 ‘the Greek history that Petros teaches to the girl’

The *Which*-questions diagnostic returns a variety of results: (42a) was rejected by all the speakers while (42b) was accepted as grammatical by a 50% of the speakers.


³However, it must be noted that 5 out of the 7 speakers who commented on (39) and especially (40) thought them acceptable but somewhat clumsy.

- (42) a. * *Ποια κοπέλα διδάσκει ο Πέτρος την ελληνική ιστορία;*
 Pia kopela didaski o Petros tin eliniki istoria?
 which girl teaches the Petros the Greek history.ACC
- b. *Ποια ιστορία διδάσκει ο Πέτρος την κοπέλα;*
 Pia istoria didaski o Petros tin kopela?
 which history teaches the Petros the girl?

While OBJ can be replaced with a clitic (43a), replacement of OBJ_θ with a clitic is not possible in discourse with the same predication (43b).

- (43) a. *Ο Πέτρος την διδάσκει την ελληνική ιστορία.*
 O Petros tin('girl') didaski tin eliniki istoria.
 the Petros her teaches the Greek history
 'Petros teaches her the Greek history.'
- b. * *Ο Πέτρος την διδάσκει την κοπέλα.*
 O Petros tin('history') didaski tin kopela.
 the Petros it teaches the girl

Replacement of an OBJ_θ with a clitic is possible in a discourse with a different predication. In (44), the clitic την, tin, 'her' may refer to either an NP instantiating an OBJ (την Μαρία, tin Maria, 'Maria') or to the complement of a P (στην Μαρία, stin Maria, 'to Maria'). Furthermore, the clitic την, tin, 'her' in the second clause refers to the NP την ελληνική ιστορία, tin eliniki istoria, 'the Greek history' that instantiates the OBJ_θ.

- (44) *Ο Πέτρος διδάσκει στη Μαρία / τη Μαρία την ελληνική ιστορία. Την*
 O Petros didaski sti Maria / ti Maria tin eliniki istoria. Tin
 the Pe  teaches to.the Maria / the Maria the Greek history her
έχει κάνει να την αγαπήσει.
 echi kani na tin agapisi.
 has made to it like
 'Petros teaches Maria the Greek history. He has made her love it.'

Similar results are received if the same diagnostics are applied on English OBJ_θ (Thomas 2012): the English OBJ_θ cannot be replaced by *it* (45).

- (45) * *John gave Mary it.*

3.3 The overall syntactic behavior of OBJ, OBJ_θ and of the (yet unknown) GF assigned to Fixed_NP

The results of the application of the diagnostics on the GF assigned to Fixed_NP, OBJ, OBJ_θ and ADJ instantiated with accusative NPs including optionality, case marking and position in the sentence are summarized in Table 1. We have not provided detailed data for the application of the diagnostics on ADJ.

Direct objects can be optional in Modern Greek (Anastasopoulos et al. 2013). Kordoni (2004) presents Modern Greek data where OBJ_θ is omitted. MWEs, on the other hand, hardly allow for constituent omission.

The feature “accusative postverbal” takes the same value for all the examined categories and has no discriminating role, therefore it will not be taken into account in the remainder of this discussion. Furthermore, ADJ, OBJ and OBJ_θ respond positively to relativisation and *Which*-questions, indicating that the two

Table 1: The overall syntactic behavior of OBJ, OBJ_θ, ADJ, and the GF assigned to F(ixed)_NP according to the objecthood diagnostics.^a

Phenomenon Language	F_NP EL	F_NP EN	OBJ EL	OBJ _θ EL	OBJ _θ EN	NP adj EL
Optionality	N	N	Y	Y	N	Y
Relativisation	N	N	Y	?Y	Y	Y
<i>Which</i> -questions	N	N	Y	?Y	Y	Y
Clitic—same MWE	Y	N*	Y	N	N*	N
Clitic-different MWE	N	N*	Y	Y	N*	N
Clitic-compositional	N	N*	Y	Y	N*	N
Accusative Postverbal	Y	Y	Y	Y	Y	Y/N
Passivisation	N	N	Y#	N	N	N

^aClarifications on Table 1:

1. F_NP: it stands for Fixed_NP.
2. N*: English has no clitics. We refer to the usage of the pronoun *it* - see (38c) and (45).
3. Y#: Not all transitive verbs have passive counterparts in Modern Greek.
4. ?Y: Speakers responses were not unanimous.
5. Y/N: Modern Greek accusative NP adjuncts can appear in both pre- and post- verbal positions.

diagnostics are sensitive to the semantics of the NPs rather than their syntactic function (Kay & Sag 2014). These diagnostics will not be used as objecthood diagnostics for Modern Greek or English.

A more detailed picture of the situation with passivisation in our collection of Modern Greek verb MWEs is given in the next section.

4 A more detailed picture of passivisation in Modern Greek MWEs

Out of a collection of 1120 verb MWEs⁴ a percentage of 57,5% are formed with verbs that have a passive counterpart. The remaining 42,5% are formed with verbs that have no passive counterpart. Of the MWEs that are formed with verbs that have a passive counterpart in the general language, only 53 have a passive MWE counterpart. Among the passivisable MWEs, 24 contain a free accusative NP that becomes the subject of the passive form (46), 6 contain an NP_MWE (27) and 23 contain a Fixed_NP. Of the MWEs that are formed with passivisable verbs but do not have a passive MWE counterpart, 76 contain a free accusative NP, 24 contain an accusative NP_MWE and 221 contain a Fixed_NP. Percentages in Table 2 are calculated over the whole data set (1120 MWEs).

- (46) *Ο όρος κοινότητα ... αφέθηκε στην ιστορική ησυχία του*
O oros kinotita ... afeθikie stin istoriki isixia tu
the term community ... was-left to.the historical peace its

‘The term community was left alone in its historical peace.’

<http://commonsfest.info/2015/i-istoria-ton-kinon-ston-elliniko-choro/>

Several of the passivisable MWEs contain Fixed_NP whose head nouns seem to instantiate senses different from the nouns’ literal ones. For instance, the noun μέτρα, metra whose literal sense is ‘meters’, is used with the sense ‘measures’ in (47). Such senses are used widely in compositional structures. Along with idioms, the collection used also includes collocations.

- (47) *Αυτά είναι τα μέτρα που κατέθεσε η ελληνική κυβέρνηση.*
Afta ine ta metra pu katethese i eliniki kivernisi.
these are the measures that submitted the Greek government

‘These are the measures that the Greek government submitted.’

⁴<http://users.sch.gr/samaridi/attachments/article/3/LexicalResources.pdf>

Table 2: Passives in the dataset of Modern Greek free subject verb MWEs

Verbs	Total	MWE	Total	Complement	Total
passive	644 (57,5%)	passive	53 (4,7%)	Free NP	24 (2,1%)
				NP_MWE	6 (0,54%)
				Fixed_NP	23 (2%)
		no passive	591 (52,7%)	Free NP	76 (6,8%)
				NP_MWE	24 (2,1%)
				Fixed_NP	221 (19,7%)
no passive	426 (42,5%)				
Total	1120				

If these collocations are put aside, only a percentage of 1% corresponds to passivisable MWEs with a Fixed_NP. In (48) the Fixed_NP *μεγάλα λόγια*, *meqala loqia*, ‘big words’ is the subject of the passive form of the MWE *λέω μεγάλα λόγια*, *leo meqala loqia*, ‘to make big promises’.

- (48) *Είναι σύνηθες να λέγονται μεγάλα λόγια από μικρούς πολιτικούς.*
Ine siniθes na leyonte meqala loqia apo mikrus politikus.
 is common to say.PASS big words by small politicians
 ‘Often unimportant politicians make big promises.’

The collection we have used is of relatively medium size but clearly shows that Modern Greek MWEs do not prefer passivisation: passivisable MWEs (both fixed ones and collocations) account only for the 4,7% of the total number of MWEs.

passive()

5 OBJ, OBJ_θ or some NEW GF?

We are turning now to our main question, namely whether OBJ or OBJ_θ can be assigned to Fixed_NP or whether a new GF (LFG) should be defined. In what follows we will use the collective term “meaning preserving NPs” for Fixed_NP with heads with independent, non literal senses, accusative NP_MWE and, of course, for free accusative NPs. The picture that has emerged so far reveals three groups of verb MWE:

Lexical Functional Grammar

Group 1: The group of passivisable verb MWEs that contain meaning preserving NPs and satisfy objecthood diagnostics; it comprises the majority of passivisable Modern Greek MWEs.

Group 2: The group of non passivisable verb MWEs containing both meaning preserving NPs and Fixed_NP.

Group 3: The rather small group (1%) of passivisable verb MWEs that contain Fixed_NP.

We can safely say that Group 1 contains verb MWEs whose verbal head selects for an OBJ because all objecthood diagnostics are satisfied. In LFG, passivisation is modeled with a lexical rule that takes as input an active transitive predicate and maps the active OBJ on the SUBJ of the output passive predicate and the active SUBJ on an adjunct of the passive predicate. We assume that the LFG lexical rule for passivisation that requires an OBJ applies normally on these MWEs. Furthermore, an OBJ function can be assigned to passivisable verb MWEs with a Fixed_NP that constitute Group 3; the set of such verb MWEs is very small and it will be harmless to consider them as idiosyncratic (further research might reveal interesting aspects of these Fixed_NP).

Group 2 comprises verb MWEs that do not passivise but contain both meaning preserving NPs that satisfy objecthood diagnostics except for passivisation, and Fixed_NP that satisfy only clitic replacement in the same MWE context provided they are definite.

Kay & Sag (2014) discuss a similar distribution of English MWEs. In order to model the dichotomy introduced by passivisable versus non-passivisable MWEs, they split verbs into real transitive and pseudo-transitive ones.⁵ Real transitive verbs correspond to Group 1 above. The class of pseudo transitive verbs of Kay and Sag includes verbs of measurement such as *cost*, *weigh*, *measure* and MWEs with Fixed_NP such as *to kick the bucket*, therefore pseudo-transitive verbs can be considered a superset of Group 2. By definition then, pseudo-transitive verbs do not select real objects therefore they do not passivise. Furthermore, Kay and Sag observe that (like Modern Greek MWEs) several English MWEs with fixed NPs fail the relativisation and *Which*-question objecthood diagnostics; however, they note that the failure can be explained by semantic or pragmatic constraints on the diagnostics. Passivisation cannot be considered a semantics sensitive diag-

⁵In the revised version of the manuscript <http://www1.icsi.berkeley.edu/kay/idiom-pdf/latex.11-13-15.pdf> the transitive/pseudo-transitive dichotomy has been replaced with the distinction between meaningful and meaningless idiomatic complements of idiomatic verb predicates, the assumption being that passivisation applies on meaningful objects. Of course, in compositional language there are several verbs that accept meaningful objects and still do not passivise while expletives do turn up as subjects of passive verbs.

nostic because expletives and Fixed_NP turn up as subjects of passivised MWEs. Therefore, the proposed splitting of verbs into transitive and pseudo-transitive ones draws on passivisation ability solely and membership in each of the two groups is a lexical property of the verb.

The Kay & Sag (2014) approach that we have discussed so far relies on the verb predicate in order to explain the non-uniform behavior of “objects”. Doug Arnold (University of Essex, personal communication) has suggested an alternative approach, namely that the Fixed_NP could be blamed for the scarcity of MWE passives. The two approaches, the verb predicate oriented and the Fixed_NP oriented one, can be transcribed in LFG in one of the four ways below:

Arnold, Doug


1. (verb predicate oriented): Some feature of the type +/-PASSIVISES is defined in the lexical entry of the verb and the OBJ GF is assigned to Fixed_NP
2. (verb predicate oriented): The verb does not select an OBJ; rather it selects some other GF and this is why the passivisation lexical rule that requires an OBJ cannot be applied
3. (Fixed_NP oriented): The head of the Fixed_NP is associated with the inside-out constraint (OBJ[^]) in the lexicon (Doug Arnold’s proposal); the result of the constraint is that the Fixed_NP is able to realise only the OBJ GF and no other GF.
4. (Fixed_NP oriented): The case of the Fixed_NP is fixed to ACC (accusative).

Hypotheses 3 and 4 seem to be equivalent in the case of Modern Greek and English where subjects of main clauses are marked with the nominative case. As a result, an NP inherently marked as ACC cannot instantiate a SUBJ GF. Consequently, this NP cannot participate in alternations that result in a change of case, such as passivisation and causative-inchoative alternation. The inside-out constraint (OBJ[^]) of hypothesis 3 has the same effect. However, there are passivisable verbs in Modern Greek that head non-passivisable MWEs with a non-causative counterpart where the Fixed_NP is the subject. For instance, the MWE ανάβω τα λαμπάκια κάποιου, anavo ta labakia kapiu, ‘I make somebody angry’ does not have a passive counterpart (49a) although it is headed by a causative verb that has a passive counterpart in compositional language. However, the expression has a non-causative counterpart (49b) where the Fixed_NP τα λαμπάκια, ta labakia turns up as a subject in the nominative case.

causative-
inchoative al-
ternation

- (49) a. * *Ανάφτηκαν τα λαμπάκια του Πέτρου από εμένα.*
 Anaftikan ta labakia tu Petru apo emena.
 turn.on.PASS the lights.ACC the.GEN Petros.GEN by me
 ‘I made Petros angry.’
- b. *Άναψαν τα λαμπάκια του Πέτρου.*
 Anapsan ta labakia tu Petru.
 turn.on.ACT the lights.NOM the.GEN Petros.GEN
 ‘Petros got angry.’

In addition, there are causative/non-causative MWE pairs that are headed by different verbs such as the causative MWE (50a) and its non-causative counterpart (50b). Such examples suggest that the hypothetical constraint (OBJ[^]) originates from the causative form of the verb and not from the Fixed_NP. Furthermore, the use of Fixed_NP in titles as illustrated with example (51b)⁶, in particular, the use of Fixed_NP that feature in verb MWEs that have no non-causative counterpart (51a), suggests that the Fixed_NP oriented approach should be abandoned.

- (50) a. *Ρίχνω τα μούτρα μου.*
 Rixno ta mutra mu.
 drop.1SG the face.ACC mine
 ‘I suppress my dignity.’
- b. *Πέφτουν τα μούτρα μου.* 
 Πεφουν ta mutra mu.
 fall.3SG the face.NOM mine
 ‘My dignity is suppressed.’
- (51) a. *Πίνω το πικρό ποτήρι.*
 Pino to pikro potiri.
 drink the bitter.ACC glass.ACC
 ‘I have a difficult time.’
- b. *το πικρό ποτήρι, ο Αλέξης και ο Κυριάκος*
 to pikro potiri, o Alexis kie o Kiriakos
 the bitter glass, the Alexis.NOM and the Kiriakos.NOM
 ‘the difficult time, Alexis and Kiriakos’
http://www.logiastarata.gr/2016/01/blog-post_194.html

⁶The conjunction in (51b) ensures the NOM case of the Fixed_NP.

We now turn to the verb predicate oriented hypotheses. Hypothesis 2 suggests that the verb assigns to the Fixed_NP some GF other than the OBJ GF. It would make sense to assume that Fixed_NP instantiates OBJ_θ if Fixed_NP occurred in ditransitive constructions exclusively, but it occurs with a large variety of verbs. In addition, OBJ_θ is restricted to themes; it would be risky to apply semantic roles on the idiomatic meanings of Fixed_NP and of verbs in MWEs. Furthermore, OBJ_θ cannot be replaced with a clitic but it can be omitted (Kordoni 2004). For all these reasons, the OBJ_θ GF is an unattractive hypothesis for Fixed_NP.

Hypothesis 1 suggests that OBJ is assigned to Fixed_NP and some feature of the type +/-PASSIVISES is defined on the lexical entry of the verb. This is not a semantic feature because a robust theory that attributes passivisation to verbal semantics is not available yet. On the other hand, such a feature is needed anyway in LFG, otherwise the passivisation lexical rule will apply to verbs like *σπάω*, *spao*, ‘break’ (1) that select a SUBJ and an OBJ.

However, hypothesis 1 is less principled than a GF-based approach. Features are dedicated to specific phenomena while GFs avail themselves to wider generalisations, for instance OBJ_θ has been used to encode the behavior of ditransitives and applicatives cross-linguistically (Bresnan & Moshi 1990). In the case of Fixed_NP, apart from passivisation there is a need to encode two more facts that do not characterise OBJ and cannot be stated as a property of non-passivisable verbs: first, only Fixed_NP introduced with a definite article can be replaced with a clitic in Modern Greek while the English Fixed_NP cannot be replaced with *it*, and second, Fixed_NP are obligatory in both languages.

In the light of the discussion above, one could be tempted to define a new GF that would be instantiated by Fixed_NP. Let us call this GF FIX. The facts we have seen so far that favor the new GF approach, and would be the defining features of FIX, are the following:

- Distributional/semantic: Fixed_NP can be found only with MWEs
- No passivisation: Fixed_NP do not appear as subjects of passive MWEs (very strong tendency)
- Replacement with a clitic: it is restricted to definite Fixed_NP only
- Optionality: Fixed_NP is hardly optional
- Cross-linguistic evidence: Similar behavior is observed in at least two languages, English and Modern Greek.

We have already alluded to the fact that the combined effect of the OBJ_θ and the proposed FIX is not enough to model the range of non-passivisable verbs. FIX could be assigned to Fixed_NP and, probably, to the objects of measurement verbs as well as, generally, to verbs whose object cannot be assigned some clear semantic role. However, it would seem awkward to lump the Modern Greek typically transitive but non-passivisable change of state verbs like σπάω, spao, ‘break’ (1) together with MWEs and measurement verbs; change of state verbs clearly assign the Proto-Patient semantic role to their objects while it is hard to pin down the role that is assigned by measurement verbs and MWEs to the accusative NPs that we discuss here. A clearly unwelcome feature of the GF approach is that it leaves room for more object-like GFs that block passivisation and are selected by rather specific types of predicate, given that OBJ_θ is selected by ditransitives and applicatives and FIX by MWE verbal heads only. Certainly, it would be preferable to keep the GF population small in size because GFs are primitive concepts of LFG (Dalrymple 2001).

Despite the problems discussed above, we would opt for FIX, because it is more principled since it generalises over properties of English and Modern Greek MWEs. Below, we will attempt to support our preference with more facts drawn from Modern Greek MWEs.

6 Words_With_Spaces and the FIX

Fixed_NPs comprise more complex phrasal structures than the ones we have seen so far. These may be of the type DETERMINER+ADJECTIVE+NOUN (51), NP.GEN+NOUN⁷, or NOUN+NP.GEN or NOUN+PP (35). These MWEs do not passivise. (51), (52) can be replaced with a clitic within the same predication because Fixed_NP is introduced with the definite article while the NP in (35) is not.

- (52) Έφαγαν τη σκόνη του Διαμαντίδη
 Efayan ti skoni tu Diamantiði
 ate.3PL the dust.ACC the Diamantidis.GEN
 ‘They were overtaken by Diamantidis.’

In fact, a wider range of fixed strings behave as single complements of the MWE verb (Samaridi & Markantonatou 2014). Here we will exemplify the idea with a predication structure.

⁷NP.GEN+NOUN can be free or fixed; (50) exemplifies a free genitive NP.

The compositional equivalent of the fixed string in (53a) is that of an object that controls a predicative complement. The string *το ψωμί ψωμάκι, to psomi psomaki* (53a) is fixed because its parts cannot be separated (53b) and no free XP can intervene (53c). At the same time, constituency diagnostics show that it is a constituent ((53a)-word order permutations, (53d)-temporal adverb interpolation) and can be questioned (53e). The fixed string is introduced with a definite article and can be replaced with a clitic in the context of the same MWE (53f). Therefore, *το ψωμί ψωμάκι, to psomi psomaki* behaves like a Fixed_NP.

- (53) a. *Λέμε το ψωμί ψωμάκι. / Το ψωμί ψωμάκι λέμε.*
 Leme [to psomi psomaki]. / [To psomi psomaki] leme.
 call.1PL the bread little.bread
 ‘We are starving.’
- b. **To psomi leme psomaki. / *Psomaki leme to psomi.*
- c. **Λέμε το γλυκό ψωμί καημένο ψωμάκι.*
 Leme to glyko psomi kaimenos psomaki
 say the sweat bread poor little-bread
- d. *Λέμε τώρα το ψωμί ψωμάκι.*
 Leme tora to psomi psomaki.
 call now the bread little-bread
 ‘We are starving now.’
- e. *Τί λέμε τώρα; Το ψωμί ψωμάκι.*
 Ti leme tora? To psomi psomaki.
 what do.we.say now? the bread little-bread
- f. *Λέμε το ψωμί ψωμάκι; Ναι, το λέμε.*
 Leme to psomi psomaki? Ne, to leme.
 do.we.say the bread little-bread? yes, it we.say
 ‘Are we starving? Yes, we are.’

The fixed string *το ψωμί ψωμάκι, to psomi psomaki* is a Word With Spaces (WWS) (Sag et al. 2002) that satisfies constituency diagnostics. If *το ψωμί ψωμάκι, to psomi psomaki* is not treated as a WWS, additional constraints to block (53b) would be needed. Similar ideas have been discussed in Green et al. (2013), where the fixed parts of MWEs are represented as flat structures. In the examples above, the idiomatic predicate *λέω, leo*, ‘call’ assigns the FIX GF. Lack of a passive counterpart and clitic replacement follow from FIX normally.

To represent structures like (52), where a free genitive NP occurs as part of the fixed structure of the MWE, the WWS *τη_σκόνη, ti_skoni* selects for a POSS

multiword expression/word with spaces

Grammatical Function. The POSS function will allow for the representation of binding phenomena that are often found with MWEs. For instance, (50a) is an example of a MWE where the possessive pronoun that complements the WWS $\tau\alpha \mu\acute{o}\upsilon\tau\rho\alpha$, *ta_mutra* is necessarily bound by the free subject of the idiomatic verb.

In a nutshell, the FIX GF seems to be instantiated exclusively by phrases headed by fixed strings, such as (53a), that may or may not be generated with the phrase structure rules devised for compositional structures. Along with other work on MWEs within the LFG framework (Attia 2006) we list fixed strings in the lexicon. Treating WWSs as lexical entries deals with the problem of generating non-compositional fixed strings while FIX captures passivisation and replacement with a clitic.

7 Conclusion

We have argued that verbal MWEs that contain direct complements of verbs headed by fixed strings cannot be captured with exactly the same syntactic machinery that has been developed for compositional structures. Despite appearances, fixed complements do not behave as direct or indirect objects with respect to a number of classical objecthood diagnostics. We argued that this special syntactic behaviour is identifiable at a syntactic functional level. If we are right, the syntactic apparatus that has been developed in LFG to represent the notion of “objecthood” in compositional structures has to be expanded to accommodate a new GF that we called FIX. The new GF is necessary for modeling a wide-spread type of MWEs.

Certainly, several issues are left for future research: the range of syntactic phenomena involving the strings that instantiate FIX (modification, alternations as they are illustrated in (49b), (50b) and (51b) and pose questions concerning the treatment of MWEs with a fixed subject), control phenomena and, probably, the modeling of the switch from MWE to compositional contexts that gives rise to joke/irony/pun effects – a phenomenon that might be modeled more easily in terms of WWSs and FIX.

Abbreviations

GF	grammatical function	NLP	Natural Language Processing
HPSG	Head-driven Phrase Structure Grammar	NP	noun phrase
LFG	Lexical Functional Grammar	OBJ	object
MWE	multiword expression	OBJ _θ	OBJECT _θ
		POSS	possessive grammatical function

References

- Anastasopoulos, Antonis, Stella Markantonatou & Yanis Maistros. 2013. *Using object noun and clitic frequencies in the study of transitivity in Modern Greek*. The relative frequencies of nouns, pronouns, & verbs in discourse: an international workshop organised in the framework of the 10th Biennial Conference of the Association for Linguistic Typology, Leipzig, August 12–13.
- Ariel, Mira. 2001. Accessibility theory: an overview. In Ted Sanders, Joost Schilperoord & Wilbert Spooren (eds.), *Text representation: Linguistic and psycholinguistic aspects*. Amsterdam: John Benjamins.
- Attia, Mohammed A. 2006. Accommodating multiword expressions in an Arabic LFG Grammar. In Tapio Salakoski, Filip Ginter, Tapio Pahikkala & Tampo Pyysalo (eds.), *Advances in Natural Language Processing. Lecture Notes in Computer Science*, vol. 4139, 87–98. Berlin, Heidelberg: Springer.
- Baker, Mark C. 2001. Phrase structure as a representation of “primitive” grammatical relations. In William Davies & Stanley Dubinsky (eds.), *Objects and other subjects: Grammatical functions, functional categories and configurationality*, vol. 52, 21–51. Dordrecht: Springer.
- Bargmann, Sascha & Manfred Sailer. 2017. The syntactic flexibility of semantically non-decomposable idioms. In Manfred Sailer & Stella Markantonatou (eds.), *Multiword expressions: Insights from a multi-lingual perspective*. Berlin: Language Science Press.
- Bresnan, Joan & Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21(2). 147–185.
- Cardinaletti, Anna & Micheal Starke. 1999. The typology of structural deficiency: A case study of the three classes of pronouns. In Henk van Riemsdijk (ed.), *Clitics in the languages of Europe*, 273–290. Berlin: Mouton de Gruyter.
- Dalrymple, Mary. 2001. *Lexical Functional Grammar* (Syntax and Semantics 34). San Diego, CA: Academic Press.

- Dowty, David. 1990. Thematic Proto-Roles and argument selection. *Language* 67(3). 547–619.
- Green, Spence, Marie-Catherine de Marneffe & Christopher D. Manning. 2013. Parsing models for identifying multiword expressions. *Computational Linguistics* 39(1). 7–23.
- Gross, Maurice. 1998a. Les limites de la phrase figée. *Langage* 90. 7–23.
- Gross, Maurice. 1998b. Sur les phrases figées complexes du français. *Langue française* 77. 47–70.
- Hudson, Richard. 1992. So-called “double objects” and grammatical relations. *Language* 68(2). 251–276.
- Joseph, Brian J. 1989. The benefits of morphological classification: On some apparently problematic clitics in Modern Greek. In Wolfgang U. Dressler, Hans Christian Luschützky, Oskar E. Pfeiffer & John Rennison (eds.), *Contemporary Morphology*, 171–181. Berlin: Mouton de Gruyter.
- Kay, Paul & Ivan A. Sag. 2014. A lexical theory of phrasal idioms. <http://www1.icsi.berkeley.edu/~kay/idioms-submitted.pdf>.
- Kordoni, Valia. 2004. Modern Greek ditransitives in LMT. In Miriam Butt & Tracy Holloway King (eds.), *Proceedings of the 9th International Lexical Functional Grammar Conference (LFG 2004)*. Stanford, CA: CSLI Publications.
- Kotzoglou, George. 2001. First notes on Greek subjects. *Reading Working Papers in Linguistics* 5. 175–199.
- Pollard, Carl & Ivan A. Sag. 1994. *Head-Driven Phrase Structure Grammar*. Chicago & London: University of Chicago Press.
- Radford, Andrew. 1988. *Transformational grammar: A first course* (Cambridge Textbooks in Linguistics). Cambridge, UK: Cambridge University Press. <http://www.amazon.com/Transformational-Grammar-Cambridge-Textbooks-Linguistics/dp/0521347505>.
- Raskin, Victor. 1985. *Semantic mechanisms of humor*. Dordrecht & Boston & Lancaster: D. Reidel Publishing Company.
- Sag, Ivan A., Timothy Baldwin, Francis Bond, Ann Copestake & Dan Flickinger. 2002. Multiword expressions: A pain in the neck for NLP. In *Proceedings of the 3rd International Conference on Intelligent Text Processing and Computational Linguistics (CICLing-2002)*, 1–15.
- Samaridi, Niki & Stella Markantonatou. 2014. Parsing Modern Greek verb MWEs with LFG/XLE grammars. In *The 10th Workshop on Multiword Expressions (MWE 2014), Workshop at EACL 20*, 33–37. Gothenburg, Sweden.

- Shi-Ching, Olivia Lam. 2008. *Object functions and the syntax of double object constructions in Lexical Functional Grammar*. Oxford: University of Oxford dissertation.
- Thomas, Victoria Joanne. 2012. *Double object constructions and “bill” verbs in English*. University of Oxford Thesis for the MPhil in General Linguistics and Comparative Philology.
- Tsimpli, Ianthi M. & Maria Mastropavlou. 2007. Feature interpretability in L2 acquisition and SLI: Greek clitics and determiners. In Helen Goodluck, Juana Liceras & Helmut Zobl (eds.), *The role of formal features in Second Language Acquisition*, 143–183. New York: Routledge.
- Tsimpli, Ianthi M. & Stavroula Stavrakaki. 1999. The effects of a morphosyntactic deficit in the determiner system: The case of a Greek SLI child. *Lingua* 108. 31–85.