

On the syntax and semantics of verb-complement constructions than involve ‘creation’: A comparative study in Greek and German*

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1. Introduction

In this paper, I discuss the verb-complement constructions that involve “creation” or “production”, such as *write a poem*, *build a house*, *make trouble* in Greek and in German (see Levin 1993 for much discussion of verb classes). These truly transitive verbs go with an external argument, which is an agentive subject, and with a complement which can affect the aspectual interpretation of the verb involved in various ways (see Vendler 1967; Dowty 1979; Tenny 1994). In Greek this complement may appear bare, as illustrated in (1a, b). Since bare singular arguments are impossible in Germanic, unless the noun is mass (see Longobardi 1994, 1996; Chierchia 1998: 341), the complement in cases corresponding to the Greek in (1) constitutes a DP with an indefinite determiner in German, as illustrated in (2a, b):¹

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1. Abbreviations used in interlinear glosses:

ACC	=	accusative case	NOM	=	nominative case
CL	=	clitic	PP	=	perfect participle
DAT	=	dative case	SG	=	singular
NEG	=	negation	SUBJ	=	subjunctive.

- (1) a. grafo vivlio/gramma. vs. grafo ena book/ena gramma.
 write-1SG book/letter._{ACC} write-1SG a book/a letter._{ACC}
 ‘write a book/a letter’. ‘write a book/a letter’.
- b. htizo spiti. vs. htizo ena spiti.
 build-1SG house._{ACC} build-1SG a house._{ACC}
 ‘build a house’. ‘build a house’.
- (2) a. Ich schreibe *(ein) Buch/*(einen) Brief.
 I write-1SG *(a) book/*(a) letter._{ACC}
 ‘write a book/letter’.
- b. Ich baue *(ein) Haus.
 I build-1SG *(a) house._{ACC}
 ‘build a house’.

The semantics of the VPs headed by verbs of creation or production is such that, in the standard interpretation the entity referred to by the complement DP does not exist in the same form before and after the completion of the event. As Hale and Keyser (1996) observe, a house in blueprint is properly a house even before it is built, but it “comes into existence” as a different sort of thing, when built.

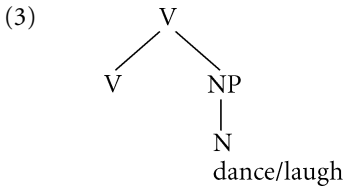
The paper is organized as follows. In Section 2 I illustrate Hale and Keyser’s (1996, 1997, 1999) framework and in 2.1 I draw the distinction of verbs of creation in Greek and German. In Section 3 I examine the verbal categories that appear with a bare complement. In 3.1 I concentrate on verbs of creation that belong to the accomplishment class. I analyze these constructions as unergatives and I argue that in Greek they denote a process, while in German they denote an event. Section 4 addresses the syntactic and semantic analysis. Since Greek is a NP[–arg, +pred] language, as it is proposed, I argue that these verb-complement constructions that appear with a bare noun in Greek are predicates. They contain a null D⁰² with the semantics of nominalization, which shifts the complement NP to the semantic type of an argument, which I analyze as kind denoting. In German, a NP[+arg, +pred] language, the complement of these constructions which is a count

2. See Szabolcsi (1987), Stowell (1991) for the well-established assumption that DPs, but not NPs can be arguments.

noun, is a predicate. As a consequence it appears only with a full DP, in which the determiner is indefinite.³

2. Hale and Keyser's framework

In Hale and Keyser (1996, 1997, 1999) the term "argument structure" refers to the syntactic configuration projected by a lexical item. It is the system of structural relations holding between heads and the arguments linked to them, as parts of their entries in the lexicon, namely the head-complement relation and the head-specifier relation (for more recent discussions see especially Hale and Keyser 1999:453). In this framework all simple unergative verbs, such as *swim*, *fly*, *try*, as well as the denominal verbs (verbs derived from nouns) like *laugh*, *dance*, *walk*, *jump* have the argument structure illustrated in (3):



This structure includes a verb, which is empty, and a lexical constant, which is the nominal complement of the surface denominal verb. These verbs are derived by conflation, i.e., by a specific kind of incorporation. The process of conflation, which consists basically of head movement, adjoining the nominal to the verbal head, fuses the two items into a single word so that the verb is no longer empty, as it shares the overt phonological matrix of the noun. It is worth stressing the fact that the verbal head projects a structure that contains a complement, its sister, but no specifier. This is a characteristic of unergative verbs in general: they project no specifier. In sentential syntax⁴ they have a

3. Cases in which the complement of these constructions is a definite determiner in German (*er schreibt den Brief* 'he writes the letter') are not relevant for the contrast between Greek and German.

4. The term "sentential syntax" refers to the syntactic structure assigned to a phrase or sentence, which involves both the lexical item and its arguments and also its "extended projection". It also includes a full range of functional categories and projections implicated in the formation of the sentence interpretable at PF and LF.

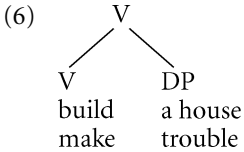
subject which stands for the external argument and is thus excluded from the argument structure configuration itself.

Hale and Keyser (1996, 1997) observe that the verb-complement constructions like *write a poem*, *build a house*, *make trouble*⁵ involve “creation” or “production”. Their subject, an external argument, is “agentive”. The complement (a poem, a house, trouble) is a full DP and it functions as the grammatical object in the syntactic use of such verb phrases. Since unergative verbs are hidden transitives, according to Hale and Keyser (1996) these verb-complement constructions have basically the same argument structure as unergative and denominal verbs, the difference being that the complement is the “lexical variable”, while it is the verb which is the lexical constant, since it has a specific morphological representation. At the same time, this category of transitive verbs share a property with unergative and denominal verbs, such as *laugh*, *dance* etc., as Hale and Keyser (1996, 1997, 1999) observe, namely that (a) both take a complement (the object DP of the examples cited) and (b) the structure they project does not include a specifier. Following Hale and Keyser (1997) I will refer to argument structures having these characteristics as *lexical projection monadic* (‘lp-monadic’) (4). The term “monadic” is used strictly in relation to the arguments (complements or specifiers, irrespective of morphosyntactic category) which must appear internal to the lexical configuration associated with a lexical item. That is to say, that the lexical projection (‘lp’) of the argument structure configuration projected by the head contains one argument, i.e., the complement. The complement relation is defined as the unique sister to the head, as exemplified by the DP *a house/trouble* in the configuration depicted in (6) below. Being unergative verbs, in sentential syntax they are thought of as dyadic, since they have a subject and an object, which is a DP. Following Bittner (1994), Hale and Bittner (1996) among others, Hale and Keyser (1997) assume that the external subject is structurally an adjunct to the VP coindexed with the VP, a formal notation corresponding to predication (see Williams 1980), and in this sense it is “internal” to VP but not to the lexical configuration projected by the lexical head, since it occupies neither a complement position nor a specifier position within that projection. According to Hale and Keyser (1996, 1997, 1999) the fundamental relation of argument structure as far as the Head-Complement is concerned is defined as in (5) below:

5. Cases of verb-complement constructions such as *make trouble* in which the verb ‘make’ functions as a light verb do not fall into the domain of research of this paper.

- (5) Head-Complement: If X is the complement of a head H, then X is the unique sister of H (X and H mutually c-command one another).

These verb-complement constructions, then, project the same monadic (type) structure as does the empty verb of (3), a situation illustrated in (6):



(6) represents the simple head-complement configuration.

Except from the property of the head V projecting no specifier, another property that these verb-complement constructions share with unergative verbs is that they can not enter into the transitive alternation, in contrast with unaccusative verbs, as we see in (7a, b):

- (7) a. The cowboys made trouble.
 *The beer made the cowboys trouble.
 (i.e., the cowboys made trouble because of the beer).
 b. The children laughed.
 *The clown laughed the children.
 (i.e., the children laughed because of the clown).

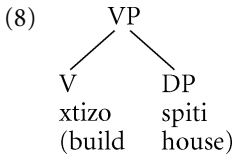
(examples from Hale and Keyser 1996: 33)

Their semantic content is close to the primitive relation in which an event implicates an entity. At D-structure the verb is predicated of a subject (agent) and the whole is interpreted as an event of "creation" or "production" according to which the entity denoted by the subject "makes" or "produces" the entity denoted by the object (see Hale and Keyser 1996, 1997).

2.1 Verbs of creation in Greek and German

In the light of the above, I consider verbs of creation or production that appear with a bare singular count noun in Greek, and with a full DP with an indefinite determiner in German, as lp-monadic verbs since they are internally caused monadic (see (4), (5) and (6)). Internally caused monadic verbs are inherently monadic predicates (see Levin and Rappaport 1995:94). Like their English counterparts, they have the same structure as unergative verbs, with the difference that in Greek their complement can appear bare, as in (8).

Like unergatives and denominal verbs they do not project a specifier, neither can they undergo transitivity, as we see in (9a, b) below:



- (9) a. o Jannis grafi vilvio.
 the-John writes book._{ACC}
 ‘John writes a book’.
- b. *o Petros egrapse ton Janni vivlio.
 the-Peter wrote the John._{ACC} book._{ACC}
 (i.e. John wrote a book because of Peter).

Since the complement of verb like those in (9a, b) is instantiated by a DP in sentential syntax (see Hale and Keyser 1996, 1997, 1999 for English), it is reasonable to assume that the bare complement in Greek must be a DP. Following the well-established view that DPs and not NPs can be arguments (see Longobardi 1994 among others), I propose that the bare complements are instances of DPs with a null determiner.

As for German, I assume that the same verb-complement constructions as illustrated in (2a, b) in Section 1 should also be analyzed as lp-monadic (see (4) and (5)), since they have the same argument structure as the corresponding verbs in English (see Hale and Keyser 1996, 1997, 1999 for English). I repeat here the examples (2a, b) from Section 1:

- (2) a. Ich schreibe *(ein) Buch/*(einen) Brief.
 I write-1SG *(a) book/*(a) letter._{ACC}
 ‘write a book/letter’.
- b. Ich baue *(ein) Haus.
 I build-1SG *(a) house._{ACC}
 ‘build a house’.

Their difference with the Greek verbal lexemes is that in German they appear with a DP with an indefinite determiner. Being unergatives, they can not undergo transitivity either, as shown in (10a, b):

- (10) a. Hans schreibt ein Buch.
 Hans writes a book._{ACC}

- b. *Peter schreibt Hans ein Buch.⁶
 Peter writes John._{ACC} a book._{ACC}
 (i.e. Hans schreibt ein Buch because of Peter).

In the next section, I am going to consider the verbal categories that can appear with a bare singular count noun.

3. Bare singular count nouns and verbal categories

Following the classification of Vendler (1967) and Dowty (1979) verbs of creation belong to the accomplishment verb classes. The majority of the verbs of this class appear to be compatible with a determinerless object in Greek, as is shown in (11a, b), unlike in German, as we see in (11a', b'):

- (11) accomplishments
- | | | |
|---|-----|---|
| <p>a. htizo spiti.
 build-1SG house._{ACC}
 ‘build a house’</p> | vs. | <p>htizo ena spiti.
 build-1SG a house._{ACC}
 ‘build a house.’</p> |
| <p>b. grafo vivlio
 write-1SG book._{ACC}
 ‘write a book’</p> | vs. | <p>grafo ena vivlio
 write-1SG a book._{ACC}
 ‘write a book.’</p> |
| <p>a'. Ich baue *(ein) Haus.
 I build-1SG *(a) house._{ACC}
 ‘build a house’</p> | | |
| <p>b'. Ich schreibe *(ein) Buch.
 I write-1SG *(a) book._{ACC}
 ‘write a book.’</p> | | |

Activity verbs do not form grammatical sentences with a bare singular count noun either in Greek or in German, as illustrated in (12a, a').

- (12) activities/accomplishments
- | |
|---|
| <p>a. sprochno *(ena) kivotio.
 push-1SG a box._{ACC}
 ‘push a box.’</p> |
| <p>a'. ich schiebe *(eine) Kiste.
 I push-1SG a box._{ACC}
 ‘push a box.’</p> |

6. W. Abraham has pointed out to me that this sentence is grammatical if the noun *Hans* is in dative case: *Peter schreibt Hans_{DAT} ein Buch* ‘Peter writes a book for Hans’. This case is not discussed here.

The achievements do not form grammatical sentences with bare singular count nouns, as I show in the examples (13a, b) for Greek and (13a', b') for German.

(13) achievements

- a. anagorizi *(mia) fili tis.
 recognize-3SG *(a) friend._{ACC} her._{CL}
 'He/she recognizes her friend.'
- b. kerdisa *(enan) agona.
 won-1SG *(a) race._{ACC}
 'I won a race.'
- a'. Sie erkennt *(einen) Freund von Maria.
 she recognizes-3SG *(a) friend._{ACC} of Maria._{DAT}
 'She recognizes a friend of Maria.'
- b'. Ich habe *(einen) Kampf gewonnen.
 I have-1SG *(a) race._{ACC} won._{PP}
 'I have won a race.'

As far as state verbs⁷ are concerned they do not appear with a bare noun, as we see in the examples (14a, c) for Greek and (14a', b', c') for German. Some exceptions of states that seem to form grammatical sentences with bare nouns are illustrated in the examples (14b, d) for Greek and in (14d') for German.⁸

(14) states

- a. miso/ agapo *(mia) poli.
 hate-1SG/love-1SG *(a) town._{ACC}
 'I hate/love a town.'
- b. eho (ena) aftokinito.
 have-1SG (a) car._{ACC}
 'I have a car.'
- c. ksero *(mia) taverna.
 know-1SG *(a) tavern._{ACC}
 'I know a tavern.'
- d. ksero (*ena) skaki/(*)mia) geografía.
 know-1SG (*a) chess._{ACC}/(*)a) geography._{ACC}
 'I know chess/geography.'

7. Cases involving existential and intentional verbs, as well as interrogative contexts with bare singular count nouns, are not considered in this paper.

8. These exceptions were excluded from consideration in my count.

- a'. Ich hasse/liebe *(eine) Stadt.
I hate-1SG/love-1SG *(a) town._{ACC}
'I hate/love a town.'
- b'. Ich habe *(ein) Auto.
I have-1SG *(a) car._{ACC}
'I have a car.'
- c'. Ich kenne *(eine) Taverne.
I know-1SG *(a) tavern._{ACC}
'I know a tavern.'
- d'. Ich kann (*ein) Schach/(*)eine Erdkunde.
I know-1SG *(a) chess/(*)a geography._{ACC}
'I know chess/geography.'

Instances of causative and inchoative verbs like *anigo* (open), *klino* (close), *spao* (break) that appear with an indefinite object, do not seem to accept a bare argument neither in the causative nor in the inchoative form, as is shown in (15) and in (15'):⁹

- | | |
|--|--|
| <p>(15) <i>anigo/klino/spao</i> *(mia) porta.
open/close/break-1SG*(a) door._{ACC}

'I open/close/break a door.'</p> | <p>vs. <i>anikse/eklise/espase</i> *(mia)
opened/closed/broke*(a)
porta.
door._{NOM}
'A door opened/closed/broke.'</p> |
| <p>(15') Ich öffne/schließe *(eine) Tür.
I open/close-1SG *(a) door._{ACC}
'I open/close a door.'</p> | |

Summarizing, the data in (11–15) reveal that bare singular count nouns appear with the accomplishment verb class in Greek, while in German all verb classes (with some exceptions) appear with complements with an overt

9. The fact that causative verbs like *liono* (melt), *vrazo* (boil) seem to admit both articulated and unarticulated nouns in both languages is not a counterexample, since the noun in these cases is mass:

- | | |
|---|---|
| <p>a. <i>liono</i> (to) vutyro/keri.
melt-1SG (the) butter/candle._{ACC}
'melt the butter/candle.'</p> | <p>b. <i>vrazo</i> (to) nero.
boil-1SG (the) water._{ACC}
'boil the water.'</p> |
| <p>a'. Ich schmelze (die) Butter/Kerze.
I melt-1SG (the) butter/candle._{ACC}
'melt the butter/candle.'</p> | <p>b'. Ich koche (die) Milch.
I boil-1SG (the) milk._{ACC}
'boil the milk.'</p> |

indefinite determiner. Since the verbs of creation are accomplishment verbs, I will concentrate on this class in next section.

3.1 Verbs of creation and (non-)delimitedness

Since the complement of accomplishments can affect the aspectual interpretation of the verb (see Hale and Keyser 1996), it seems that the complement is part of the semantics of the verb. Thus, verbs of creation being part of the accomplishments (a) go on in time, but they proceed towards a terminus (see Vendler 1967 for verb classes), and (b) consist of an activity plus a resulting state, according to Grimshaw (1990: 26). Thus, accomplishments are analyzed as [[activity] [state/change of state]], as illustrated in (16a), which shows that the complement does not exist in the same form before and after the completion of the relevant event, as Hale and Keyser (1996) observe. The structure of unergatives corresponds only to the activity, i.e. to the first part of the semantic analysis of the accomplishment class, as we see in (16b), and not to a state or to a change of state unlike unaccusatives, as shown in (16c) (see Grimshaw 1990 for discussion on this):

- (16) a. accomplishment: [[activity] [state/change of state]].
 b. unergative: [[activity]].
 c. unaccusative: [[state/change of state]].

Thus, the difference between the verbs of creation that belong to the accomplishment class of verbs, which have an argument structure like unergatives, and the true unergatives is that the verbs of creation need the [state/change of state] part in order to be licenced, while unergatives need only the [activity part].

I propose that the fact that the verbs of creation can appear with a bare singular count noun as their complement in Greek, whereas in German they appear with a DP with an indefinite determiner, shows that they can have a non-delimited reading in Greek, while in German a delimited one; they describe a process in Greek and an event in German.

As Tenny (1994: 11) observes “the direct internal argument is the argument which can measure out the event to which the verb refers”. The ‘measuring-out’ of the event concerns verbs taking incremental theme arguments, like *build a house*. The event is understood to progress through the internal argument, the house, until the event is achieved, i.e. the building of a house requires a certain amount of time and has a definite endpoint. Thus, the delim-

itedness of an event described by a verb depends not only on the verb alone, but on its object, too. Mass nouns (ice cream) or bare plural objects (apples) lead to non-delimited readings, since they describe something of an undefined extent or quantity, whereas specific or count noun objects (a house) lead to delimited reading; they refer to something that has some fixed quantity. What happens then with bare singular count nouns that appear with verbs of creation in Greek? If I say: *gráfo ena vivlio* ((I)write a book 'I write a book') I will finish it when it is written, i.e., the writing of the book has a definite endpoint. But when I say: *gráfo vivlio* ((I) write book 'I write _ book') will I finish it when it is written? It seems that the bare argument functions just like a mass noun, as I can continue writing the book for an infinite period of time. It is not a question about the number of books but on the kind 'book'. Bach (1986) refers to delimited non-statives as verbs that are describing events and non-delimited non-statives as describing a process (see also Parsons 1990). As Veloudis (1998) has observed for Greek, when a sentence like *tróo avgo* ('I am eating _egg') is uttered, what is of interest is the process itself rather than the action and the object as distinct categories.

Thus, a bare singular count noun in combination with a verb of creation leads to non-delimited readings. They are, distributionally and functionally on a par with mass nouns and bare plurals. Since the entity referred to by the complement DP does not exist independently of the action denoted by the verb phrase, it does not appear either with unaccusative verbs, which denote only the state or change of state of an event, (i.e. they correspond to the 2nd part of the accomplishment) (11a), or with unergatives, whose structure corresponds only to the activity.

Trying to explain the German data, the verbs of creation belonging to the "accomplishments" do not have the ability to describe a process, since they appear always with complements with an overt indefinite determiner: The sentence *er schreibt ein Buch* ('he writes a book') has a delimited reading, i.e. the writing of a book has an endpoint. Since delimited non-statives describe events, the verb-complement construction of verbs of creation in German describe an event, too.

Next, I will explain this asymmetry between the two languages by referring to Chierchia's typological distinction between NP[-arg, +pred] and NP[+arg, +pred] languages.

4. The account

In this Section I propose a syntactic and a semantic account of the verb-complement constructions that involve verbs of creation in both languages. Building on Chierchia (1998) I propose that the difference between Greek and German is due to the different types that they belong: Greek is a language, where nouns are predicative. In a language with this setting an NP can be made into an argument if it projects a D, i.e. that this language has a phonologically null D° . I argue that the null D° corresponds to the nominalization operator and is responsible for the type shifting to the kind. On the other hand German is a language in which NPs are either arguments or predicates. Count nouns are predicates; predicates are not able to occur bare. As a consequence the internal argument appears with a lexicalized DP, as in the case with all arguments.

4.1 The syntax-semantics interface

Chierchia (1998:355) argues that the syntax-semantics map for the category NP in Romance is NP[-arg, +pred]. In an NP[-arg, +pred] language every noun is a predicate, and since predicates cannot occur in argumental positions, such a language should disallow bare nominal arguments. However, there are languages such as Italian or Spanish which allow bare arguments, but only, in positions governed by lexical heads. Such languages have a phonologically null D° , which has to be licensed by a lexical head. Thus, in order for an NP to be turned into an argument it must project D.¹⁰

As far as Germanic languages is concerned, according to Chierchia (1998), NPs can be either predicative or argumental. That means that in a language of this sort lexical entries can either denote kinds or predicates. If a lexical entry is of type argument it would have predicativized via “ v ”. This will give a mass denotation. Thus, nouns of this type are going to be mass and will be able to occur bare. If, on the other hand, a noun is of type predicate, it will have a set of atoms as its extension, i.e., it will be count. So, plural marking

10. Longobardi (1994, 1996), among others, also argues that only DPs but not NPs can be arguments. He assumes that in constructions with bare indefinites there is a null D° head which receives a default existential interpretation and must be lexically governed. But see McNally (1995), van Geenhoven (1996), Dobrovie-Sorin and Laca (1996), Dobrovie-Sorin and Laca (1997) for the proposal that bare plurals are bare NP-projections.

will be able to apply to such a noun. Since count nouns are predicates, they won't be able to occur bare as arguments. As Chierchia (1998: 356) observes we are not able to say "table is on the corner". Since that language admits arguments and predicates as possible NP denotations, nouns can be shifted via ' \cap ', a type shifter to kind, which I will discuss in detail in Section 4.2. But if ' \cap ' applies to a singular it won't yield a kind, since kinds cannot have a singular instance in every world, as opposed to plural, where ' \cap ' will yield a kind and we will have a kind \cap TABLES. Hence, plurals are able to occur bare in argument position, and that's the reason why we find plurals in subject position, such as *Hunde bellen* ('dogs bark').

Putting these assumptions together, and relying on the framework of Hale and Keyser, who also assume that the NP is a DP in sentential syntax, I propose that Greek, like Romance is a NP[-arg, +pred] language. Like Italian or Spanish it allows bare arguments in positions governed by a lexical head. I propose that Greek has a phonologically null D,¹¹ and that the constructions under consideration contain a null determiner¹² (see Sioupi 1999), which acts semantically as a type shifter shifting the NP to the semantic type of an argument (Partee 1987). According to Chierchia (1998: 386) "the licensing conditions for null D° in Italian are either licensing by a lexical head (perhaps by a process of LF incorporation) or by the functional head of a Focus Phrase, via Spec-Head Agreement. This takes place either before Spell-Out, in which case the dislocated constituent has to have focal stress, or after Spell-Out (at LF) in which case the moved constituent is subject to a somewhat looser condition of prominence (satisfied by making it 'heavy')". Semantically then, the null D° shifts the semantic type of the NP to that of an argument.

Chierchia's licensing conditions for a null D° hold for the Greek cases of bare singular count nouns, too, since the null D° can be licensed (a) by the lexical head (the verbal predicate by government), as illustrated in (17a) or (b) by the head of a focus phrase, as is shown in (17b):

11. Roussou and Tsimpli (1993: 70) also assume that in bare plurals there is a null D head which must be present in order to be assigned case and thus satisfy Visibility.

12. The notion of null determination, i.e. the absence of determiners for Greek is found in Marmaridou-Protopapa (1984). She discusses cases such as *rotisa jatro* "I have asked doctor" (I have asked a doctor), and she argues that zero determination is correlated with an attributive NP. No individual, definite or indefinite is focused on, rather the property is in focus. The notion of property is also discussed in Dobrovie-Sorin and Laca (1996) and Dobrovie-Sorin and Laca (1997). They analyse bare noun phrases in Romance as property denoting (McNally 1995).

- (17) a. egrapsa vivlio/vivlia
wrote-1SG book/books.
b. VIVLIO/VIVLIA, egrapsa
BOOK/BOOKS_{ACC} wrote-1SG.

In German (Chierchia p.c.) nouns can be either argumental or predicative. Concerning the complements of verbs of creation in German they are count nouns. Since count nouns are predicates they can not appear bare (**er schreibt Brief* ‘he writes letter’). Thus, these verb-complement constructions appear only with a full DP.¹³

4.2 Reference to kinds

On bare plurals in English Kamp (1981), Heim (1982), Kratzer (1989, 1995), Diesing (1992) inter alia, proposed that they are ambiguous: (a) on one interpretation they denote kinds (see also Carlson 1977), and (b) on the other they are (weak) indefinites. Carlson’s (1977) hypothesis, revised by Chierchia (1998), is that bare noun phrases¹⁴ in argument positions are unambiguously kind-denoting (contra Dobrovie-Sorin and Laca (1996) and Dobrovie-Sorin and Laca (1997) for Romance).

Adopting a mechanism like that in Chierchia (1998), according to which the bare NP is a predicate and not a full DP, I propose that the bare complements that appear with verbs of creation in Greek are kind-denoting.

I begin by illustrating Chierchia’s (1998) analysis. Chierchia (1998), building on Chierchia (1984) and Partee (1987) presents an analysis of kinds based on the following premises:

13. As far as the very limited cases of verbs that appear with a determinerless complement in German are concerned as illustrated in a and b below, I handle them as lexicalized phrases:

- | | |
|--|--|
| <p>a. Ich lese Zeitung.
I read-1SG newspaper_{ACC}
‘I read/I am reading a newspaper’</p> | <p>vs. Ich lese eine Zeitung.
I read-1SG a newspaper_{ACC}
‘I read/I am reading a newspaper’.</p> |
| <p>b. Ich rauche Pfeife/Zigarre.
I smoke-1SG pipe_{ACC}/cigar_{ACC}
‘I smoke/I am smoking a pipe/cigar’.</p> | <p>vs. Ich rauche eine Pfeife/Zigarre.
I smoke-1SG a pipe_{ACC}/cigar_{ACC}
‘I smoke/I am smoking a pipe/cigar’.</p> |

14. For bare arguments see van Geenhoven (1996), Giannakidou (1998), and Chierchia (1998), among others.

- (a) Kinds are seen as regularities that occur in nature. They are similar to individuals but their spatiotemporal manifestations are 'discontinuous'. As kinds are characterized 'natural' kinds as dogs, artifacts (like chairs or cars) or complex things (like intelligent students or spots of ink), since we can ascribe to them a sufficiently regular behavior (see Carlson 1977; Krifka et al. 1995). What counts as a kind is set by the knowledge of a community of speakers and not by the grammar per se; what constitutes a kind varies with the context and remains vague.
- (b) Kinds are intensional individuals. Thus, the dog-kind can be identified with the totality of dogs in any world.
- (c) There is a correspondence between natural properties and kinds. According to Chierchia (1998), for a natural property, say DOG, there is a corresponding kind, say the dog-kind and vice versa for the dog-kind there is the property DOG of being a dog. For non-natural properties things are more complicated: for some properties there is a correspondence with their kind counterparts, and for others there is not. Type-shifting functions such as \cap and \cup regulate the mapping between kinds and properties; these shift a property to a kind and vice versa. For example, if DOG is the property of being a dog, then \cap DOG is the corresponding kind. If d is the dog-kind, then \cup d is the property DOG of being a dog.

Another pair of type-shifting operations is constituted by the ι -operator and its inverse, which Partee (1987) calls *ident* (ID). This pair also maps properties (intensional entities) into individuals and vice versa. "The ι -operator selects the greatest element from the extension of a predicate and constitutes the meaning of the definite article" (Chierchia 1998: 359), i.e., it functions as a uniqueness operator:

- (18) the dog = ι DOG = the only dog (if there is one)
 (from Chierchia 1998: 346)

According to Giannakidou and Stavrou's (1999) analysis of the kind denotation in Greek, the definite determiner (in one of its uses) is the syntactic realization of the nominalization operator. The nominalization operator is responsible for the type-shifting to the kind interpretation when the article is applied to a NP which denotes a predicate.

In particular, Giannakidou and Stavrou (1999:321) propose that the definite determiner in Greek is ambiguous between (a) a referential and (b) a generic reading. In the referential use the definite determiner is used in

definite descriptions and proper names **(o) Pavlos* ('(the) Paul'), **(i) gineka me ta mavra* ('the woman in black') (from Giannakidou and Stavrou 1999), which are referential DPs. Reference is coupled with an existential and a uniqueness presupposition. The definite determiner denotes the ι -operator which is the uniqueness operator. Definite descriptions are context-sensitive. For the generic readings Greek resorts to the definite determiner. Generic kind-denoting DPs denote intensional individuals. Generic DPs are not associated with existence or uniqueness presuppositions nor are they context-sensitive. Giannakidou and Stavrou (1999) handle the definite article as the syntactic realization of the nominalization operator. In their analysis the definite article in generic DPs is not expletive (as proposed in Longobardi 1994) but corresponds to Chierchia's nominalization operator. The nominalization operator is the intensionalization of the ι -operator.

In the spirit of Giannakidou and Stavrou (1999) I show that not only the definite determiner but also the null counterpart of D has the semantics of nominalization and can be responsible for the type shifting to the kind.

Before examining the type-shifted kinds, however, it will be useful to establish that the bare internal arguments of verbs of creation exhibit all the properties of kind-denoting bare arguments. If the bare argument is kind-denoting it should display scopelessness (see Carlson 1977; Chierchia 1998:388). Following Chierchia (1998) the relevant tests are the following: (a) a kind-denoting bare argument admits only an opaque reading, as we see in (19), (b) it exhibits narrow scope with respect to negation, as illustrated in (20), and (c) it has differentiated scope, as shown in (21):

- (19) Thelo na grapso vivlio. (opacity)
 want SUBJ. write-1SG book.ACC
 'I want to write a book.'
- (20) Den egrapsa vivlio. (narrow scope)
 NEG wrote-1SG book.ACC.
 'I didn't write a book.'
- (21) grafo gramma sixna. (differentiated scope)
 write-1SG letter.ACC frequently
 'I often write a letter.'

(19) admits an opaque reading, since an interpretation outside the scope of *thelo* (want) is not possible. As is shown in (22) *vivlio* (book) cannot be modified by an indicative relative clause, as would be expected if it could be

interpreted outside the scope of *thelo* (want), (see Veloudis 1982 for discussion on this):

- (22) **thelo* na *grapso vivlio pu exi os thema tou*
 Want-1SG SUBJ write book that has as subject his_{CL}
tin mesopathitiki foni.¹⁵
 the mediopassive voice._{ACC}

A subjunctive relative is used instead, indicating that narrow scope is the only possibility, as (23) illustrates (see Farkas 1985 for Romanian; Veloudis 1982; and Giannakidou 1998 for Greek):

- (23) *thelo* na *grapso vivlio pu na exi os thema tou tin*
 Want-1SG SUBJ write a book that SUBJ. has as subject his_{CL} the
mesopathitiki foni._{ACC}
 mediopassive voice.
 'I want to write a book that has as its subject the mediopassive voice.'

This test shows that the bare complements of these constructions are morphologically like narrow-scope indefinites, since subjunctive relative clauses are compatible only with such interpretations.

Sentence (20) can only mean that *it is not the case that I wrote a book* and not *there is a book such that I wrote it*, which would be the wide scope.

In sentence (21) the adverb *sixna* ('frequently') has scope over the object and the bare singular count noun is interpreted accordingly: we are talking about many letters.

The logical form of (21) is (24), where C(s) is the contextual restriction of the *quantificational adverb* (Q-adverb) (see Krifka et al. 1995):

- (24) SIXNA [C(s)] [gramma (x,s) & grafo (I,x,s)].

(24) says that, frequently, in the contextually relevant situation, I write a letter. Here we have narrow scope of the bare NP binding by the adverbial *quantificational operator* (Q-operator) *sixna* ('frequently'), and the bare NP receives the quantificational force of the Q-adverb.

With an adverb like *spania* ('rarely'), as we see in (25), the NP would be bound by *spania* and would be interpreted as ('few papers'), thus inheriting the corresponding quantificational force of the Q-adverb:

15. Thanks to Anastasia Giannakidou (Groningen) for discussing with me this part of the paper and for bringing this example to my attention.

- (25) grafo gramma spania.
 write-1SG letter_{ACC} rarely
 ‘I rarely write a letter’.

Letting C(s) be the contextual restriction of the Q-adverb, I represent this interpretation as in (25') (see Krifka et al. 1995):

- (25') SPANIA [C(s)] & [gramma (x,s) & grafo (I,x,s)].

This says that, rarely, in the contextually relevant situation, I write a letter.

Another criterion that can be used in support of the claim that verb-complement constructions that appear with bare NP are kind-denoting is the use of the adjective *singekrimeno* ('specific') as well as the WH-word *pio* ('which'). In fact, if we modify a nominal argument headed by a null D with *singekrimeno* ('specific'), the resulting sentence is odd, as shown in (26a); the sentence will be good if the indefinite article *ena* ('a') is added, as I illustrate in (26b):

- (26) a. #egrapsa singekrimeno vivlio.
 Wrote-1SG specific book.
 b. egrapsa ena singekrimeno vivlio.
 Wrote-1SG a specific book.

The same result is obtained when the wh-question word *pio* ('which'), which denotes specific DPs implying a choice, is used to form a question on a bare DP. This is illustrated in the following examples:

- (27) a. xtizo spiti.
 Build-1SG house
 ‘build a house’.
 b. #pio spiti?
 which house?

Since verb-complement constructions of verbs of creation that appear bare in Greek are kind-denoting, the strategy that Giannakidou and Stavrou (1999) propose for the definite determiner is not the only one for nominalizations in Greek. There is also the null counterpart of D, which is responsible for the type shifting to the kind, with the semantics of nominalization.

To sum up, the difference between Greek and German cases is that in Greek the bare singular count noun that appears with verb-complement constructions of verbs of creation is a predicate. In order to be turned into an argument it projects a null D^o with the semantics of nominalization, who acts

as a type shifter to the kind. Verb-complement constructions of verbs of creation are generic kind denoting DPs and denote intensional individuals.

In German the complement of these constructions is also a predicate, and as such it is not able to occur bare. It appears with a full DP, which is an indefinite determiner.¹⁶

5. Conclusion

The discussion in this paper allows me to draw the following conclusions:

First, the lexical projection of verbs of the class of verbs of creation contains just one argument, the complement in both languages. This complement which is a singular count noun appears bare in Greek, but with an indefinite determiner in German. It is proposed that the difference is due to the different sort of languages that Greek and German are: Greek is a NP[-arg, +pred] language, while German a NP[+arg, +pred] language. Greek, as opposed to German, has a null D° , which is projected in order for the bare NP to become an argument, and is acting as a type shifter to the kind interpretation with the semantics of the nominalization operator. The fact that the complement appears bare has as a consequence that in Greek a process arises, while in German an event, since these constructions appear in German with an indefinite DP.

Second, I showed that the complement of these constructions which appears bare in Greek is kind-denoting, since it has all the characteristics of kind-denoting arguments.

Chierchia's solution raises questions about a number of related phenomena which, though they fall outside the scope of the present investigation, should at least be mentioned here. Note that there are also differences inside Romance, such as Brazilian Portuguese, which are not expected under Chier-

16. I will analyse the corresponding cases with a definite determiner in German as an instance of a unique individual, who meets the condition expressed by the descriptive content of the NP. In my analysis the full DP with a definite determiner in German corresponds to Chierchia's ι -operator. Following Chierchia's mechanism (1998) I assume that the ι -operator, which constitutes typically the meaning of the definite article, shifts the property into an individual, as the following example illustrates the case:

- a. Peter schreibt den Brief.
Peter writes-1SG the letter._{ACC}
- b. den Brief = ι BRIEF = the only brief.

chia's account. In Brazilian Portuguese, bare plurals and bare singular count nouns can appear in argument position *Eu escrevi carta por muitos anos* (I wrote letter for many years, 'I wrote letters for many years') (from Schmitt 1996) (see Schmitt 1996; Munn and Schmitt 1999). Another question left open in this discussion is the following: If the analysis I am proposing here is on the right track, and if Greek, is a NP[-arg, +pred] language, like Romance, then why does Greek allow bare singulars in object position and Romance not? Further research is needed before we get a better understanding of zero determination in both subject and object position crosslinguistically.

References

- Bach, Emmon (1986): "The algebra of events". *Linguistics and Philosophy* 9. 5–16.
- Bittner, Maria (1994): *Case, Scope and Binding*. Dordrecht: Kluwer.
- Carlson, Greg (1977): *Reference to Kinds in English*. PhD thesis. Umass. Amherst. Published in (1980) by Garland. New York.
- Chierchia, Gennaro (1984): *Topics in the Syntax and Semantics of Infinitives and Gerunds*. PhD thesis. Umass. Amherst. Published by Garland. New York.
- Chierchia, Gennaro (1998): "Reference to Kinds Across Languages". *Natural Language Semantics* 6. 339–405. Kluwer Academic Publishers.
- Diesing, Molly (1992). *Indefinites*. Cambridge. MA.: MIT Press.
- Dobrovie-Sorin, Carmen and Brenda Laca (1996): "Generic Bare NPs". Manuscript. University of Paris.
- Dobrovie-Sorin, Carmen and Brenda Laca (1997): "La Genericite entre la Reference a l'Espece et la Quantification Generique". *Proceedings of Langues et grammaire*. 163–177.
- Dowty, David (1979): *Word Meaning and Montague Grammar*. Dordrecht: Reidel
- Farkas, Donka F. (1985): *Intensional Descriptions and the Romance subjunctive mood*. Outstanding Dissertations in Linguistics. New York: Garland.
- van Geenhoven, Veerle (1996): *Semantic Incorporation and Indefinite Descriptions: Semantic and Syntactic Aspects of Noun Incorporation in West Greenlandic*. PhD thesis. University of Tuebingen.
- Giannakidou, Anastasia (1998): *Polarity Sensitivity as (Non)veridical Dependency* (Linguistik aktuell, 23). Amsterdam: Benjamins.
- Giannakidou, Anastasia and Melita Stavrou (1999): "Nominalization and ellipsis in the Greek DP". *The Linguistic Review* 16. 295–333.
- Grimshaw, Jane (1990): *Argument Structure*. Cambridge. MA: MIT Press.
- Hale, Ken and Bittner (1996): "The structural determination of case and agreement". *Linguistic Inquiry* 27. 1–68.
- Hale, Ken and Samuel Jay Keyser (1996): "On the Complex Nature of Simple Predicators". *Complex Predicates*. A. Alsina, J. Bresnan & P. Sells (eds.). 29–66. CSLI Publications.

- Hale, Ken and Samuel Jay Keyser (1997): "The Basic Elements of Argument Structure". Manuscript. MIT.
- Hale, Ken and Samuel Jay Keyser (1999): "A Response to Fodor and Lepore "Impossible Words?"". *Linguistic Inquiry* 30. 453–466.
- Heim, Irene (1982): The Semantics of Definite and Indefinite NPs. PhD thesis. UMass. Amherst.
- Kamp. (1981): "A theory of thruth and discourse representation". *Formal Methods in the Study of Language*. J. Groenendijk, Th. Janssen & M. Stokhof (eds.). 277–322. Amsterdam: Mathematical Center.
- Kratzer, Angelika (1989): "Stage-level and individual-level predicates". *Genericity in General Language*. M. Krifka (ed.). 247–284. SNS-Bericht. University of Tuebingen.
- Kratzer, Angelika (1995): "Stagel-level and individual-level predicates". *The Generic Book*, G. Carlson & F.J. Pelletier (eds.). 125–176. Chicago: Chicago University Press.
- Krifka, Manfred, Francis Jeffrey Pelletier, Gregory N. Carlson, Alice ter Meulen, Gennaro Chierchia and Godehard Link (1995): Genericity. An introduction. *The Generic Book*. G. Carlson & F.G. Pelletier (eds.). 1–124. Chicago: Chicago University Press.
- Levin, Beth (1993): *English Verb Classes and Alternations*. Chicago: Chicago University Press.
- Levin, Beth and Malka Rappaport Hovav (1995): *Unaccusativity at the syntax-lexical semantics level*. Cambridge: MIT Press.
- Longobardi, Giuseppe (1994): "Reference and proper names: A theory of N-Movement in syntax and Logical Form". *Linguistic Inquiry* 25. 609–665.
- Longobardi, Giuseppe (1996): "The Syntax of N-Raising: A minimalist Theory". *OTS Working Papers*. OTS Utrecht.
- Marmaridou-Protopapa, Angeliki S. (1984): The study of reference, attribution and genericness in the context of English and their grammaticalization in Modern Greek NP. PhD. Darwin College. Cambridge.
- McNally, Louise (1995): "Bare plurals in Spanish are interpreted as properties". Ms. Universitat de Pompeu Fabra.
- Munn, Alan and Cristina Schmitt (1999): "Bare nouns and the morpho-syntax of number". Paper presented at LSRL 29. University of Michigan. April 1999.
- Parsons, Terence (1990): *Events in the Semantics of English. A Study in Subatomic Semantics*. (Current Issues in Linguistics 19). Cambridge: MIT Press.
- Partee, Barbara (1987): "Noun phrase interpretation and type-shifting principles". *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*. J. Groenendijk, de Jongh & M. Stokhof (eds.). 115–143. Dordrecht: Foris.
- Roussou, Anna and Ianthi M. Tsimpli (1993): "On the Interaction of Case and Definiteness". *Current Issues in Linguistic Theory*, 117. *Themes in Greek Linguistics*. I. Philippaki-Warburton, K. Nicolaidis & M. Sifianou (eds.). 69–76. Amsterdam: Benjamins.
- Schmitt, Cristina (1996): "Licencing definite determiners". *ZAS Papers in Linguistic* 5. A. Alexiadou, N. Fuhrhop, P. Law & S. Loehken (eds). 104–118.
- Sioupi, Athina (1999): "The distribution of object bare singulars". *Proceedings of the 4th International Conference on Greek Linguistics*. September 17–19. (to appear).

- Stowell, Timothy (1991): "Determiners in NP and DP". *Views on Phrase Structure*. K. Leffel & D. Bouchard (eds.), 37–56. Dordrecht: Kluwer.
- Szabolcsi, Anna (1987). "Functional Categories in the Noun Phrase". *Approaches to Hungarian*. I. Kenesei & J. Szeged (eds.), 167–189.
- Tenny, Carol L. (1994): *Aspectual Roles and the Syntax-Semantic Interface*. Studies in Linguistics and Philosophy 52. Dordrecht: Kluwer.
- Veloudis, Jannis (1982): "I ypotaktiki stis anaforikes protaseis" ('The subjunctive in relative clauses'). *Glossologia* 2–3 (1983–1984). 111–135.
- Veloudis, Jannis (1998): "Introduction to Semantics". *Lecture Notes*.
- Vendler, Zeno (1967): *Linguistics in Philosophy*. Cornell University Press.
- Williams, Edwin (1980): "Predication". *Linguistic Inquiry* 11. 203–238.