

Transitivity Alternations in Diachrony

Changes in Argument Structure and Voice Morphology

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By

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P U B L I S H I N G

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PREFACE

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LIST OF ABBREVIATIONS AND ACRONYMS

ABS	absolute case
ACC	accusative case
AGR	agreement
ACT	active voice morphology
ANTIC	anticausative morpheme
AOR	aorist tense
ASP	aspect
CAUS	causative morpheme
Compl	Complement
CP	complementiser phrase
DAT	dative case
DP	Determiner Phrase
EPP	Extended Projection Principle
ERG	ergative case
FUT	future tense
FUTPERF	future perfect tense
GEN	genitive case
GER	gerund
IE	Indo-European
IMP	imperative mood
IMPERF	imperfect tense
IMPRFVE	imperfective aspect
INF	infinitive
INTR	intransitive type
IP	Inflection Phrase
MID	middle voice
NACT	non-active voice morphology
NACT1	type 1 of non-active voice morphology
NACT2	type 2 of non-active voice morphology
NOM	nominative case
NP	Noun Phrase
O/OBJ	object
OPT	optative mood
PART	participle
PASS	passive voice
PERF	(present) perfect tense
PERFVE	perfective aspect
PIE	Proto-Indo-European
PL	plural marker
PLD	Primary Linguistic Data
PLUP	pluperfect tense
POSS	possessive marker
PP	Prepositional Phrase
PRED	Predication head
PRES	present tense
prt	particle
REFL	reflexive
S/SUBJ	subject
SG	singular marker
Spec	Specifier
TP	Tense Phrase
TRANS	transitive type/Transitivity head
UG	Universal Grammar
V	verb

VOC	vocative case
VoiceP	Voice Phrase
vP	light verb Phrase
VP	Verb Phrase
WEAK	weak pronoun

CHAPTER ONE

INTRODUCTION

1.1 Aim and Objectives of the Research

This monograph examines the diachrony of verb transitivity (putting an emphasis on examples from diachrony of Greek verb transitivity) and, more particularly, the changes in causative verbs (verbs that denote change-of-state) and in transitivity alternations, defining the aspects of change in the lexicon that are constrained by Universal Grammar and those that are constrained by specific characteristics of language in every historical period. Furthermore, the aim is to show the mechanisms and processes of change in lexicon and in syntax that are concerned with the transitivity of verbs¹. More specifically, I present the results of the research on diachronic changes in Greek in relation to transitivity alternations/alternating verbs:

- (1) English
a. John opened the window
b. The window opened
Greek
a'. O Γιάννης άνοιξε το παράθυρο²
o Janis anikse to parathiro
the.NOM Janis.NOM open.ACT.PAST.PERFVE.3SG the.ACC window.ACC
'Janis opened the window'
b'. To παράθυρο άνοιξε
to parathiro anikse
the.NOM window.NOM open.ACT.PAST.PERFVE3SG
'The window opened',

in comparison with non-alternating verbs:

(a) transitive verbs (with no intransitive use):

- (2) English
a. John cut the bread
b. *The bread cut by itself
Greek
a'. O Γιάννης έκοψε το ψωμί
o Janis ekopse to psomi

¹ 'Transitivity' is, in reality, a neutral term (which is why I will frequently call it as '(in)transitivity') since it does not refer to the presence of a direct object but constitutes a characteristic of the verb that can receive a positive indicator/mark [+transitive] and means that the verb takes a direct object or a negative indicator/mark [-transitive] and demonstrates the obligatory absence of the direct object.

² Examples from Greek are quoted in both Greek and Roman scripts; the decision to transliterate the Greek can help linguists with no training in Greek to examine, check and cite the relevant examples given here (cf. Goldstein 2008). Examples will be given a broad phonological transcription; stress will be not marked except for the cases where the marking of stress is necessary for the argumentation (cf. Ralli 2009). As is well known, the phonological system of Greek has changed significantly during the Hellenistic-Roman period. For that reason and as details about the phonological system and its changes are not so relevant to this present study of syntactic changes, Ancient and Hellenistic-Roman Greek examples are transcribed according to the Classical Greek pronunciation (since not all of the changes were completed by the end of the Hellenistic period), whereas examples of the Medieval and Modern Greek period are given a Modern Greek transcription. For readability the vowels are presented by transliterating the Greek orthography, not in phonological transcription (cf. Kiparsky 2003): (i) for <ω> I write o; (ii) for <ου>, ou (iii) for <ει>, ei and (iv) for <η>, e. Phonologically <ω> corresponds to /o:/, <ου> corresponds both to /ou/ and to /oo/, <ει> both to /e:/ and /ei/, and <η> to /e:/.

This 'shortcut' is not problematic in the present context because this present study of syntactic change does not depend on vowel quality.

the.NOM	Janis.NOM	cut.ACT.PAST.PERFVE.3SG	the.ACC	bread.ACC
'Janis cut the bread'				
b'. *To	ψωμί	έκοψε	από	μόνο του
*to	psomi	ekopse	apo	mono tu
the.NOM	bread.NOM	cut.ACT.PAST.PERFVE.3SG	by	itself
‘*The bread cut by itself’,				

(b) non-alternating unaccusative intransitive verbs:

(3) English

- a. The tree fell
- b. *John fell the tree

Greek

a'. To	δέντρο	έπεσε		
to	dhendro	epese		
the.NOM	tree.NOM	fall.ACT.PAST.PERFVE.3SG		
'The tree fell'				
b'. *Ο	Γιάννης	έπεσε	το	δέντρο
*o	Janis	epese	to	dhendro
the.NOM	Janis.NOM	fall.ACT.PAST.PERFVE.3SG	the.ACC	tree.ACC
‘*Janis fell the tree’				

and (c) unergative intransitive verbs:

(4) English

- a. Maria came
- b. *The bus came Maria back to the hotel

Greek

a'. H	Μαρία	ήρθε			
i	Maria	irthe			
the.NOM	Maria.NOM	come.NACT.PAST.PERFVE.3SG			
'Maria came'					
b'. *To	λεωφορείο	ήρθε	τη	Μαρία	στο ξενοδοχείο
*to	leoforio	irthe	ti	Maria	sto ksenodhoxio
the.NOM	bus.NOM	come.NACT.PAST.PERFVE.3SG	the.ACC	Maria.ACC	to-the hotel
‘*The bus came Maria back to the hotel (‘the bus brought Maria back to the hotel’).					

Emphasis is placed on transitivity alternations (ex. 1a, b, a', b') for three principal reasons:

(a) the verb class (verbs denoting change-of-state) that participates in these alternations constitutes the central or prototypical class of transitive verbs (as I will argue in the second chapter/theoretical framework);

(b) the diachronic behaviour of these verbs -in comparison with the diachronic behaviour of the exclusively transitive or exclusively intransitive verbs- can present the basic characteristics of the mechanism of change in verb transitivity;

(c) the presence of a transitivity alternation even at a synchronic level comprises one of the basic means of change in verb valency since it concerns basic grammatical phenomena such as transitivity and intransitivity, as well as changes in voice morphology ((in)transitivity morphological markers).

The research belongs to the field of diachronic studies and examines diachronic data through the prism of the Generative Grammar diachronic approach of Lightfoot (1979, 1999, 2006a, b). It contributes to the field of language change since it constitutes a systematic attempt at research on the diachrony of syntax and of the lexicon-syntax interface. Many studies have concerned themselves with the theoretical analysis of transitivity alternation in Modern Greek (Theophanopoulou-Kontou 1980, 1982, 1999b, 2004; Tsimpli 1989, 2006a; Alexiadou & Anagnostopoulou 1999a, b, 2004), with particularly significant results, but the issue of the diachronic development of transitivity has not been the subject of systematic research.

The approach and basic position concerning the organisation of the lexicon and its interaction with syntax adopted by this monograph is that verb meaning has an effect on verb syntax (Levin & Rappaport Hovav 1995, 2005; Rappaport Hovav & Levin 1998). The verb has structured meaning that derives from the meaning of the event type. For verbs that participate in syntactic alternations, and particularly for verbs that participate in transitivity alternations, information on the event type can be

marked by overt or zero morphemes³. This morphological process has syntactic consequences since it expresses the relationship that exists between the arguments of the verb.

From the numerous general issues that can be raised concerning the argument structure, two principal issues are examined in this study:

The first concerns the explanation of the limited possible verb structures that exist in the various periods not only of Greek but of all languages. This issue arises from the observation (Hale & Keyser 1993; Juarros-Daussa 2003) that a predicate (without the help of an additional lexical head) can only accept one (mono-transitive verbs) or at the most two (ditransitive verbs) arguments (with the exception of the external argument/subject⁴). The majority of theories on argument structure are based on θ -roles and/or primitives of the aktionsart. The aim of my analysis is to demonstrate the mechanisms that synchronously (in one period of the history of the Greek language) but also diachronically (in different periods in the history of the Greek language) limit the possibilities for the extension and modification of an argument structure and connect specific verb classes with specific structures.

The second general issue concerns the correlation of the lexical-semantic structure, in other words, of the verb meaning as it is typically represented in modern theory, with syntactic structures. This problem is connected with the traditional problem of the correlation of (semantic) arguments (in other words the elements that semantically complete a verb) with syntactic representations, and it is concerned with the lexicon-syntax interface⁵.

It is, of course, evident that an exhaustive examination of all the phenomena and questions connected with transitivity and all the verb classes of the periods covered by this study (5th century BC to the 17th/18th century AD) would lead to research that exceeds the size restrictions permissible for a monograph since a wide variation of syntactic behaviours and changes in the syntax of various verb classes can be observed. For this reason, the research into the diachronic theory of transitivity takes into consideration three specific questions:

(a) What is the connection between transitive and intransitive types? Are transitive and intransitive types connected lexically with processes of (lexical) transitivity (therefore, the intransitive type is the basic type [Dowty 1979; Pesetsky 1995]) or of (lexical) de-transitivity (therefore, the transitive type is the basic type [Levin & Rappaport Hovav 1995; Chierchia 1989/2004; Reinhart 1997, 2000])?

(b) What is the role of morphology? Is morphological marking connected with lexical derivation? Is there a link between the additional morphology and the derived form?

(c) Why do languages and historical periods of the same language vary regarding which verbs participate or do not participate in transitivity alternations? What is the relationship between (a) intransitive alternating verbs (anticausatives), (b) intransitive passive verbs, and (c) transitive verbs (as a whole, and especially with causative transitive verbs)? (cf. the theoretical examination of (anti)causativisation by Alexiadou 2006a, c).

Finally, a necessary supplement to a complete study of (in)transitivity would consist of the examination of changes in relation to the arguments and adjuncts that complete the transitive (causative) structures (agent, cause or instrument and patient) and the arguments that complete the intransitive structures (patient, cause or instrument and/or agent [in the case of intransitive passive structures]).

Parallel to the aforementioned primary questions, an examination was also undertaken regarding the following issues that correlate with the previous central questions of diachronic research: the presence or loss of prefixes for innovative transitive or intransitive structures and the changes in the (direct) object case (genitive, dative morphological case, and prepositional phrases that replace or are replaced by the accusative morphological case). The tendency, as will be shown, is only towards the extension of the morphological accusative case, but a distinction between the different instances of the extension of the accusative case is vital.

1.2 Transitivity, Prototypical Transitivity, and Causativity

In this section, I will try to present the reasons why I posit causative verbs as the focus of my research on transitivity, as well as the precise characteristics that distinguish them from the rest of the transitive verbs and, of course, from intransitive verbs. The theoretical analysis of the prototypical transitive

³ Cf. Drachman 2005, 2009.

⁴ The external argument is 'the argument of a predicate X which is not contained in the maximal projection of X; in general, this is the subject of a predicate' (J. Kerstens, E. Ruys & J. Zwarts 1996-2001: *Lexicon of Linguistics*. Utrecht Institute of Linguistics OTS, Utrecht University – Williams 1980; Chomsky 1981, 1986).

⁵ The correlation of the semantic structure with the syntactic structure is dealt with theoretically either by the same syntactic principles that also define the relations in the syntactic level or by the separate level of the lexicon-syntax interface, which is based on special rules of correlation, thematic hierarchies, and linking rules.

verbs, i.e. causative verbs, is based, on the one hand, on Tsunoda's approach, which modified Hopper & Thompson's classical study on transitivity, and, on the other hand, on the analyses of Levin & Rappaport Hovav.

(a) Hypotheses on transitivity and unaccusativity

Hopper & Thompson (1980, 1982) analysed transitivity as a continuum and attempted to show the parameters of the complete transitive sentence that are related to grammatical universals (which appear in the typology of languages) and to the use of language.

Table 1.1 Hopper & Thompson's transitivity parameters (1980: 252)

	<div style="display: flex; justify-content: space-between; align-items: center;"> High Transitivity Low Transitivity </div> <div style="text-align: center; margin-top: 5px;"> ← → </div>	
PARTICIPANTS	two or more participants (agent and object) <i>John hugged Maria.</i>	one participant <i>Peter died.</i>
KINESIS	action. <i>Kain killed Abel.</i>	non-action <i>I like Helen.</i>
ASPECT	telic <i>I ate it up.</i>	atelic <i>I'm eating it.</i>
PUNCTUALITY	punctual <i>Mary kicked the ball.</i>	non-punctual <i>Mary carried the book.</i>
VOLITIONALITY	volitional <i>I wrote your name.</i> <i>I broke the glass.</i>	non-volitional <i>I forgot your name</i> <i>The glass broke.</i>
AFFIRMATION	affirmative <i>Peter smokes.</i>	negative <i>Peter does not smoke.</i>
MODE	realis <i>I picked up the phone.</i>	irrealis <i>If I had picked up the phone.</i>
AGENCY	The agent is high in potency [+animate] <i>George startled me.</i> <i>John frightened me.</i>	The agent is low in potency [-animate] <i>The picture startled me.</i> <i>The picture frightened me.</i>
AFFECTEDNESS OF OBJECT	The object is totally affected (total change of object) <i>I drank the milk.</i>	The object is not affected (partial change of object) <i>I drank some milk.</i>
INDIVIDUATION OF OBJECT	High degree of individuation of object (proper nouns, concrete animates, singular number, countable, definite) ⁶ <i>I bumped into Charles.</i>	The object is not individuated <i>I bumped into the table.</i>

In relation to the previously shown parameters, Hopper & Thompson formulated the Transitivity Hypothesis (1980: 255): 'If two clauses (a) and (b) in a language differ in that (a) is higher in transitivity according to any of the features, then, if a concomitant grammatical or semantic difference appears elsewhere in clauses, that difference shows (a) to be higher in Transitivity'⁷.

⁶ It should be noted that the indirect animate object is considered an indication of greater transitivity than any direct object.

⁷ Hagège (1982) also dealt with transitivity as a continuum. For Hagège, the contrast between 'strong' and

The degree of transitivity (high-low) has morphosyntactic and semantic consequences: the morphological markedness of the object, according to the analysis by Hopper & Thompson, is attributed not to the distinction between subject and object but is the result of the degree of transitivity of the sentence as a whole, as it arises from the parameters of transitivity. Hopper & Thompson support their hypothesis by analysing, in a large number of languages, the case marking of the object, the case marking of the subject (which bears the semantic role of the agent or the patient), the incorporation of the object into the verb, the word order, the verb morphology, the anti-passive, and the reflexive structure.

Furthermore, according to recent approaches, neither transitive verbs nor intransitive verbs make up a homogeneous group; the Unaccusativity Hypothesis (Permuter 1978; Burzio 1986) distinguishes two subclasses of intransitives, the unergative and the unaccusative intransitives, each one of which is related to a different syntactic structure. The unergative verbs (e.g., *swim*) have their sole argument in the position of the syntactic subject ([Spec, vP]) but have the position of the syntactic object empty ([Compl, VP]); the sole argument of the unaccusatives (e.g., *appear*) is generated in the [Compl, VP] position, but the subject position is empty. With the application of the rule ‘move α ’ (movement of NP) according to the older theoretical perspective or to receive/check the nominative case, the sole argument of the unaccusative verbs moves to the empty position of the subject.

- (5) a. unergative verb (*swim, sing, dance*): DP [vP V]
 b. unaccusative verb (*appear, intransitive break, intransitive open*): — [vP V DP]

In thematic terms, the unergative verbs take agents as arguments and the unaccusative verbs take patients or themes as arguments. Burzio (1986) connected the ability of a verb to have an external argument with the ability to assign structural case (Burzio’s Generalisation): an unaccusative verb, precisely because it does not have an external argument, is unable to take an object in the accusative case, or, according to the Government and Binding theory, it does not assign structural case to its object⁸.

‘weak’ transitivity in different languages refers to: (1) the degree of volitionality for the accomplishment of an action, (2) the degree of the affectedness of the patient, (3) the degree of accomplishment of the action and (4) the degree of definiteness of the patient.

⁸ The structure of intransitive predicates in Modern Greek and their relationship with the Unaccusativity Hypothesis have occupied many linguists (Markantonatou 1992; Kakouriotis 1993, 1994; Sioupi 1997; Embick 1998; Alexiadou & Anagnostopoulou 1999a, b; Theophanopoulou-Kontou 1999a, b, 2003a). Markantonatou (1992) and Alexiadou & Anagnostopoulou (1999a) attempted to define the criteria that distinguish the intransitive verbs of Modern Greek into unergative and unaccusative since the majority of the criteria used cross-linguistically cannot be applied to Modern Greek (all intransitive verbs in Modern Greek take the verb ‘have’ as auxiliary; Modern Greek does not have resultative and impersonal passive structures). An important criterion for Modern Greek verbs has been said to be the ability to form adjectival participles for unaccusative but not for unergative verbs:

- (1) a. πεσμένο φύλλο
 pezméno filo
 fall.NACT.PART leaf
 ‘fallen leaf’
 b. *τρεγμένο άνθρωπος
 *treghménos anthropos
 run.NACT.PART human
 ‘a person who has run a lot’

Furthermore, unaccusative verbs in the past tense, when the subject exhibits something countable, do not allow the presence of a progressive adverbial (and atelic interpretation); only when the subject exhibits quantity is the progressive adjunct (and atelic interpretation) allowed:

- (2) a. *Ο Θησέας έφτανε επί μέρες στην Αθήνα
 *o Theseas eftane epi meres stin Athina
 the.NOM Theseus.NOM arrive.ACT.PAST.IMPRVE.3SG for days in Athens
 ‘*Theseus was arriving for days in Athens’
 b. Αθλητές έφταναν επί μέρες στην Αθήνα
 athlites eftanan epi meres stin Athina
 athletes.NOM arrive.ACT.PAST.IMPRFVE.3PL for days in Athens
 ‘Athletes were arriving for days in Athens’

Finally, Alexiadou & Anagnostopoulou (1999a) point out that unaccusative verbs of change-of-state in Modern

(b) Prototypical transitivity

The transfer of emphasis from the transitivity continuum to prototypical transitivity was first undertaken by Cooreman, Fox & Givón (1984). For them, transitivity is concerned with three main characteristics of the sentence: (a) the agent: the prototypical transitive sentence has an explicitly denoted agent (or cause), who acts volitionally and has full control over the action; (b) the patient: the prototypical transitive sentence has an explicit patient who does not participate of his/her own volition in the action and does not control the action; and (c) the verb: a prototypical transitive sentence has a verb that shows the realis mood and perfective aspect. The sentences that bear the three aforementioned properties are prototypically transitive.

The concept of prototypical transitivity has been accepted and used (sometimes with modifications) in many studies: Tsunoda (1985, 1994); DeLancey (1987); Croft (1990); Antonopoulou (1991); Kibrik (1993); Ono (1999); Lazard (2006); Næss (2007)⁹.

Tsunoda & Lazard reject, however, the opinion that all the parameters of transitivity are connected equally among themselves: a sentence may exhibit low transitivity in relation to a parameter (for example, the definiteness of the object) and high transitivity in relation to another parameter (for example, the presence of the agent). Lazard considers the presence of two participants in a sentence as a fundamental and necessary condition to be able to talk about transitivity and not simply as one of the many determinants that indicate high transitivity. For Tsunoda, the close relationship of only some of the factors (the volitionality and agent) is also of particular importance, as is the existence of a hierarchy of the morphosyntactic marking (the affectedness of the object appears to constitute a more significant factor than the volitionality and the agent for the morphosyntactic marking of increased transitivity) and the scale of affectedness (a continuum of affectedness that has consequences for the morphosyntactic markedness of the object).

Tsunoda, using as a basis the aforementioned correlations of high transitivity parameters, creates a hierarchy of verbs based on the probability that semantic classes of verbs have of being transitive cross-linguistically. The verbs that belong to the semantic classes that are higher in the hierarchy are more likely to be transitive across languages. The classes and their particular semantic characteristics are as follows:

- (i) Verbs with a direct effect on the argument of the patient and resultative meaning (causativity):
'kill', 'break', 'bend'
- (ii) Verbs with a direct effect on the argument of the patient but with non-resultative meaning:
'hit', 'kick', 'shoot'
- (iii) Verbs of perception; patient more attained:
'see', 'hear', 'find'
- (iv) Verbs of perception; patient less attained:
'look'
- (v) Verbs of pursuit:
'search', 'wait'
- (vi) Verbs of knowledge:
'know', 'understand', 'remember', 'forget'
- (vii) Verbs of feeling:

Greek can form transitive structures, whereas the unergative verbs cannot:

- | | | | | | |
|--------|------------------------|-----------|---------------------------|---------|----------|
| (3) a. | To | βάζο | έσπασε | | |
| | to | vazo | espase | | |
| | the.NOM | vase.NOM | break.ACT.PAST.PERFVE.3SG | | |
| | 'The vase broke' | | | | |
| b. | O | Γιάννης | έσπασε | το | βάζο |
| | o | Janis | espase | to | vazo |
| | the.NOM | Janis.NOM | break.ACT.PAST.PERFVE.3SG | the.ACC | vase.ACC |
| | 'Janis broke the vase' | | | | |

⁹ Antonopoulou recognises prototypical transitive verbs and non-prototypical transitive verbs; the core of transitivity is sentences that contain natural, punctual, significant, and total change of the state of the patient. According to Antonopoulou (cognitive approach of transitivity) transitivity concerns syntax, semantics, and pragmatics: a situation that is dealt with cognitively as transitive is comprised not only of two participants but also of their interaction and of the complete affectedness of one of the two. Transitivity is the superordinate category: the active transitive structure, the passive structure without agent (=anticausative structure), and the passive structure with agent make up the basic categories. The passive structure comprises the marked member of the category and has many characteristics of de-transitivisation in the form in which it is expressed. The focus on the patient is the main parameter of de-transitivisation, whereas the defocalisation of the agent is considered the main parameter of de-transitivisation.

- 'love', 'like', 'want', 'need', 'fear'
 (viii) Verbs of relationship:
 'have', 'possess', 'resemble', 'correspond', 'consist'

The aforementioned classes (semantically highly detailed) could, on the basis of their aktionsart and Levin's approach to verb classes (1993, 2000, 2004), be limited to the following four classes¹⁰:

- | |
|---|
| (i) Resultative verbs with a direct effect on the patient argument (<u>causative event structure</u>):
'kill', 'break', 'bend', 'murder' |
|---|
- (ii) Non-resultative verbs with a direct effect on the argument of the patient (and surface contact) (simple event structure):
'hit', 'kick', 'wipe', 'scratch'
 (iii) Verbs of pursuit/ denotation of relation with the second argument (simple event structure):
'search', 'wait', 'await', 'see'
 (iv) Stative verbs of perception, knowledge, and feeling (simple event structure):
'see', 'hear', 'know', 'understand', 'love', 'fear'

The resultative verbs with a direct effect on the argument of the patient (causative verbs) can be distinguished into smaller semantic classes (cf. Levin 1993; for Modern Greek data see Theophanopoulou-Kontou et al. 1998)¹¹.

- (i) Verbs that mean 'break'. Only the result (and the specific form of the result) is expressed; the manner of the action is not denoted:
σπάω spao 'to break', *ραγίζω rajizo* 'to crack', *συντρίβω sindrivo* 'to crash', *τεμαχίζω temaxizo* 'to cut-up/dismember', *θρυμματίζω thrimatizo* 'to shatter', *κομματιάζω komatiazo* 'to cut-into-pieces', *διασπώ diaspo* 'to split'.
 (ii) Verbs that mean 'bend'. They have the same characteristics as the verbs of the first subclass; the only difference is the ability to be restored to their previous state (*ξεδιπλώνω κάτι ksedhiplono kati* 'to unfold something' ≠ **ξεραγίζω κάτι kserajizo kati* 'to uncrack something'): *λυγίζω lijizo* 'to bend', *τσακίζω tsakizo* 'to crease', *ζαρώνω zaronο* 'to wrinkle', *τσαλακώνω tsalakono* 'to crumple', *διπλώνω dhiplono* 'to fold'.
 (iii) Verbs that indicate 'cooking': *βράζω vrazo* 'to boil', *ζεσταίνω zesteno* 'to heat', *καίω keo* 'to burn', *μαγειρεύω majirevo* 'to cook', *ψήνω psino* 'to roast', *τηγανίζω tighanizo* 'to fry', *καβουρντίζω kavurndizo* 'to sauté', *ξεροψήνω kseropsino* 'to dry roast', *σιγοψήνω sighopsino* 'to slow roast', *σιγοβράζω sighovrazo* 'to simmer'.
 (iv) Verbs that indicate a change-of-state of a specific substance. These verbs have strict selectional restrictions¹²:

¹⁰ Differentiation of transitive verbs has also been supported in the Cognitive (Langacker 1991) and the Systematic-Functional approaches (Halliday 1980, 1985a, b): ergative vs. transitive verbs. Davidse (1991, 1992) and Lemmens (1998) consider as central the distinction between ergative (which correspond to what we call causative transitive verbs) and transitive structures (which correspond to what we call non-causative transitive verbs or accusative verbs). Davidse argues that in the ergative structures with two participants, the participant ('medium') who is affected by the event (the direct object) is presented as the most involved since it is both affected and participates in the process (*Ο Παντελής έλιωσε το τυρί / o Pandelis eliose to tiri / the.NOM Pantelis.NOM melt.ACT.PAST.PERFVE.3SG the.ACC cheese.ACC / 'Pantelis melted the cheese'; Η Άννα άνοιξε την πόρτα / i Ana anikse tin porta / the.NOM Anna.NOM open.ACT.PAST.PERFVE.3SG the.ACC door.ACC / 'Anna opened the door'). The structural centrality of the aforementioned process is reflected by the fact that the participant (the core of the above process) can be isolated without the presence of the agent (*Το τυρί έλιωσε / to tiri eliose / the.NOM cheese.NOM melt.ACT.PAST.PERFVE.3SG / 'The cheese melted', Η πόρτα άνοιξε / i porta anikse / the.NOM door.NOM open.ACT.PAST.PERFVE.3SG / 'the door opened'). The ergative differs from the transitive structure which contains an 'inactive' affected participant. The main characteristic for transitive structures is the agent ('actor'), who acts with volition. The fundamental structural characteristics for the transitive structure are, therefore, agent and process, which can be isolated in transitive sentences without an object (*Η άθληση βοηθάει / i athlisi voithai / the.NOM athletics.NOM help.ACT.PRES.3SG / 'Athletics helps'). The structure expands in cases that also contain the goal towards which the action of the agent is directed. The 'goal' in transitive examples does not participate in the process but is an 'inactive' component that is totally affected by the agent's action.***

¹¹ It is worth noting that Tzartanos (1946) (in relation to voice and diatheses) has already distinguished between two sub-groups of transitive verbs, the simple transitives (affectedness of the object but without change-of-state – *χτυπώ xtipo* 'to hit') and the causatives (change-of-state of the direct object – *σκοτώνω skotono* 'to kill').

¹² The following are examples of selectional restrictions:

σκουριάζω *skuriazō* ‘to rust’, σαπίζω *sapizō* ‘to rot’, μouxλιάζω *mouxliazō* ‘to moulder’, ωριμάζω *orimazō* ‘to ripen’, φουσκώνω *fuskono* ‘to swell’¹³, ελαττώνω *elatonō* ‘to reduce’, μετριάζω *metriazō* ‘to moderate’, μεγαλώνω *meghalonō* ‘to grow’, αυξάνω *afksano* ‘to increase’, συμπυκνώνω *simbikhono* ‘to condense’, συμπιέζω *simbiezō* ‘to compress’, βελτιώνω *veltionō* ‘to improve’, χειροτερεύω *xiroterevō* ‘to worsen’, κονταίνω *kontenō* ‘to shorten’, μικραίνω *mikreno* ‘to make smaller’, μειώνω *miono* ‘to diminish’, συρρικνώνω *sirikhono* ‘to shrink’, διπλασιάζω *dhiplasiazō* ‘to double’, αδυνατίζω *adhinatizō* ‘to weaken’, φαρδαίνω *fardhenō* ‘to widen’, ακριβαίνω *akrivenō* ‘to make more expensive’, διευρύνω *dievrinō* ‘to extend’, σκληραίνω *sklireno* ‘to harden’, μαλακώνω *malakono* ‘to soften’, δυναμώνω *dhinamono* ‘to strengthen’, μεγεθύνω *meghethino* ‘to enlarge’, επιταχύνω *epitaxino* ‘to quicken’, επιβραδύνω *epivradhino* ‘to retard’ / αλλάζω *alazō* ‘to change’, μεταβάλλω *metavalo* ‘to transform’, ανατρέπω *anatrepo* ‘to reverse’ / ξυπνώ *ksipno* ‘to waken’ / εξισορροπώ *eksisoropo* ‘to equalize’, στερεώνω *stereono* ‘to stabilize’, παγιώνω *pajiono* ‘to dazzle’ / θαμπώνω *thambono* ‘to dim’, θολώνω *tholono* ‘to cloud’, λαμπρύνω *lambrino* ‘to brighten’, σκοτεινιάζω *skotiniazō* ‘to darken’, φωτίζω *fotizō* ‘to illuminate’ / κρυώνω *kriono* ‘to chill’, παγώνω *paghono* ‘to freeze’, θερμαίνω *thermeno* ‘to heat’, ξεπαγώνω *ksepaghono* ‘to defrost’ / κλείνω *klino* ‘to close’, βουλώνω *vulono* ‘to seal-up’, ανοίγω *anigho* ‘to open’, χαλαρώνω *xalarono* ‘to loosen’ / γεμίζω *jemizō* ‘to fill’, αδειάζω *adhjazo* ‘to empty’ / λιώνω *liono* ‘to melt’, αποσυνθέτω *aposintheto* ‘to decompose’, διαλύω *dhalio* ‘to dissolve’ / καθαρίζω *katharizō* ‘to clean’, βρωμίζω *vromizō* ‘to dirty’ / ασπρίζω *asprizō* ‘to whiten’, μαυρίζω *mavrizō* ‘to blacken’, κιτρινίζω *kitrinizō* ‘to yellow’, κοκκινίζω *kokkinizō* ‘to redden’, πρασινίζω *prasinizō* ‘to make green’ / αρρωσταίνω *arosteno* ‘to sicken’, γιατρεύω *jatrevo* ‘to cure’ / βουλιάζω *vuliazō* ‘to sink’.

(v) Verbs that indicate movement/change of position:

κιάω *kilao* ‘to roll’, στρέφω *strefo* ‘to turn’, περιστρέφω *peristrefo* ‘to rotate’, μετακινώ *metakino* ‘to move’, παρασύρω *parasiro* ‘to sweep-away’, στριφογυρίζω *strifojirizō* ‘to spin’.

(vi) Verbs of change of psychological state¹⁴. Pesetsky (1995) argues that the subject of these

- (1) a. H μουσική δυνάμωσε τη μουσική
i musiki dhinamose ti musiki
the.NOM music.NOM intensify.ACT.PAST.PERFVE.3SG the.ACC music.ACC
‘The music intensified’
- b. ??Ο θόρυβος δυνάμωσε
??o thorivos dhinamose
the.NOM noise.NOM intensify.ACT.PAST.PERFVE.3SG
‘The noise intensified’
- c. O Γιάννης δυνάμωσε τη μουσική
o Janis dhinamose ti musiki
the.NOM Janis.NOM intensify.ACT.PAST.PERFVE.3SG the.ACC music.ACC
‘Janis turned up the music’
- d. ???Ο Γιάννης δυνάμωσε τη φωνή του
o Janis dhinamose ti foni tu
the.NOM Janis.NOM intensify.ACT.PAST.PERFVE.3SG the.ACC voice.ACC his
‘Janis made his voice louder’

¹³ The oblique lines indicate smaller verb classes showing change-of-state of specific substances.

¹⁴ The psych-verbs are separated into three categories (Belletti & Rizzi 1998):

- (a) ‘admire’: experiencer [Verb theme]
(b) ‘like’: e[[Verb theme[Preposition-experiencer]
[experiencer-dative]
(c) ‘frighten’: e[[Verb theme]experiencer]

The last category of psych-verbs is of great interest. For the theoretical analysis of these verbs as causatives, see Tsimpli (1989), Grimshaw (1991), Croft (1993), and Pesetsky (1995). For Modern Greek, cf. also Kakouriotis & Kitis (1999). These verbs:

(i) Participate in transitivity alternations:

- (1) a. Τα παιδιά αγρίεψαν τα σκυλιά
ta pedhia aghriepsan ta skilia
the.NOM children.NOM aggravate.ACT.PAST.PERFVE.3PL the.ACC dogs.ACC
‘The children aggravated the dogs’
- b. Τα σκυλιά αγρίεψαν (*από τα παιδιά)
ta skilia aghriepsan (*apo ta pedhia)
the.NOM dogs.NOM aggravated.ACT.PAST.PERFVE.3PL (*by the children)
‘The dogs became aggravated’ (*by the children)

(ii) Do not form a passive structure

- (2) a. Ο Κώστας θύμωσε τη φίλη του

verbs always bears the θ -role of cause:

ηρεμώ iremo 'to calm', ησυχάζω isixazo 'to pacify', ανησυχώ anisixo 'to make anxious', αghrieύω aghrievo 'to make fierce', θυμώνω thimono 'to anger', νευριάζω nevriazo 'to annoy', στενοχωρώ stenoxoro 'to worry', πεισμώνω pizmono 'to make stubborn', τρελαίνω treleno 'to madden', μπερδεύω berdhevo 'to confuse', χαροποιώ xaropio 'to gladden', ευχαριστώ efxaristo 'to please', ικανοποιώ ikanopio 'to satisfy', διασκεδάζω dhiaskehazo 'to entertain', ενθουσιάζω enthusiazo 'to make enthusiastic'.

(vii) Aspectual verbs:

αρχίζω arxizo 'to begin', τελειώνω teliono 'to end', συνεχίζω sinexizo 'to continue', σταματώ stamato 'to stop', κρατώ krato 'to hold', προχωρώ proxoro 'to forward', επαναλαμβάνω epanalamvano 'to repeat'.

To summarise, according to the aforementioned theoretical analyses of Hopper & Thompson ('transitivity hypothesis'), Perlmutter & Postal, and Burzio ('unaccusativity hypothesis'), Tsunoda and Levin, we come to the preliminary conclusion that transitivity is not a unified phenomenon: many classes of verbs can be identified according to their transitive or non-transitive behaviour. If we consider as transitive all verbs that take DPs in the default case of the object (accusative for Modern Greek), then we must distinguish (with mainly semantic criteria) the verbs that denote change-of-state (causative verbs – e.g., 'murder', 'destroy', 'open') as core and central (see section 2.1.1 for the corresponding syntactic criteria, as well as 2.1.2 for the correlation between syntactic and semantic structure). In the following section, we will see that causative verbs are also differentiated according to their participation in transitivity alternation (alternating vs. non-alternation causative verbs).

1.3 Transitivity Alternations

Only one class of causative verbs, the alternating causative verbs, participate in transitivity alternations, i.e. they have the possibility for both transitive (causative) (agent/cause + Verb + patient) and intransitive (anticausative) use (patient + Verb + P(repositional)P(hrase)- cause/instrument):

(6)	a.	O	Γιάννης	άνοιξε	το	παράθυρο
		o	Janis	anikse	to	parathiro
		the.NOM	Janis.NOM	open.ACT.PAST.PERFVE.3PL	the.ACC	window.ACC
		'Janis opened the window'				
	b.	To	παράθυρο	άνοιξε		(από μόνο του)
		to	parathiro	anikse		(apo mono tu)

		o	Kostas	thimose	ti	fili	tu
		the.NOM	Kostas.NOM	anger.ACT.PAST.PERFVE.3SG	the.ACC	friend.ACC	his
		'Kostas angered his friend'					
	b.	*H	φίλη	του	Κώστα	θυμώθηκε	από τον Κώστα
		*i	fili	tu	Kosta	thimothike	apo ton Kosta
		the.NOM	friend.NOM	the.GEN	Kostas.GEN	anger.NACT.PAST.PERFVE.3SG	by the Kostas
		'Kostas's friend was angered by Kostas'					

The periphrastic passive structures (*είναι* + *-μένος* / *ine* + *-menos* / 'be + past participle') are grammatical with these verbs.

c.	H	φίλη	του	Κώστα	είναι	θυμωμένη	με τον Κώστα
	i	fili	tu	Kosta	ine	thimomeni	me ton Kosta
	the.NOM	friend.NOM	the.GEN	Kostas.GEN	is.3SG	anger.PART	with the Kostas
	'Kostas's friend is angered with Kostas'						

(iii) Form middle structures:

(3)	a.	Αυτά	τα	ρούχα	στεγνώνουν	εύκολα
		afta	ta	ruxa	steghnonoun	efkola
		these.NOM	the.NOM	clothes.NOM	dry.ACT.PRES.3PL	easily
		'These clothes dry easily'				
	b.	H	Ελπίδα	θυμώνει		εύκολα
		i	Elpidha	thimoni		efkola
		the.NOM	Elpida.NOM	anger.ACT.PRES.3SG		easily
		'Elpida gets angry easily'				
	c.	Αυτό	το	βιβλίο	διαβάζεται	ευχάριστα
		afto	to	vivlio	dhiavazete	efxarista
		this.NOM	the.NOM	book.NOM	read.NACT.PRES.3SG	pleasantly
		'This book reads pleasantly'				

the.NOM window.NOM open.ACT.PAST.PERFVE.3SG (by itself)
 ‘The window opened (by itself)’

Change-of-state, however, is also shown by causative verbs that do not alternate (non-alternating causative verbs), such as the verb ‘cut’ or the verb ‘murder’. In this case, the intransitive structures are ungrammatical¹⁵. These verbs (causatives that do not alternate) can participate in intransitive structures (in Modern Greek bearing non-active morphology) but only with a passive reading; anticausative interpretation (change-of-state without the presence of the agent) for these verbs is not possible.

- (7) a. *To ψωμί κόπηκε (από μόνο του)
 *to psomi kopike (apo mono tu)
 the.NOM bread.NOM cut.NACT.PAST.PERFVE.3SG (by itself)
 ‘*The bread cut by itself’
 b. To ψωμί κόπηκε από τον Γιάννη
 to psomi kopike apo ton Jani
 the.NOM bread.NOM cut.NACT.PAST.PERFVE.3SG by the Janis
 ‘The bread was cut by Janis’

The characteristics of verbs that participate in causative and anticausative structure (alternating causatives) are as follows (Levin & Rappaport Hovav 1995: 89-119, 2005: 117-130):

(a) They denote change-of-state:

e.g., *σπάω spao* ‘to break’,

causative: [x CAUSES [y BECOMES predicate]]

anticausative: BECOME [y BROKEN] (see also section 2.1.2.2)

(b) They denote an event that can be imprinted semantically as evolving with or without external cause (causative-anticausative):

alternating causatives:

- (8) a. Ο Γιάννης άνοιξε την πόρτα
 o Janis anikse tin porta
 the.NOM Janis.NOM open.ACT.PAST.PERFVE.3SG the.ACC door.ACC
 ‘Janis opened the door’ (change-of-state; agent-Verb-patient)
 b. Η πόρτα άνοιξε
 i porta anikse
 the.NOM door.NOM open.ACT.PAST.PERFVE.3SG
 ‘The door opened’ (unspecified for external cause)

cf. non-alternating causatives:

- (9) a. Οι νεόνυμφοι έκοψαν την τούρτα
 i neonimfi ekopsan tin turta
 the.NOM newly-weds.NOM cut.ACT.PAST.PERFVE.3PL the.ACC cake.ACC
 ‘The newly-weds cut the cake’ (change-of state; agent-Verb-patient)
 b. *Η τούρτα έκοψε / κόπηκε από μόνη της
 i turta ekopse / kopike apo moni tis
 the.NOM cake.NOM cut.ACT.PAST.PERFVE.3SG / cut.NACT.PAST.PERFVE.3SG by itself
 ‘*The cake (was) cut by itself’ (obligatory presence of external cause)
 c. Η τούρτα κόπηκε από τους νεόνυμφους
 i turta kopike apo tus neonimfus
 the.NOM cake.NOM cut.NACT.PAST.PERFVE.3SG by the newlywebs
 ‘The cake was cut by the newlywebs’ (passive type)

cf. transitive non-causatives:

- (10) a. Ο Γιάννης έγραψε το κείμενο
 o Janis eghrapse to kimeno
 the.NOM Janis.NOM write.ACT.PAST.PERFVE.3SG the.ACC text.ACC
 ‘Janis wrote the text’ (activity verb)
 b. *Το κείμενο έγραψε / γράφτηκε από μόνο του
 *to kimeno eghrapse / ghraftike apo mono tu

¹⁵ With the same meaning that the transitive type also has (‘to cut the bread’). I do not refer here, in other words, to structures such as *To γάλα έκοψε / To ghala ekopse / the.NOM milk.NOM cut.ACT.PAST.PERFVE.3SG / ‘The milk curdled’*; these structures do not correlate with the corresponding transitives (**Εκοψα το γάλα / *Ekopsa to ghala / cut.ACT.PAST.PERFVE.1SG the.ACC milk.ACC / ‘*I curdled the milk’*).

- the.NOM text.NOM write.ACT.PAST.PERFVE.3SG/ write.NACT.PAST.PERFVE.3SG by itself
 ‘*The text wrote / was written by itself’ (obligatory presence of external cause)
- c. To κείμενο γράφτηκε
 to kimeno ghraftike
 the.NOM text.NOM write.NACT.PAST.PERFVE.3SG
 ‘The text was written’ (passive type)

(c) They allow agents and causes as external arguments in their transitive use:

- (11) a. O Γιάννης άνοιξε την πόρτα
 o Janis anikse tin porta
 the.NOM Janis.NOM open.ACT.PAST.PERFVE.3SG the.ACC door.ACC
 ‘Janis opened the door’
- b. O αέρας άνοιξε την πόρτα
 o aeras anikse tin porta
 the.NOM wind.NOM open.ACT.PAST.PERFVE.3SG the.ACC door.ACC
 ‘The wind opened the door’
- cf. non-alternating causatives:
- c. *O ενθουσιασμός έκοψε την τούρτα
 *o enthousiasmós ekopse tin turla
 the.NOM enthusiasm.NOM cut.ACT.PAST.PERFVE.3SG the.ACC cake.ACC
 ‘*The enthusiasm cut the cake’

(d) They do not allow agents but allow causes in their anticausative use:

- (12) a. H πόρτα άνοιξε *από τον κλειδαρά/ από τον αέρα/ από το έντονο σπρώξιμο
 i porta anikse *apo ton klidhara/ apo ton aera/ apo to endono sproksimo
 the.NOM door.NOM open.ACT.PAST.PERFVE.3SG by the locksmith/ the wind/ the intense pushing
 ‘The door opened by *the locksmith / the wind / the intense pushing’ (anticausative type)
- b. H πόρτα ανοίχτηκε από τον κλειδαρά/ *τον αέρα/ την κλωτσιά του Γιάννη
 i porta anixtike apo ton klidhara/ *ton aera/ tin klotsia tu Jani
 the.NOM door.NOM open.NACT.PAST.PERFVE.3SG by the locksmith/ the wind/ the kick of-the Janis
 ‘The door was opened by the locksmith / *the wind / Janis’s kick’ (passive type)

The differences between anticausative and passive types (important mainly for the non-active anticausatives of Greek, which bear the same morphology as the passives), can be summarised as follows:

(i) In passive types, a by-PP that denotes agent can be present (and is always implied); in the anticausative types, the presence of a *by*-PP of the agent results in an ungrammatical sentence.

- (13) a. H πόρτα ανοίχτηκε από τον κλειδαρά
 i porta anixtike apo ton klidhara
 the.NOM door.NOM open.NACT.PAST.PERFVE.3SG by the locksmith
 ‘The door was opened by the locksmith’ (passive type)
- b. *H πόρτα άνοιξε από τον κλειδαρά¹⁶
 *i porta anikse apo ton klidhara
 the.NOM door.NOM open.ACT.PAST.PERFVE.3SG by the locksmith
 ‘*The door opened by the locksmith’ (anticausative type)

(ii) In contrast with the passives, the anticausatives cannot allow agent-oriented adverbs and allow control with sentences of purpose.

- (14) a. H πόρτα ανοίχτηκε επίτηδες
 i porta anixtike epitidhes
 the.NOM door.NOM open.NACT.PAST.PERFVE.3SG on-purpose
 ‘The door was opened on purpose’ (passive type)
- b. *H πόρτα άνοιξε επίτηδες
 *i porta anikse epitidhes
 the.NOM door.NOM open.ACT.PAST.PERFVE.3SG on-purpose
 ‘*The door opened on purpose’ (anticausative type)

¹⁶ Despoina Chila-Markopoulou (personal communication) notes that structures such as this are beginning to be heard; she explains their acceptance (albeit to a limited degree) due to interpretation of the by-PP as cause and not as agent.

- c. Η πόρτα ανοίχτηκε για να μπουν οι αστυνομικοί στο σπίτι
 i porta anixtike ja na bun i astinomiki sto spiti
 the door.NOM open.NACT.PAST.PERFVE.3SG for to enter.3PL the policemen.NOM into-the house
 ‘The door was opened so for the policemen can enter into the house’ (passive type)
- d. *Η πόρτα άνοιξε (από μόνη της) για να βγει η Μαρία από το σπίτι
 *i porta anikse (apo moni tis) ja na vji i Maria apo to spiti
 the door.NOM open.ACT.PAST.PERFVE.3SG (by itself) for to get-out.3SG the Maria.NOM from the house
 ‘*The door opened (by itself) so for Maria can get out from the house’ (anticausative type)

(iii) Every transitive verb can be passivised, but only one sub-class of transitive verbs (“alternating causatives”) has anticausative types.

- (15) a. Η Μαρία άνοιξε το χρηματοκιβώτιο
 i Maria anikse to xrimatokivotio
 the.NOM Maria.NOM open.ACT.PAST.PERFVE.3SG the.ACC safe.ACC
 ‘Maria opened the safe’ (causative type)
- b. Το χρηματοκιβώτιο ανοίχτηκε από τη Μαρία
 to xrimatokivotio anixtike apo ti Maria
 the.NOM safe.NOM open.NACT.PAST.PERFVE.3SG by the Maria
 ‘The safe was opened by Maria’ (passive type)
- c. Το χρηματοκιβώτιο άνοιξε (από μόνο του)
 to xrimatokivotio anikse (apo mono tu)
 the.NOM safe.NOM open.ACT.PAST.PERFVE.3SG (by itself)
 ‘The safe opened by itself’ (anticausative type)
- (16) a. Η Μαρία έκοψε το ψωμί
 i Maria ekopse to psomi
 the.NOM Maria.NOM cut.ACT.PAST.PERFVE.3SG the.ACC bread.ACC
 ‘Maria cut the bread’ (transitive, non-causative type)
- b. Το ψωμί κόπηκε από τη Μαρία
 to psomi kopike apo ti Maria
 the.NOM bread.NOM cut.NACT.PAST.PERFVE.3SG by the Maria
 ‘The bread was cut by Maria’ (passive type)
- c. *Το ψωμί έκοψε/ κόπηκε από μόνο του
 *to psomi ekopse/ kopike apo mono tu
 the.NOM bread.NOM cut.ACT.PAST.PERFVE.3SG/ cut.NACT.PAST.PERFVE.3SG by itself
 ‘*The bread cut by itself’ (*anticausative type)

(iv) Only anticausative types allow the addition of the PP ‘by itself’ that denotes the absence of an external argument.

- (17) a. *Το χρηματοκιβώτιο ανοίχτηκε από μόνο του
 *to xrimatokivotio anixtike apo mono tu
 the.NOM safe.NOM open.NACT.PAST.PERFVE.3SG by itself
 ‘*The safe was opened by itself’ (passive type)
- b. Το χρηματοκιβώτιο άνοιξε από μόνο του
 to xrimatokivotio anikse apo mono tu
 the.NOM safe.NOM open.ACT.PAST.PERFVE.3SG by itself
 ‘The safe opened by itself’ (anticausative type)

(v) The anticausatives, but not the passives, can be accompanied by a DP-‘dative’ (in Modern Greek: in the genitive morphological case) which has, inter alia, the interpretation of the unintentional causer¹⁷.

- (18) Του Γιάννη του τελείωσε το μελάνι
 tu Jani tu teliose to melani
 the.GEN Janis.GEN he.GEN.WEAK finish.ACT.PAST.PERFVE.3SG the.NOM ink.NOM
 ‘Janis’s ink finished up (to him)’ (anticausative + DP-‘dative’)

(vi) In certain languages, there is also a morphological distinction between the passive and the anticausative:

- (19) Russian (Kulikov 1999a):
 Passive: periphrastic

¹⁷ Alexiadou, A. 2006c: “On (anti-)causative alternations”. Handout, EALing 2006, <<http://ealing.cognition.ens.fr/ealing2006/handouts/alexiadou2.pdf>>

- a. Palka byla slomana Petrom
 wood.NOM is.PAST break.PAST.PART Peter.ERG
 ‘The wood was broken by Peter’
- Anticausative: suffix *-sja*¹⁸
- b. Palka slomala’s’ (*Petrom)
 wood.NOM break.ANTIC.PAST Peter.ERG
 ‘The wood broke’

The morphological derivation of the transitivity alternations is not expressed uniformly across languages, but neither is it expressed uniformly across all of the verbs of the same language. Languages vary with respect to the structure that constitutes the basis of morphological derivation.

Haspelmath (1993) presents (on the basis of a typological research of transitivity alternations in twenty languages) three cross-linguistic patterns of morphological derivation, with the criterion of the presence of additional morphology in the derived type:

(a) Causative pattern

- Turkish i. *düş-mek* ‘anticausative - fall’
 fall-INF
 ii. *düş-ür-mek* ‘causative - throw’
 fall-CAUS-INF¹⁹

(b) Anticausative pattern

- Russian i. *otkryt’sja* ‘anticausative open’
 otkryt-ANTICAUS
 ii. *otkryt* ‘causative open’

(c) Without any direction in the morphological derivation

- With the same type (“labile”)

- Modern Greek i. *σπάω spao* ‘anticausative break’
 ii. *σπάω spao* ‘causative break’

¹⁸ The suffix *-sja* with the imperfective past tense only forms an anticausative structure (obligatory absence of the agent). With the perfective past tense, it can also have a passive interpretation (the presence of the agent is possible).

¹⁹ In Turkish, the causative morpheme can be connected to verb stems of different categories:

(a) Causative morpheme + intransitive verb:

- (1) Ayşe bardag-ı yer-e düş-ür-dü
 Ayşe.NOM glass-ACC floor-DAT fall-CAUS-PAST
 ‘Ayşe threw the glass on the floor’

(b) Causative morpheme + unergative verb (indirect cause):

- (2) Ayşe Zeynep’e acıklı bir hikaye anlat-arak onu ağla-t-tı
 Ayşe.NOM Zeynep.DAT sad a story telling-GER she cry.CAUS.PAST
 ‘Ayşe (in) telling a sad story to Zeynep made her cry’

(c) Causative morpheme + transitive verb (the patient in the dative case functions as a second agent and strongly participates in the action):

- (3) Zeynep berber-e saç-ı-nı kes-tir-di
 Zeynep.NOM barber-DAT hair-POSS-ACC cut-CAUS-PAST
 ‘Zeynep got the barber to cut her hair’ (Göksel 1993)

(d) Causative morpheme + causative verb:

- (4) a. Mehmet Hasan’ı öl-dür-dü
 Mehmet.NOM Hasan.ACC die-CAUS-PAST
 ‘Mehmet killed Hasan’
- b. Polis Mehmed-e Hasan’ı öl-dür-t-tü
 police.NOM Mehmet-DAT Hasan.ACC die-CAUS-CAUS-PAST
 ‘The police made Mehmet kill Hasan’

The first causative morpheme is considered as being added at the lexical domain, whereas the second causative morpheme is added at the syntactic level.

- With the addition of a morpheme to both verbs ('equipollent')
 - Japanese
 - i. *tok-eru* 'anticausative melt'
 - ii. *toku-asu* 'causative melt'
- With substitution ('suppletive')
 - Finnish
 - i. *kuolla* 'anticausative die'
 - ii. *tappaa* 'causative kill'²⁰

To summarise, in the last two sections, I attempted to present arguments for the differentiation of transitive verbs into classes on which our research will be based. I endeavoured to show that transitive verbs do not comprise a unified class and that causative verbs (verbs denoting change-of-state) are the prototypical transitive verbs. The causative verbs are, moreover, divided into alternating causative verbs (verbs with transitive and intransitive (with the patient as subject) use) and non-alternating causative verbs. According to the above, a diachronic study of transitivity must take into consideration verb classes and in relation to these must search for systemisation in the changes. In the following section, I will try to present not only the problems that such a diachronic study encounters but also the likely positive aspects that arise from a diachronic study of transitivity.

1.4 The Study of Transitivity and the Diachronic Approach

1.4.1 The problems and the contribution of diachronic study

The problems that face a diachronic study of transitivity are no different from those that every diachronic study faces. The following main difficulties are indicated (Roberts & Roussou 2003; Moser 2005; Faarlund 2006; Lightfoot 2006a, b):

(a) A main methodological problem of diachronic linguistic studies is the limited data of what has survived or not survived by chance. The data that we have at our disposal are not, in all instances, spontaneous oral speech; they mainly represent written speech, and often they are not close to oral speech. Special care is needed so that the data that are finally selected for the analysis of the grammar of every period are as close as possible to the everyday speech of that period. Movements such as Atticism, which supported a return to an earlier form of the language, may cause additional difficulties for any attempt to examine everyday language²¹.

(b) The analyses that adhere to the perspective of Generative Grammar are based on the grammaticality and ungrammaticality of structures, i.e. on the linguistic knowledge of the native speaker, on linguistic competence. Consequently, it is obvious that the methodology of diachronic research is necessarily differentiated from synchronic research since the conclusions drawn for the grammar of earlier historical periods are derived solely from observations in relation to the data of linguistic performance. More specifically, in diachronic studies, we are obviously unable to carry out experiments in order to enlarge the evidence that we will be using in the analysis, to minimise the possible errors that are contained in the data or to check the accuracy of our hypotheses. On the other

²⁰ We can distinguish two further possible instances:

(a) morphological marking of a different kind on causatives and anticausatives (Winnebago);
 (b) use of the same marker (ambiguous marker) for both the causatives and the anticausatives (Korean).
 →Winnebago (Guerssel et al. 1985):
 The causative type bears a prefix (*gi-*), whereas the anticausative type bears the morpheme *-re-*.

(1) a. Kununga naanksik-ra gi-shishshannan
 Kununga the-wood gi-broke(causative)
 'Kununga broke the wood'
 b. Naanksik-ra shiish-re-ena
 the-wood broke(anticausative)-re
 'The wood broke'

→Korean

Some Korean unaccusative verbs derive corresponding causative types with additional causative morphology (class I), whereas some causative verbs derive corresponding unaccusative types with additional anticausative morphology (class II). The morphemes *-(h)i-* and the allomorphs *-li-*, *-si-*, and *-ki-* are ambiguous between the causative and the anticausative (Volpe 2005a, b).

²¹ On the other hand, some negative remarks (for example, by the Atticist Phrynichus) about structures that were innovative for the period contribute to the study of language of the specific period and its differences from that of earlier periods.

hand, when we study living languages, we acquire information from experiments regarding the acceptability of sentences, usually by eliciting judgements concerning the acceptability of sentences.

The difficulties concerning the choice of data can, however, be reduced if we propose two hypotheses (Adams 1987; Santorini 1989):

(i) the past is as the present and the general principles that derive from the study of living languages in the present, likewise, hold good for the earlier stages of language; and

(ii) with regard to simple sentences, if a specific type of sentence does not appear in a representative corpus of data, then it is not grammatically possible in the language. This hypothesis is, of course, problematic since the lack of the presence of a structure in a corpus of data can always be the result of non-grammatical contextual factors or even coincidence. Despite that, for structurally simple sentences, it is extremely likely that the absence of the structure from a large corpus of data also means its absence from the structure of the language.

The positive aspects of diachronic study that make linguists try particularly hard to deal with the aforementioned difficulties and to find the most suitable solutions to the problems already referred to, are, therefore, evident:

(a) Diachronic research can offer us the appropriate examples in relation to a grammatical phenomenon from many historical periods and make possible the connection between a specific grammatical phenomenon and others that remain the same or change in different historical periods. The field of analysis is widening increasingly. Characteristic grammatical phenomena that are difficult to explain and interpret in only one historical period are found in different historical periods of one language or many languages.

(b) The diachronic remarks give us the ability to strengthen the analysis of grammatical systems and to locate the role of universal principles and the differences in the parameters of language. Comparison between different grammatical systems and conclusions for language changes provide evidence for the areas of language that change, for the kinds and causes of change, and also for the characteristics of language that remain unchanged and constitute stable characteristics of human linguistic ability. The data concerning language change are of particular importance for approaches such as Generative Grammar since, as Kiparsky (1982a) first pointed out, they provide a gateway into the form of linguistic ability.

Diachronic data contain types of information that are absent from synchronic data and make a vital contribution to the examination of the general principles of language. Through an understanding of the process of change, we can also understand the principles underlying the organisation of language. Given that the characteristics of a language in a specific historical period are the result of the interaction between the general principles of language and specific language changes, knowledge of diachronic processes is important in the exploration of the role that diachronic and general linguistic factors play, and, therefore, for the suitable formation of linguistic theory.

1.4.2 Sources

The historical periods of the Greek language that are examined in this study are: Homeric, Classical, Hellenistic-Roman, Medieval, and Modern Greek (the latter only concerning the changes in relation to Medieval Greek). The reference to indicative examples from the Post-Byzantine/Early Modern Greek period (16th-17th and 18th centuries) aims at the strengthening of conclusions with regard to the tendencies that have been tracked. Further problems concerned with the setting of the boundaries of the historical periods and sub-periods are outside the goals of this monograph and do not concern me here.

Special emphasis is given to Classical Greek. The study of Classical Greek is extensive for two reasons: (a) the system of transitivity (syntactic behaviour as well as the markers of transitivity) of Classical Greek has not been examined systematically to date and (b) we observe that Classical Greek (which constitutes the starting point of the present study on verb transitivity) differs considerably from Modern Greek with regard to verb transitivity.

The general aim of this work and the domain of grammar that is analysed define the first restriction regarding the sources that are used for diachronic examination: the present study seeks to make known the similarities and differences in possible structures (transitive and intransitive structures) in the different periods of the history of the Greek language. Consequently, the comparative examination of every historical period in relation to the preceding period (as far as innovative structures or the loss of structures is concerned) constitutes the principal part of this study. The analysis begins with the Classical Greek period and uses Homeric Greek as a basis only for comparison and individual remarks on specific verbs.

The data on which the analysis was based are derived from traditional Greek historical grammars, studies, and dictionaries (I refer here mainly to Jannaris 1897/1968, Psaltis 1913/1974, Mayser

1934/1970, Schwyzer & Debrunner 1950/2002, Chantraine 1953, Humbert & Kourmoulis 1957/2002, Browning 1983/1991 – Liddell, Scott, Jones & McKenzie 1940, Kriaras 1969/2009). In addition, systematic indexing was done of representative texts of the Classical Greek, Hellenistic, Medieval and Early Modern Greek periods. The data are divided into four large historical periods, which for the present analysis correspond to four distinctive grammatical systems: Classical Greek, Hellenistic-Roman Koine Greek, Medieval Greek, and Modern Greek. This present study in its entirety does not aim at an exhaustive judgement of data but is a study that is more oriented towards modern theory of language change and the testing of highly specific structures and aspects of the linguistic system in different historical periods. In any case, regarding the specific topic of transitivity, it can be observed that there has been, in the past, a total lack of examination of diachronic data and, consequently, this study constitutes the first attempt in this direction.

(a) Classical Greek (5th – 3rd century BC)

An attempt is made to locate evidence of everyday speech (in contradistinction to learned elements) in specific types of texts. The choice of texts is based on the histories of the Greek language of Babinotis (1985/2002), Horrocks (1997), Christidis (2001) and the analyses mainly by Dover (1987), Chila-Markopoulou (1990-91, 1999), Kopidakis (1999), Manolissou (2000, 2005), and Moser (1988, 2005). For example, the medical treatments of Hippocrates, written in a non-literary style, contain many elements of everyday speech (Manolissou 2005: 7-10). Additional limitations concerning the choice of data from Classical Greek comprise the avoidance of the effect of metre, archaisms, and particular register features; the emphasis is, nevertheless, on Attic Greek, which constitutes the dominant form of Classical Greek and the main source, through the Hellenistic and the Medieval periods, of Modern Greek (Lopez-Eire 1997; Horrocks 1997: 33-37). Beyond the grammars and the special studies on Classical Greek (Schwyzer 1939, 1959; Goodwin 1889/1965), texts representative of every text type were systematically indexed: Herodotus, Thucydides, Plato, Xenophon, Aristophanes, Demosthenes, Lysias, Euripides, Sophocles, Hippocrates, and Aristotle.

(b) Hellenistic-Roman period (3rd century BC – 4th century AD)

The New Testament, the non-literary papyri, and authors of written Koine such as Polybius and Epictetus comprise the most important sources of the colloquial language²²: the subsequent development of the language shows that all of the particularities of the language of the New Testament are precursors of the changes that emerged in the following centuries; the non-literary papyri are invaluable since they contain elements of the colloquial language. There are, moreover, ample inscriptions in Hellenistic Greek, such as many informal letters and documents written on papyri (Moser 2005: 22-24). Apart from the evidence that was brought to notice from the studies of Mayser (1934), Mandilaras (1973), and Gignac (1976/1981), from the histories of the Greek language by Jannaris (1987), Horrocks (1997), and Christidis (2001), and from the monographs of Humbert (1930) and Janse (1993), collections of papyri, the Translation of the Septuagint, the New Testament, and the Acts and Lives of the Saints were also systematically indexed²³.

(c) Medieval Greek

Systematic indexing of verbs of the semantic classes that we are concerned with was done in representative texts of this period (according to remarks made in the histories of Greek and by researchers of this period)²⁴:

(a) early and middle Medieval period (5th-11th century): the vernacular texts are few and the collection of data is particularly difficult. The texts that were chosen are: chronicles (Malalas: 6th century,

²² Despite the high degree of uniformity in written Hellenistic Koine, the differences between the authors are worth noting; the language of Polybius, for example, is more artificial than the language of Epictetus, which is much nearer to the everyday spoken language.

²³ For this purpose, electronic data were utilised: (a) TLG: *Thesaurus Linguae Graecae*, version E (CD-Rom) 2000 (and online version: <<http://www.tlg.uci.edu/>>), University of California, Irvine, (b) PHI #7 *Greek Documentary Texts (CD-Rom) (1991-1996)*, Packard Humanities Institute, Los Altos, California.

²⁴ I follow here the argumentation and the practice of David Holton and Geoffrey Horrocks: "Grammar of Medieval Greek Project", <<http://www.mml.cam.ac.uk/greek/grammarofmedievalgreek/aims>>: "... These dates [between 1100 and 1700] are chosen because texts in the vernacular become available in significant quantity only in the 12th century, and, although there is no obvious point at which to locate the end of the "medieval" period, by the 18th century important cultural and political changes are afoot. The period 1100-1700 constitutes a coherent whole in terms of the development of the Greek vernacular. ... In certain cases, early medieval texts (5th-11th century) will be taken into account, mainly to illuminate points of historical evolution or the earliest dating of phenomena".

Paschalion: 7th century, Georgios Monachos: 9th century, Theophanes the Confessor: 9th century), religious texts (John Moschos: 6th century, Romanos Melodos), and Protobulgarian inscriptions (Beševliev 1963).

(b) late Medieval period (Beck 1971/1988; Vitti 1971/1978; Politis 1978; Browning 1983/1991; Tonnet 1993; Horrocks 1997; Adrados 1999; Kopidakis 1999; Eideneier 1999; Manolessou 2005): Digenis Akritas (the Grottaferrata and Escorial versions), the Ptochoprodromic poems (12th century), the poems of Spaneas, Michail Glykas, and Spanos, the Chronicle of Moreas (13th century), the metrical Byzantine romances of the 13th-15th centuries, the chronicles of the later period (Schreiner 1975), the Cypriot chronicle of Leontios Machairas, and the translation of the Assizes of Jerusalem and Cyprus; post-Byzantine period (Dimaras 1948; Politis 1978; Mastrodimitris 2006): anthologies of historical, philosophical, fictional texts, love poetry (Katalogia/ Erotopaignia, 15th century), Erofilii, The Sacrifice of Abraham, Erotokritos (16th-17th centuries), The Chronicle of Rhodes of Georgilas, demotic songs from the collections of I. Legrand (1880-1913, 1885) and N. Politis, and formal documents (Miklosich & Müller 1865).

Useful data were also found in secondary sources, such as grammars, linguistic commentaries on specific texts and authors and studies of certain grammatical phenomena (Sofianos (16th century); Portius 1638; Psaltes 1913/1974; Browning 1983/1991).

(d) Modern Greek

Research on transitivity in Modern Greek is based on a personal corpus of data (written texts from the Internet: newspaper articles, taped sessions of the Greek Parliament, blogs), observations (examples of spontaneous oral speech from natural dialogues and from the radio and television), judgements of native speakers, personal linguistic intuition, and data from Modern Greek grammars and studies (articles and monographs).

1.5 Terminology Issues

The terms that were and are used in relation to the various types of transitive and intransitive verbs and structures depend on the theoretical perspective to which the analyses adhere.

The widest variation with regard to the use of terms concerns the verbs that can be used in transitive and intransitive structures, often without any change in morphology, and with the meaning of change-of-state.

(20) a.	H	καρέκλα	έσπασε		
	i	karekla	espase		
	the.NOM	chair.NOM	break.ACT.PAST.PERFVE.3SG		
	'The chair broke'				
b.	O	Κώστας	έσπασε	την	καρέκλα
	o	Kostas	espase	tin	karekla
	the.NOM	Kostas.NOM	break.ACT.PAST.PERFVE.3SG	the.ACC	chair.ACC
	'Kostas broke the chair'				

Levin (1993) and Levin & Rappaport Hovav (1995) talk of causative alternation²⁵. The terms causative and anticausative²⁶ are used for the transitive and the intransitive members of the alternation respectively (e.g., Antonopoulou 1987), and the term middle intransitive only for the intransitive use (Theophanopoulou-Kontou et al. 1998). Clairis & Babinot (1999: 283-290) distinguish between two

²⁵ Particularly frequent, especially in earlier times, is the term *ergative* or *ergative pairs* in literature. This is the term used by Halliday (1964) and Lyons (1968): 'the term for the syntactic relation that exists between (1) *the stone moved* and (2) *John moved the stone* is "ergative". The subject of the intransitive verb becomes the object of the corresponding transitive verb, and a new ergative subject is introduced as the "agent" (or "cause") of the action referred to' (Lyons 1968: 352).

There have been serious objections raised, however, about the use of that term because it was initially linked to the typological categorisation of languages in nominative-accusative vs. ergative-absolutive. Dixon (1987) expresses his opposition to extending the meaning of the term 'ergative', believing that it could cause confusion.

²⁶ For the history of (anti)causative terms, see Haspelmath (1987: 8ff).

The term anticausative was taken from Nedjalkov & Sil'nickij (1969) and was used mainly by Russian linguists and those with knowledge of the typological group of Leningrad/St. Petersburg.

The term anticausative was also used by: Siewierska (1984), Haspelmath (1987, 1990), Comrie (1989), and Cennamo (1993). Other terms used for the anticausative are: decausative (Geniušienė 1987), deagentive (Lehmann 1992b), spontaneous (Kemmer 1993; Shibatani 1985), and verbal derivation (Lehmann 1972a).

