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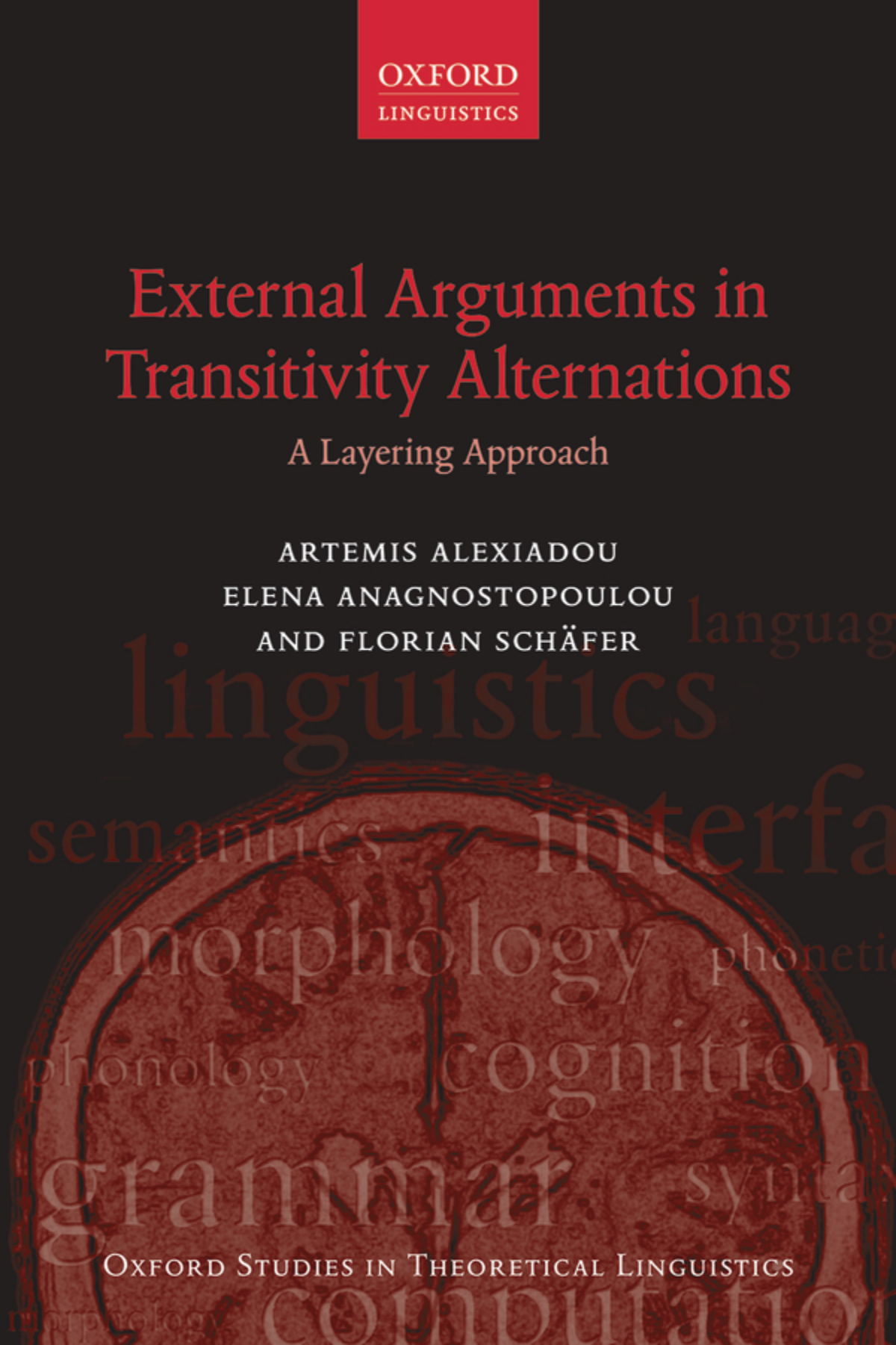
External Arguments in Transitivity Alternations

A Layering Approach

ARTEMIS ALEXIADOU
ELENA ANAGNOSTOPOULOU
AND FLORIAN SCHÄFER



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Contents

General preface

The theoretical focus of this series is on the interfaces between subcomponents of the human grammatical system and the closely related area of the interfaces between the different subdisciplines of linguistics. The notion of "interface" has become central in grammatical theory (for instance, in Chomsky's Minimalist Program) and in linguistic practice: work on the interfaces between syntax and semantics, syntax and morphology, phonology and phonetics, etc. has led to a deeper understanding of particular linguistic phenomena and of the architecture of the linguistic component of the mind/brain.

The series covers interfaces between core components of grammar, including syntax/morphology, syntax/semantics, syntax/phonology, syntax/pragmatics, morphology/phonology, phonology/phonetics, phonetics/speech processing, semantics/pragmatics, and intonation/discourse structure, as well as issues in the way that the systems of grammar involving these interface areas are acquired and deployed in use (including language acquisition, language dysfunction, and language processing). It demonstrates, we hope, that proper understandings of particular linguistic phenomena, languages, language groups, or inter-language variations all require reference to interfaces.

The series is open to work by linguists of all theoretical persuasions and schools of thought. A main requirement is that authors should write so as to be understood by colleagues in related subfields of linguistics and by scholars in cognate disciplines.

At the heart of the interface between lexical semantics and syntax lies the alternation between causative and anti-causative versions of the same verb. The simple alternations between *the door opened* and *she opened the door*, raises fundamental questions about the nature of the relationship between verbs and their external arguments. This monograph argues that causatives and anti-causatives do not differ in the complexity of the event they denote, but rather (morpho)-syntactically in the presence of a Voice head. The book then develops a detailed typology of Voice heads that are used to explain subtle cross-linguistic differences in morphology, syntax, and semantics of various types of causative, anti-causative, and passive constructions.

David Adger
Hagit Borer

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This book is dedicated to our families.

Artemis Alexiadou
Elena Anagnostopoulou
Florian Schäfer

Stuttgart/Rethymno
February 2014

Abbreviations

ABL	Ablative Case
ACC	Accusative Case
Act	Active
Adj	Adjective
AOR	aorist
AP	Adjective Phrase
APF	Adjectival Passive Formation
AspP	Aspect Phrase
CAUS	Causer
CI	Conceptual–Intentional
cl	clitic
COL	Change of Location
COS	Change of State
DAT	Dative Case
DM	Distributed Morphology
DO	Direct Object
DP	Determiner Phrase
ECM	Exceptional Case Marking
EPP	Extended Projection Principle
FUT	Future
GEN	Genitive Case
IA	intransitivizing affix
IMP	imperfective
INSTR	Instrumental Case
INTR	Intransitive
IO	Indirect Object
LF	Logical Form
NAct	Non-Active
NDV	Naturally Disjoint Verb
Neg	Negation
NOM	Nominative Case

nP	little noun Phrase
NP	Noun Phrase
NRV	Naturally Reflexive Verb
PartP	Participle Phrase
Pass	Passive
PF	Phonological Form
PIE	Proto-Indo European
Pl	Plural
PP	Prepositional Phrase
RAoAC	Reflexivization analysis of anticausatives
REFL	Reflexive
RootP	Root Phrase
SC	Small Clause
Sg	Singular
SIA	Strong Implicit Argument
Spec	Specifier
SUBJ	Subjunctive
TP	Tense Phrase
TRANS	Transitive
UEAC	Underspecified External Argument Condition
UG	Universal Grammar
UTAH	Universal Theta Assignment Hypothesis
VI	Vocabulary Insertion
VoiceP	Voice Phrase
vP	little verb Phrase
VP	Verb Phrase
WIA	Weak Implicit Argument

1

Introduction

1.1 What this book is about

This book is an exploration of the syntax of external arguments in transitivity alternations from a cross-linguistic perspective with particular focus on the causative/anticausative alternation, passives, and the formation of adjectival participles. Our discussion centers on three languages, namely, English, German, and Greek, but a comparison is also made, when necessary, to other languages, e.g. Romance and Semitic languages among others.

In recent years, there is a growing consensus that verbal meaning can be syntactically represented as consisting of various functional layers. Structural decomposition of verbal meaning takes different forms in recent work (Hale and Keyser 1993, 2002; Borer 2005; Marantz 1997, 2005, 2007; Ramchand 2008; Lohndal 2014 among others). The present book pursues this line of research and develops a theory of transitivity alternations, according to which verbal behavior is analyzable on the basis of structural combinations that take place in the syntax. It recognizes that these combinations involve a core lexical meaning (labeled *root*, following the terminology of Distributed Morphology, see our discussion in 1.4) and certain functional layers that are responsible for (i) the introduction of the external argument (VoiceP, following Kratzer 1996 and subsequent work, see section 1.3), and (ii) the introduction of event implications (vP, following Marantz 1997 and subsequent work, see 1.4). A central aim of the book is to develop tools, on the basis of which the structures of verbs and participles are decomposed into the aforementioned layers. A significant such tool is the distribution of PPs related to external arguments (agent, causer, instrument, causing event) as well as the distribution of other modifiers (*by itself*, result, manner, and agent-oriented adverbials).

The central claim of the book is that the causative alternation is a Voice alternation, i.e. causative variants of alternating verbs contain an extra layer of structure that introduces an external argument, namely VoiceP. Anticausatives in contrast, lack this layer. Importantly, however, causative and anticausative variants do not differ in terms of event implications in languages such as English; they both contain a causative event (extending our previous work, see Alexiadou, Anagnostopoulou,

and Schäfer (AAS) 2006a, b, and Schäfer 2008b). To explain the fact that in languages other than English, e.g. Greek and German, we find marked anticausatives, i.e. anticausatives marked with morphology also employed in other verbal alternations, such as passives, and the formation of semantically reflexive verbs, we propose that anticausatives in these languages contain an additional Voice layer, which is, however, semantically inert. Building on Schäfer (2008b), we label this layer *expletive Voice*. This then raises the question of the relationship between anticausative, passive, and reflexive formation, issues that we will tackle in Chapters 3 and 4. As the presence of the layer introducing the external argument is taken in Kratzer (1996) to distinguish between adjectival and verbal passives, in Chapter 5 we offer a detailed discussion of the morpho-syntactic layers present within adjectival passives, building on work by Anagnostopoulou (2003b, 2013, 2014), and Alexiadou, Gehrke, and Schäfer (2014).

In the next sections, we offer some background discussion on the causative alternation, the concept of external arguments, and the theory of Voice that we adopt here, as well as our assumptions concerning the building blocks of verbal meaning in general. In section 1.5, we present the outline of this monograph.

1.2 The causative alternation

The causative alternation relates pairs of transitive and intransitive verbs, where the transitive variant is interpreted roughly as 'cause to $\text{verb}_{\text{intransitive}}$' (see Levin 1993 and Schäfer 2009a for a recent overview of the literature on the causative alternation). For example, the verb *open* in (1) has both such a transitive and an intransitive variant:

(1) a. Mary opened the door. *causative variant*
b. The door opened. *anticausative variant*

The intransitive variant denotes an event in which the theme (in our example *the door*) undergoes a change-of-state (*become open*). The transitive variant denotes the causation of this change-of-state by the subject DP (*Mary*). Since the object of the causative variant is the grammatical subject of the anticausative variant, anticausative verbs are prototypical instances of unaccusative verbs.

In this work, we use the terms *causative alternation* and *causative–anticausative variants* to refer to pairs such as in (1). The transitive verb is called (lexical) causative in opposition to periphrastic/syntactic causatives like English *John made/caused the door go open* which involve two syntactically independent verbs, each projecting its own thematic domain. The term *anticausative* is meant to refer to any intransitive use of a verb that also has a lexical causative use. That is, our terms (lexical) causative verb and anticausative verb simply make reference to the transitive/intransitive variant of the alternation and do not reflect any theoretical assumptions about the derivational or morphological relationship between these two variants. If a member

of the alternation is marked by special morphology, we use the term *marked (anti-) causative*.[1]

Two issues have been controversially discussed in the literature. The first one concerns the similarities and differences between anticausatives and passives, and the second one concerns the derivational relationship, if any, between the transitive and intransitive variant in the causative alternation. With respect to the first issue, it is well known that anticausatives differ from passives in a number of respects, which we will review in detail in Chapter 2. These differences led to the proposal that passives contain an implicit external argument, which anticausatives lack. In our contribution to this discussion, we will show that the issue is more complex than has been assumed thus far: while anticausatives indeed lack an implicit external argument, they do contain a cause component similar to passives (of lexical causative verbs).

With respect to the second issue, it is generally agreed upon that an account of the alternation that relies on the existence of two independent lexical entries for the two variants is unsatisfactory, as it leads to an explosion of the lexicon and leaves unexplained why, in most cases, the two variants share the same morphological stem. Thus, a lot of the discussion on the causative alternation has concentrated on the question of the relationship between the two variants. There exist three general lines of approaches, although the implementations offered differ considerably within each group: i) causativization approaches (which derive the causative from the anticausative variant, e.g. Dowty 1979; Pesetsky 1995), ii) decausativization approaches (which derive the anticausative from the causative variant, e.g. Grimshaw 1990; Chierchia 1989/2004; Levin and Rappaport Hovav 1995; Reinhart 2000; Kallulli 2007; Koontz-Garboden 2009), and iii) common-base approaches (which derive both variants separately from a common base, which typically reflects the core eventuality involved; see Piñón 2001; Doron 2003; Embick 2004a, b; AAS 2006a, b; Schäfer 2008b; Pylkkänen 2008; see also Borer 2005, Ramchand 2008, and Lohndal 2014 for related ideas).

Proponents of (i) or (ii) have argued that there are semantic and (morpho-) syntactic differences between causatives and anticausatives that are best captured by adopting a derivational relationship between the two variants. Most researchers take as a key semantic difference between the two variants the absence of a cause component from anticausatives (at some level of representation), which causative

[1] In the literature, one finds that several different labels have been used to refer to this alternation. For instance, Borer (1991) uses the term *inchoative–causative* pairs. Haspelmath et al. (to appear) prefer the notion *causal–noncausal* verb pairs. Their reasoning is based on the observation that the causal verb need not be *coded* as a causative, and the noncausal verb neither needs to be morphologically marked nor does it have to be semantically inchoative (i.e. it need not be a change-of-state verb containing a 'become' meaning component e.g. *to hang on the wall* vs. *to hang something on the wall*). Other authors such as Huddleston and Pullum (2002) use the label *ergative alternation* as the intransitive variant of the alternation patterns with ergative (i.e. unaccusative) predicates.

variants have.[2] From this perspective, causative predicates are semantically more complex than anticausatives. In this work, we will partly refute this claim. In Chapter 2, we will explicitly argue that causatives and anticausatives are equally semantically complex in terms of event structure.

The fact that across languages causative and anticausative predicates are often morphologically related, see e.g. Nedjalkov and Silnitsky (1973), Haspelmath (1993), Hale and Keyser (1998), and Nichols et al. (2004), has been taken, among other things, as a crucial piece of evidence in favor of both causativization and decausativization approaches. For instance, the view that the transitive variant is derived from the anticausative by addition of a causative layer is supported by the additional morphology found on the causative variant of the alternation in some languages; see the example in (2), taken from Haspelmath (1993):

(2) Georgian: duɣ-s 'cook' (anticausative)
a-duɣ-ebs 'cook' (causative)

On the other hand, the view that the intransitive variant is derived from the transitive one is reinforced by the observation that it is the anticausative variant that is morphologically complex in many languages, as illustrated with the Russian example in (3), from Haspelmath (1993). Often, the morphology found with anticausatives is shared by reflexive, and sometimes also passive predicates. In Chapters 3 and 4, we will consider in detail this second type of morphological marking.

(3) Russian: katat'-sja 'roll' (anticausative)
katat' 'roll' (causative)

Common-base approaches, on the other hand, propose that neither variant is derived from the other by a lexical rule or a syntactic transformation. Instead, both causatives and anticausatives are derived from a common base. From the perspective of work in Distributed Morphology, this boils down in proposing that the transitive and the intransitive variant are derived from the same root (in the sense of Pesetsky 1995 and Marantz 1997, see also Borer 2005 and Lohndal 2014). See our discussion in section 1.4. The bulk of the discussion in Chapter 2 will be devoted to providing evidence in favor of the common-base approach to the causative alternation, building on AAS (2006a, b) and Schäfer (2008b).

[2] Note here that Levin and Rappaport Hovav (1995) argue that a cause component is present in the lexical semantic representation of an anticausative predicate, but the external cause argument is not projected in the syntax as it is lexicallly bound in the mapping from the lexical semantic representation to argument structure.

1.3 Severing the external argument from its verb

1.3.1 Kratzer (1996)

Most theories of argument structure assume that there is a fundamental asymmetry between the external argument and the internal argument of verbs. For instance, Williams (1981) marks this asymmetry by underlying the external argument in a verb's lexical entry, while for Grimshaw (1990) the external argument is the most prominent argument with respect to both the thematic and the aspectual hierarchy. Marantz (1984) proposes that the external argument is not an argument of the verb alone but of the verb+object combination, on the basis of the observation that there are many instances where a particular kind of internal argument in combination with the verb triggers a particular kind of interpretation of the external argument, while the reverse is not found, e.g. *throw a party*, *throw a fit*, *take a bus to New York*, *take a nap*, etc. Kratzer (1996), building on these observations, argues that external arguments are introduced by a functional head, namely Voice. Further support for the view that external arguments are not true arguments of the verb comes, according to Kratzer, from examples such as the ones in (4):[3]

(4) a. The climbers are secured with a rope.
b. The climbers are being secured with a rope.

Sentence (4a), an adjectival passive, is compatible with the climbers having secured themselves. On the other hand, (4b), a verbal passive, requires the climbers to be secured by somebody else; see Baker, Johnson, and Roberts (1989) for discussion and references. She views the contrast in (4) with respect to this so-called disjoint reference effect as evidence that adjectival passives are deverbal constructions where the verb's external argument is entirely missing. From Kratzer's perspective,[4] this property of adjectival passives straightforwardly follows from the hypothesis that the external argument is introduced by Voice. When external arguments seem to entirely disappear in a verbal alternation, this is so because they were never there to begin with, i.e. we are at a stage of the syntactic derivation, where they are not yet present. The functional structure that introduces them hasn't projected. A similar point is made by Kratzer on the basis of the behavior of nominalizations in English.

Kratzer (1996) argues that all external arguments are introduced by the neo-Davidsonian method in the syntax. A predicate such as *feed* is a two-place predicate.

[3] The argument we will make in Chapter 2 that causer subjects can become accessible if the verbal phrase combines with a result phrase as in (i), also supports the idea that external arguments are not introduced by the verb:

(i) The wind rolled the ball ??(across the goal line).

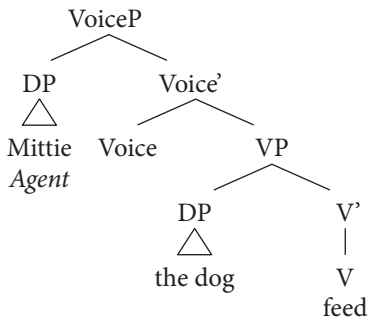
[4] We will come back to the properties and the structure of adjectival passives focusing on the question of Voice in Chapter 5, where we will revise Kratzer's conclusion reported here.

The inner argument is the theme argument denoting who is being fed. The higher argument is Davidson's event argument. Since the agent argument is not an argument of the verb at all, it has to be added via secondary predication.

(5) Mittie fed the dog.

Building on Johnson (1991) and Bowers (1993), she proposes that external arguments are base generated in Spec,VoiceP. On the other hand, direct DP objects are arguments of V and hence are generated in Spec,VP.[5] (6) provides the syntactic tree for (5), (7) provides the semantic derivation.

(6)



(7) VoiceP: semantic interpretation
1. feed* = $\lambda x_e \lambda e_s$ [feed (x) (e)]
2. the dog* = the dog
3. (the dog feed)* = λe_s [feed (the dog) (e)]
   From (1), (2) by Functional Application
4. Agent* = $\lambda x_e \lambda e_s$ [Agent (x) (e)]
5. (Agent (the dog feed))* =
   $\lambda x_e \lambda e_s$ [Agent (x) (e) & feed (the dog) (e)]
   From (3), (4) via Event Identification
6. Mittie* = Mittie
7. ((Agent (the dog feed)) Mittie)* =
   λe_s [Agent (Mittie) (e) & feed (the dog) (e)]
   From (5), (6) by Functional Application

According to Kratzer, the composition principles applied are Functional Application, and the Principle of Event Identification. Event Identification is one of several admissible conjunction operations and makes it possible to put together various conditions for the event described by a sentence. In step 5 of the computation, Event

[5] But see Borer (2005) and Lohndal (2014) for discussion of the view that all the verb's arguments must be severed from the lexical core.

Identification achieves the following, where f and g represent the function it takes as an input, and h is the output function:

(8)

f	g	=>	h
<e <s,t>>	<s,t>		<e, <s,t>>
$\lambda x_e \lambda e_s$[Agent(x)(e)]	λe_s[feed(the dog)(e)]		$\lambda x_e \lambda e_s$[Agent(x)(e) & feed(the dog)(e)]

Furthermore, there is a connection between the *Aktionsart* of a verb and the thematic role of its external argument. Kratzer argues that there are two distinct active Voice heads in English: one adding the agent argument to an action verb, and one adding the holder argument to a stative verb.

1.3.2 Agent vs. causer external arguments

An important distinction in the context of the causative alternation that will be discussed in Chapter 2 in detail is that between agent and causer external arguments. Part of its importance relates to an observation reviewed in Chapter 2, namely that only predicates allowing both agent and causers as external arguments can enter the causative alternation. This is exemplified in (9) and (10), from Levin and Rappaport Hovav (1995). The non-alternating verb *cut* selects an agent or an instrument as a subject but disallows a causer, while the alternating verb *break* is compatible with an agent, an instrument, as well as a causer subject. This led to the hypothesis that transitive verbs that cannot form anticausatives restrict their subjects to *agents* or *agents* and *instruments* and disallow *causers*; see Levin and Rappaport Hovav (1995) and Reinhart (2000):

(9) a. The baker / the knife cut the bread.
b. *The lightning cut the clothesline.
c. *The bread cut.

(10) a. The vandals / the rocks / the storm broke the window.
b. The window broke.

We take it that a defining property of causers is that they are inherently eventive (Alexiadou and Schäfer 2006; Schäfer 2012a), and, therefore, can modify (or stand in for) the causative verbal sub-event. Levin and Rappaport Hovav (1995: 84) express a similar idea when they say that causers "correspond to the entire causing subevent." In the same vein, Pylkkänen (2008: 93) proposes that a causer "does not name a participant of the causing event, but rather names the causing event itself."

As we will see in Chapter 2, causers can appear in anticausatives, when introduced by special prepositions, e.g. *from* in English. Solstad (2009) and Schäfer (2012a) argue that the semantic contribution of causers is identical, irrespectively of whether these surface as DPs or PPs as in (11):

(11) a. The storm broke the window.
b. The window broke from the storm.

According to the semantic representation of causers proposed by Solstad, these phrases merely introduce an event, which gets identified with an event already introduced by the predicate.[6] Causer phrases, then, are not integrated into the structure via a thematic predicate, as is the case with agent phrases.

Although DP and PP causers make the same semantic contribution, this semantic uniformity is not paralleled in the syntax. In (11a), the causer is a full DP external argument, whereas it is just an adverbial PP modifier in (11b). Solstad proposes to analyze causer PPs as modifiers licensed by vP, similarly to what we argue for in Chapter 2; see also our discussion in the next section. This raises now a question concerning the head introducing or licensing the causer argument in (11a). As we will argue in Chapter 2, causer DPs are introduced in the same kind of projection as agent DPs, namely VoiceP; see AAS (2006a, b), Alexiadou and Schäfer (2006), and Schäfer (2012a). This proposal, among others, enables us to correctly express the conditions under which change-of-state verbs are alternating or not. We therefore introduce a further refinement on the types of active Voice heads attested. In addition to $\text{Voice}_{\text{AGENT}}$ and $\text{Voice}_{\text{HOLDER}}$ mentioned earlier, UG provides a $\text{Voice}_{\text{CAUSE}}$ head.[7] While $\text{Voice}_{\text{AGENT}}$ introduces an argument and

[6] Things are more complex, though, as the causer event can be presupposed even if the causing event of the predicate does not take place, as in (i). We must leave the semantic details for future research. Note furthermore, that we do not assume that entities and events exhaust the set of possible external arguments, as external arguments can also denote facts or propositions.

(i) The storm did not destroy the city.

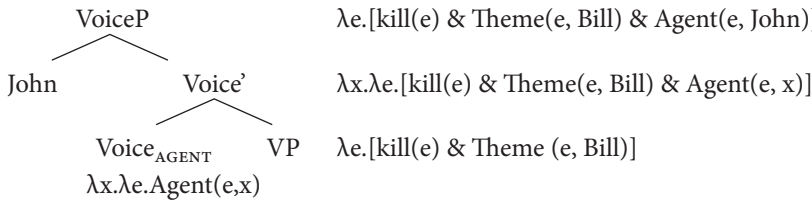
[7] An alternative would be to argue that causers are always introduced as PP adjuncts (Pesetsky 1995). Kratzer (1996) also briefly discusses this possibility. She states that if we encounter a predicate that has an external argument that does not correspond to one of the canonical active Voice heads, i.e. agent or holder, then we must posit a non-active Voice head, and build an external argument from a PP via preposition incorporation into Voice, which thereby becomes active. Preposition incorporation creates then a syntactically derived external argument. Such an analysis is envisaged for experiencer predicates such as *worry*, which are ambiguous between agentive and causative readings, and it could be extended to lexical causatives, see Hasegawa (2001); cf. also Fujita (1996) for arguments that causer subjects occupy a lower position with such predicates. A PP input structure for causers is attractive in view of the fact that in several languages causers must be introduced as adjuncts, see the Japanese data in (i) from Yamaguchi (1998), and see the discussion of Jacaltec in Chapter 2:

(i) a. kabin ga koware-ta
vase.NOM break.Past
'The vase broke.'
b. John ga/*jisin ga kabin o kowasi-ta
John.NOM/earthquake.NOM vase.ACC break.Past
'John/*the wind broke the vase.'
c. kabin ga jisin de koware.ta
vase.NOM earthquake.INSTR break.Past
'The vase broke because of the earthquake.'

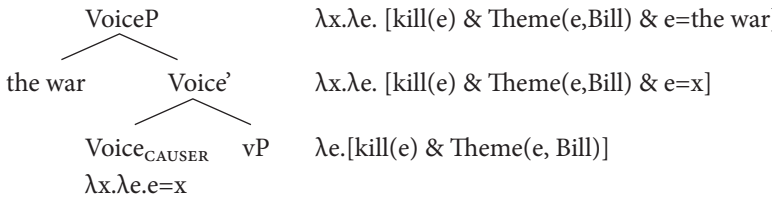
However, such a proposal fails to express certain differences between DP causers and PP causers that will be discussed in the main text.

assigns a theta-role to it (cf. 12), $\text{Voice}_{\text{CAUSE}}$ introduces an argument and relates it to the causing event instead of assigning it a role itself, as in (13), based on Pylkkänen (2002: 165). Following Pylkkänen, we describe the Voice head introducing causers as denoting an identity relation between events rather than a thematic relation (but see fn. 6):

(12) a. John killed Bill.
b. $\text{Voice}_{\text{AGENT}}$: THE EXTERNAL ARGUMENTS CARRIES THE AGENT ROLE
c.



(13) a. The war killed Bill.
b. $\text{Voice}_{\text{Causer}}$: THE EXTERNAL ARGUMENT NAMES A CAUSING EVENT
c.



The rationale behind introducing $\text{Voice}_{\text{CAUSE}}$ is as follows. In Chapter 2, we will argue that PP causers (e.g. *from*-phrases in English, *durch*-phrases in German, *apo*- and *me*-phrases in Greek) are adjoined to the vP where they get interpreted as modifiers of the causing event. Although DP causers also modify or name the causing event, the proposal that they are, nevertheless, introduced in Spec,VoiceP rather than in Spec,vP captures the fact that DP and PP causers do not have an identical distribution. We will show that PP causers, but not DP causers, are possible with pure unaccusative predicates, i.e. predicates that have a strong tendency to lack transitive variants, like *blossom* and *wilt*. Moreover, certain causer PPs can only express indirect or facilitating causation, e.g. *me*-PPs in Greek, as will be discussed in Chapter 2, while causer DPs express direct causation; this, we suggest, is a general property of external arguments introduced by Voice (see Martin and Schäfer, to appear, a for some further discussion).

1.3.3 Towards a typology of Voice

In Kratzer's system, Voice heads come in an active and a passive version, a position we will refine in Chapter 4. From this perspective, the six Voice heads described so far (active $\text{Voice}_{\text{AGENT}}$, $\text{Voice}_{\text{CAUSE}}$, $\text{Voice}_{\text{HOLDER}}$, and their passive counterparts) are part

of the inventory of Voice heads made available by UG. Variation between individual languages may reside in the functional vocabulary chosen, see Borer (1984). Some languages have both types of active eventive Voice heads, $\text{Voice}_{\text{AGENT}}$, and $\text{Voice}_{\text{CAUSE}}$, others only have active $\text{Voice}_{\text{AGENT}}$, e.g. Jacaltec (see Chapter 2, and fn. 7 of this chapter).

However, since we find variation with respect to the presence vs. absence of the passive variant of these heads, we will modify this typology in Chapter 4. As discussed there, some languages have passive variants of both $\text{Voice}_{\text{AGENT}}$, $\text{Voice}_{\text{CAUSE}}$, e.g. English where causers may surface as canonical *by*-phrases, others only have the passive variant of $\text{Voice}_{\text{AGENT}}$, e.g. Greek where animate agents but not inanimate causers/causing events are allowed to surface as *apo*-phrases in passives. The variation and restrictions found will lead us to propose that English and German passives are built on the basis of a structure that contains the verb's external argument, while this is not the case with Greek passives.

Since we take the causative alternation to be a Voice alternation, our core proposal is that unmarked anticausatives, as well as pure unaccusatives (e.g. English *wilt*), in all languages under discussion, simply lack VoiceP, the functional layer that introduces the external argument.[8]

Proceeding to the question of how to characterize Voice morphology in marked anticausatives, in Chapter 2 we will argue that marked anticausatives fail all diagnostics for agentivity and, more generally, for any implicit external arguments, and thus cannot be analyzed as passives (pace Kallulli 2009). Moreover, we will argue in Chapter 3 that although marked anticausatives are syncretic with semantically reflexive verbs, they are not interpreted reflexively. In Chapter 4, we will then deal with the questions we raised in the previous chapters: What is the role of this morphology and where is it located in the syntactic structure? And why is it syncretic with the morphology found in canonical passives (Greek), and/or the morphology found in semantically reflexive verbs (Germanic, Romance, Greek)? We will argue that this morphology realizes expletive Voice: in the case of Greek, it spells out a Voice head in the absence of a specifier; in the case of German/Romance, the reflexive realizes the specifier of expletive Voice.

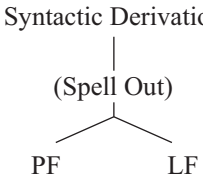
1.4 Building verbal meaning

In the previous section, we introduced the theory of external arguments that we will argue for in this monograph. In this section, we turn to the other building blocks of verbal meaning that will figure prominently in our discussion.

[8] Since we are concentrating here on change-of-state verbs, we will generally remain agnostic as to which structure corresponds to verbs of change of location, e.g. *arrive* or *disappear*, but see Alexiadou (2010), Alexiadou and Schäfer (2011), and Alexiadou and Anagnostopoulou (2013) for some relevant discussion.

This book is couched within the theoretical framework of Distributed Morphology. The architecture of grammar adopted in Distributed Morphology (DM) is as in (14). The syntax consists of a set of rules that generate syntactic structures which are then subject to further operations in the course of the derivation to the PF and LF interface levels:

(14) **The Grammar**



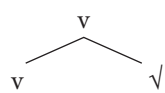
In this framework, every word is formed by syntactic operations (Merge, Move). The principles of morphology are, therefore, to a large extent the principles of syntax. In the default case, the morphological structure at PF simply is the syntactic structure. In more complex cases, which are in no way exceptional, some further operations apply at PF to modify the syntactic structure.

The units that are subject to the syntactic operations Move and Merge are the so-called *morphemes*. On the widely held view according to which syntactic structures are hierarchical tree structures, the morphemes are the terminals of such trees. There are two types of morphemes: the Roots, items like √CAT or √SIT, make up the members of the "open class," and the so-called abstract morphemes, such as [pl] or [past], are the (contents of the) familiar *functional categories* of syntactic theory. Roots have no grammatical category, and they can never appear 'bare'; they must always be categorized by virtue of being in a local relationship with one of the category-defining functional heads:

(15) **CATEGORIZATION ASSUMPTION:**
Roots cannot appear without being *categorized*; roots are categorized by combining with category-defining functional heads, e.g. v, n. Embick (2010)

Thus building verbs involves combining a root with a categorizing head v, as in (16):

(16)



Research in DM has adopted a cyclic phase-based syntax model, as put forth in Chomsky (2000, 2001). The result of this is that what counts as a phase domain in syntax will correspond to a local domain in word formation. As Embick (2010) and Bobaljik (2012) argue, such a local domain predicts aspects of the phonology and interpretation of words; see also Arad (2005) and Marantz (2001, 2013a). This concept of locality will be

of importance in our discussion in Chapter 5. For example, in (16), v, the categorizing head, constitutes a cyclic domain that fixes the interpretation and the phonology of the root. Another important property that is associated with v, and one that will be important for our discussion in Chapter 2, is that it comes with event implications.

A further important feature of Distributed Morphology is the idea that the syntax puts together abstract feature bundles, which are only provided with phonological exponence postsyntactically. During this process, a series of so-called *Vocabulary Items* relating phonological information with morpho-syntactic features compete for insertion into terminal nodes of the morpho-syntactic structure. The term 'Late Insertion' refers precisely to the fact that insertion of phonological exponents follows all syntactic operations. It is currently a matter of debate whether late insertion applies to functional morphemes only or to both roots and functional morphemes. In this work, we will not take a stand with respect to this issue; however, we will assume that functional heads such as v and Voice qualify as phase heads and thus trigger Spell Out of their complements (we assume that v qualifies as a phase head in the absence of Voice). We will further assume, following Embick (2010), that contextual allomorphy crosses the boundary of a phase head. Consider, for example, (17), where past tense triggers allomorphy of the root (and vice versa, the root serves as a context for the choice of an irregular past tense morpheme). Crucially, both v and Voice intervene between the root and the Tense head:

(17) √TEACH + **0** + Past = taught (irregular /t/ or null allomorph of Past)

In this case, T serves as the context for root allomorphy. Following Marantz (2013a), each root adjoins to the heads that type it as a lexical category, i.e. v and Voice, prior to any stage of the derivation in which either the category head or the root might be phonologically interpreted. As a result of head movement, a verbal root ends up in the same Spell Out domain as Voice and little v, and is not spelled out in the complement domain of little v (only the arguments of the root are). Therefore, the Voice/v complex does not interfere with Tense serving as the context for Vocabulary Insertion (VI) at the root (and vice versa), as long as they are phonologically null, not disrupting the linear adjacency between T and the root: all three heads (root-v-Voice) are spelled out at the same time.

From the perspective of Distributed Morphology, there is no lexicon in the sense of e.g. the Government and Binding Theory, and, as a result, there can be no projection of lexical information to the syntactic component. Similarly to e.g. Borer (2005), and Ramchand (2008), the root does not introduce the external argument; this is introduced in Voice, as discussed previously. Unlike these frameworks, however, Voice is not seen as an event/aspectual related position. Things become less clear when we turn to the layer introducing the internal argument. Earlier work in Distributed Morphology assumed that this is introduced by the root itself; see also Harley (2014). However, the role of roots in introducing the internal argument has been criticized;