

## On the morphosyntax of (anti-)causative verbs

Artemis Alexiadou<sup>1</sup>

Universität Stuttgart

artemis@ifla.uni-stuttgart.de

### 1. Setting the stage

As is well known, in many languages change of state verbs participate in the so called (anti-)causative alternation; this is illustrated in (1) with an English example. Such verbs permit both transitive/causative and intransitive/anticausative construals:

- (1) a. John broke the window *Causative*  
b. The window broke *Anticausative*<sup>2</sup>

The paradigm in (1) has been the subject of much discussion in linguistic theory, as its existence raises a number of intriguing questions. In this paper, I address three of them.

The first question is whether we are actually dealing with a causative formation or a detransitivization process. Both views have been proposed in the literature: proponents of the causative formation approach claim that the intransitive form is basic (e.g. Dowty 1979; Pesetsky 1995 and others), while proponents of the detransitivization process claim that it is the transitive that is basic, and intransitive one is derived (e.g. Levin & Rappaport Hovav 1995, Chierchia 1989, Reinhart 2000 and others). Recently, a third proposal has been advanced, namely that the two alternates do not stand in a derivational relationship (Alexiadou & al. 2006, Doron 2003).

The second question concerns the morphological form of the alternation, namely whether morphological marking plays a role in determining the directionality of the derivation. Derivational approaches typically assume an iconic reasoning; the derived form is expected to be morphologically marked. This means that if the intransitive form is the basic form, as the causativization approach claims, then the transitive form is expected to be morphologically marked (2a). On the other hand, if the transitive form is the basic form, as is claimed by the detransitivization approach, the intransitive form is expected to be marked, bearing morphology related to valency reduction (2b):

- (2) a. Intransitive Form: V *basic*  
Transitive Form:  $\underline{V-X}$   
b. Intransitive Form:  $\underline{V-X}$   
Transitive Form: V *basic*

As Haspelmath (1993) and much subsequent work discusses in detail, crosslinguistically both patterns are found. This is illustrated in (3) and (4):

- (3) Marking on the transitive:  
a. Georgian: *duy-s* 'cook (intr) (Haspelmath, op.cit.)  
*a-duy-eb-s* 'cook (tr)'  
b. Khalka Mongolian: *ongoj-x* 'open (intr)' (Piñon, 2001)

---

<sup>1</sup> I would like to thank an anonymous reviewer and the editors of this volume for their comments and suggestions, which greatly improved this paper. Special thanks to Elena Anagnostopoulou, Florian Schäfer and the audience at the Workshop on syntax, lexical semantics and event structure in Jerusalem in July 2006 for their questions and input.

<sup>2</sup> Here the term 'anticausative' is not used as in Haspelmath (1993), where it refers to an intransitive form derived from a transitive one; it is rather meant in a broader sense as 'change of state without an external argument'.

*ongoj-lg-ox*                      ‘open (tr)’

- (4) Marking on the intransitive:
- |             |                   |                |                      |
|-------------|-------------------|----------------|----------------------|
| a. Russian: | <i>katat’-sja</i> | ‘roll (intr)’  | (Haspelmath 1993:91) |
|             | <i>katat’</i>     | ‘roll (tr)’    |                      |
| b. Polish:  | <i>zlamać-się</i> | ‘break (intr)’ | (Piñon 2001)         |
|             | <i>zlamać</i>     | ‘break (tr)’   |                      |

The fact that both patterns exist raises questions as to the necessity of establishing a directionality relationship between the two variants (see Doron 2003, Alexiadou & al. for discussion).

The third question concerns cross-linguistic variation in terms of the verbs that can undergo the alternation. Note here that the variation goes in two directions. On the one hand, we find verbs that lack causative counterparts in English but do have such counterparts in a number of other languages (5a); on the other hand, we find verbs that lack anticausative counterparts in English (although their 'lexical semantics' would predict the existence of an anticausative variant) but do alternate in other languages (5b). The table in (5) illustrates this for a couple of verbs:

(5)	<b>Causative</b>	<b>Anticausative</b>
a. <i>arrive/appear</i>	+ Japanese, + Salish, <u>-English</u>	+ in all languages
b. <i>kill/cut</i>	+ in all languages	+Greek, + Hindi, <u>-English</u>

In the literature, we find two possible answers to this question. On some views, there is always a transitive alternate; it is possible that a verb got frozen in one form in the lexicon of a given language (this is claimed to be the behavior of *arrive* by Reinhart 2002 building on Chierchia 1989). On other views, however, variation relates to the classification of verb meanings (Haspelmath 1993, Levin & Rappaport Hovav 1995, Schäfer 2007 and others).<sup>3</sup> Productive patterns might be related to the availability of more than one classification cross-linguistically, i.e. seemingly corresponding verbs do not mean the same thing in all languages.

Alexiadou & al. (2006) propose that verbal meanings represented by a root/core component can be classified as follows:

- (6)
- a. √agentive (murder, assassinate)
  - b. √internally caused (blossom, wilt)
  - c. √externally caused (destroy, kill)
  - d. √cause unspecified (break, open)

These classes differ in terms of the way in which the events they describe are conceptualized. With *agentive roots* the bringing about of the event requires the presence of an Agent; with *internally caused* roots the cause of the change of state event is linked to properties inherent

---

<sup>3</sup> Note that the classification in Alexiadou & al. departs from Levin & Rappaport Hovav's (1995) and also Reinhart's (2002) classification of alternating verbs as verbs containing [+c] in their lexical entry. *Break* and *open* are classified as externally caused by Levin & Rappaport Hovav. As Smith (1970) points out, verbs like *break* and *open* describe eventualities that are under the control of some external cause that brings such an eventuality about. The contrast between *kill* and *break* is that with the latter group the change could also come about independently, without the volitional intervention of an agent. This is one of the reasons why Alexiadou & al. (2006) suggested that one could posit a third category, namely cause unspecified roots, for all these alternating verbs. See also Harley & Noyer (2000) for a similar classification.

to the argument undergoing change; with *externally caused* roots the change of state is brought about by an external cause; finally, with *cause unspecified* roots there is no specification of internal vs. external cause.

According to this classification, agentive roots are the ones that are not expected to alternate, as they demand the presence of an Agent. For all other roots, in principle an alternation is possible. We need to explain why, however, we find the picture in (5).

In this paper, I address all the questions enumerated above. Crucially, I will account for the variation at the level of morphology and at the level of productivity on the basis of a non-derivational approach to the anticausative alternation, and I will correlate differences in productivity with differences in the way languages morphologically mark the alternation. Two main groups of languages will be identified:<sup>4</sup>

- Group A: languages like English, where it seems that the type of root involved determine its behavior in alternations. Crucially, only cause unspecified roots alternate. It will be shown that English is classified this way, on the basis of lack of morphological marking linked with processes of de-transitivization.
- Group B: languages like Hindi and Greek, where this does not seem to be the case. There, all (but agentive) roots can participate in alternations, but the root classification correlates in part with morphological behavior (see also Volpe 2005, 2007). Crucially, externally caused roots alternate but surface with non-active morphology in the intransitive variant.

The behavior of both groups will be shown to be related to properties of their (in)transitive syntax. The main claim of the paper is that the morphology we see in the alternation should be taken seriously and is the device that helps us explain why anticausative and causative formation is freer in some languages than others. First, it will be shown that a correlation exists between the lack of morphological marking and the behaviour in terms of the range of roots which participate in the alternation. The correlation can be described as follows: if a language lacks special morphological marking for de-transitivization processes, this language will allow fewer roots to enter the anti-causative alternation. Second, it will be shown that certain languages are more productive than others in forming causatives, as they have a smaller root inventory, but have a number of functional morphemes to express causation/becoming. For instance, while English uses two different words for the meanings *arrive* and *bring*, Japanese uses one root having the meaning of *arrive*, which can combine with a different head to generate the meaning of *bring*.

With respect to the morphological variation, following recent literature, I assume that anticausatives do not have a unified structure; two structures are available, one with VoiceP and one without (see e.g. Doron 2003, Alexiadou, Anagnostopoulou & Schäfer 2006 and others). In the next section I briefly summarize these approaches. Languages vary with respect to whether or not they can use both structures for the formation of anticausatives. The idea is that if a language can use the structure with VoiceP for anticausative formation, in this language more roots are expected to participate in the anticausative alternation.

With respect to the issue of productivity I propose that (7) holds (see Demirdache 2005):

---

<sup>4</sup> We will see that a third group also exists: languages like the ones belonging to the Salish family, which differ from both English and Hindi/Greek. This language family makes also use of root modification, which is not related to the derivations under discussion.

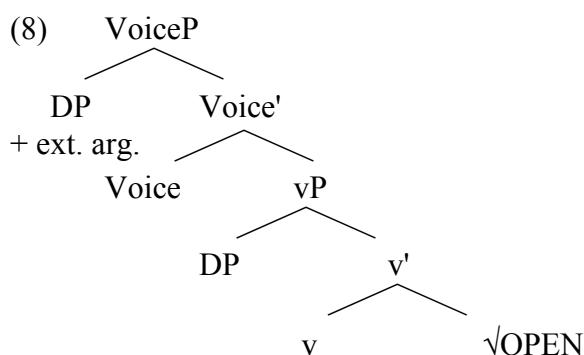
- (7) There is no difference in the way languages classify verbal meaning. The problem is partially one of distribution between functional and lexical vocabulary; i.e. how distinct pieces in particular structures are morphologically realised.

The paper is structured as follows: section 2 discusses the two structures that are available for anticausatives across languages, and presents in detail the morphological evidence for this distinction. It also pays attention to the regularities we can identify in this distribution. Section 3 is concerned with English de-transitivization processes, while section 4 deals with the issue of productivity. Section 5 concludes the discussion.

## 2. Structures and morphological patterns of (anti-)causatives

### 2.1 The structures

Alexiadou & al. (2006) argued in detail that the structure of all change of state verbs should be as in (8). In (8), Voice introduces the external argument (Kratzer 1996) and bears features relating to agentivity, cf. Ritter & Rosen (this volume) and Landau (this volume).



Note that the semantics of CAUS are not encoded in *v*. *v* is an eventive head; it introduces an event and takes a stative root as its complement; the meaning of causative *open* is built up on the basis of the pieces in (8): a cause brings about a change of state (Alexiadou & al. 2006; see also Marantz 2005, Ramchand 2006a).<sup>5</sup>

As Alexiadou & Schäfer (2006) discuss in detail, Voice simply denotes a relation (R) between a DP and event as expressed in (8'a). There are two thematic notions, agent and causer, that are introduced in Voice. Two different Voice relations exist, R(Caus) and R(Agent) with the semantics depicted in (8'b) and (8'c); while in (8'b) the DP simply names the causing event that brings about the change of state, in (8'c) it is the case that certain properties of the DP are crucial for the coming about of the event:

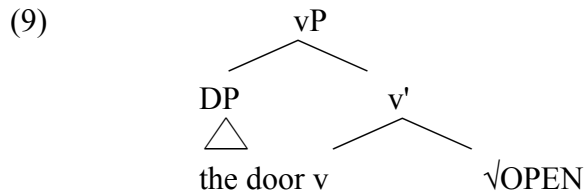
- (8') a. Voice:  $\lambda P.\lambda x.\lambda e. (R(x,e) \ \& \ P(e))$   
 b. R (Caus): the DP names the causing event (following Pytkäinen 2002)  
 c. R (Agent): (a property of) the DP grounds the coming about of the event

<sup>5</sup> Evidence for the decomposition comes from the licensing of PPs (*from/by*). Agent by-PPs target VoiceP (Agent); causer from-PPs modify vP (event; Pustejovsky 1995), Alexiadou & al. (2006) for extensive discussion. The structure slightly departs from the one proposed in Alexiadou & al. which contains Caus instead of *v*.

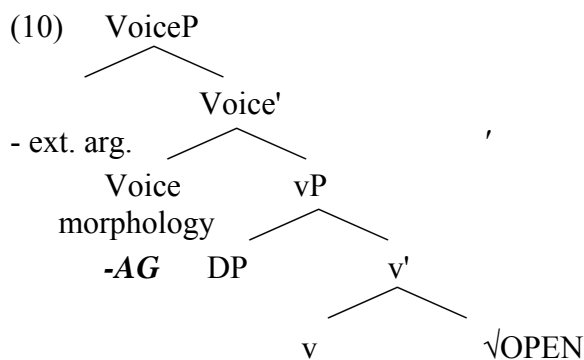
(i) a. The window was broken by John b. The window broke from the wind

A language might select only one of the two possible relations in the active or passive, hence the two relations can in principle be independent from one another.<sup>6</sup>

As far as anticausative/intransitive structures are concerned, in principle two structures are available. The first is the anticausative structure in (9) which differs from (8) in that it lacks Voice.



The second is the anticausative structure in (10). This is a structure related to the absence of an external argument, where the external thematic role is not that of agent, but rather that of a causer.



The claim is that to the extent that we find morphologically marked anticausatives these appear in the structure in (10), see Schäfer (2007). (10) could be seen as being close but not identical to a passive structure. As known, in many languages passive morphology is used for anticausative formation.

The main intuition concerning the syntax-morphology connection is as follows: marked morphology related to anticausativization is the morphological instantiation of the lack of external argument, see Embick (1998). So marked morphology will not be present in (9), as no projection related to external arguments is present, but it will be present in a version of (8), namely (10), where such projection is present. English has been argued to only have (9), while other languages can have both (9) and (10).

While this is straightforward that (9) is an anticausative structure, (10) at first sight seems similar to a passive construction. In fact in almost all languages under discussion, the morphology we see associated with (10) is the same as passive. Thus in order for both (9) and (10) to both function as anticausative structures they have to be alike in all relevant respects. Importantly, (10) functions as an anticausative structure, and not a passive one, if it can be shown that it fails all diagnostics for agentivity (as passives lack an external argument but have agentive features). That is (10) will be considered as an anticausative structure if it has the same general properties as the structure in (9). This has been established independently for the languages to be discussed here and I will review this discussion.

<sup>6</sup> Evidence comes from the morpho-syntactic independence of agent and causers; we will see instances of this below, see Doron (2003) and Ritter & Rosen (this volume).

The common property shared by passives and anticausatives is the lack of an external argument, the main difference relates to the presence of agentive features only in the former. (10) is thus a case in point where we can see a separation between the semantics of Voice, claimed to introduce the Agent argument, and the exponence of Voice. For the morphological realization of Voice, the non-projection of the external argument is sufficient to give passive form. In this sense the morphological realization does not coincide with the expression of agentivity.

(11) illustrates the morphological realisation of Voice<sup>o</sup>, where anticausative Voice<sup>o</sup> is taken to be realised by non-active (passive, reflexive) morphology; in (11) a verb will be specified as bearing non-active Voice in the context where it appears without an external argument; (11) is supposed to be understood as a morphological spell-out condition that regulates the morphological shape of the individual verbs in syntactic contexts where no external argument is projected:

(11) V -> V-VOC[NonAct]/ \_\_\_ No external DP argument from Embick (1998)

Note that the morphology is not necessarily passive. As is well known, it can also be reflexive. Importantly, however, in languages which use reflexives instead of passive morphology for anticausative formation, we again have a reflexive form in the absence of reflexive meaning (see Schäfer for a recent discussion).

In the next section we see that the morphological patterns found in a number of unrelated languages provide evidence for the existence of both (9) and (10) within the same language.

## 2.2 The morphological patterns

In this section, I discuss data from several languages which point to the same conclusion.

### 2.2.1 Greek<sup>7</sup>

Greek has two morphologically distinct types of anticausatives (see Alexiadou & Anagnostopoulou 2004, to appear, Embick 2004, Theophanopoulou-Kontou 2000, Zombolou 2004, Lavidas 2007 among others). There are verbs, mainly de-adjectival ones, which form anticausatives with active morphology, and verbs which form anticausatives by using non-active morphology. In the former class the transitive and intransitive counterpart are morphologically non-distinct:

- (12) *Causative*  
 a. O Janis katharise ton spiti  
 the John-nom cleaned-**Act** the house  
 John cleaned the house
- Anticausative*  
 b. To spiti katharise me to skupisma  
 the house cleaned-**Act** with the sweeping

<sup>7</sup> As is well known, non-active morphology is used in a number of environments in Greek, e.g. to also form reflexives, middles and body-action verbs, cf. Tsimpli (1989):

(i) i Maria htenizete *Inherent Reflexives*  
 the Mary-nom combs-Nact  
 'Mary combs herself'

Embick (1998) argued that non-active morphology does not reflexivize verbs in Greek, but appears on verbs that are syntactically reflexive by other means, i.e. by virtue of being inherently reflexive.

*Passive*

- c. To spiti katharistike      *apo to Jani*  
the house cleaned-**Nact** from the John

In the latter, the passive and the anticausative are non-distinct:

(13) *Causative*

- a. o Janis      katestrepe      to hirografo  
the                  John-nom destroyed-**Act** the manuscript-acc  
'John destroyed the manuscript'

*Anticausative*

- b. to hirografo      katastrafike      *me ti dinati fotia*  
the manuscript-nom destroyed-**Nact** with the strong fire

*Passive*

- c. to hirografo katastrafike      *apo to Jani*  
the manuscript destroyed-**Nact** from the John

Verbs forming anticausatives on the basis of **active** fall into two groups:<sup>8</sup>

1) Those that take non-active morphology in the passive (14a), admitting only an agent by-phrase or an instrument but not a causer (14b).

- (14) a. Ta mallia mu stegnothikan *apo tin komotria / me to pistolaki*  
The hair my dried-**Nact** from the hairdresser / with the hair-dryer  
'My hair was dried by the hairdresser / with the hair dryer'  
b. ?\*Ta ruxa stegnothikan *apo ton ilio / me ton ilio*  
The clothes dried-**Nact** from the sun / with the sun  
'The clothes were dried by the sun'

2) Those that cannot form a passive, e.g. break (*spa-o* break-**Act** 'break', *\*spaz-ome* break-**Nact** 'be broken').

Verbs with **non-active** in anticausatives also fall into of two groups:

1) Verbs that can only form the anticausative, e.g. *burn*:

- (15) a. O Janis      ekapse      ti supa  
the John-nom burnt-**Act** the soup  
b. I supa      kaike      *me ti dinati fotia/\*apo to Jani*  
the soup burnt-**Nact** with the strong fire/from the John

As shown by (15b), agentive *apo*-phrases are not tolerated with such verbs.

2) Verbs that are ambiguous: they can form both the passive and the anticausative, e.g. *destroy*:

---

<sup>8</sup> A third type also exists with verbs showing both morphological patterns. I will not discuss these cases here.

- (i) a. O sismos      gremise      to ktirio  
The earthquake-nom demolished the building-acc  
b. To ktirio      gremise apo mono tu  
The building collapsed-**Act** by itself  
c. To ktirio      gremistike      apo mono tu  
The building collapsed-**Nact** by itself

- (16) a. O Janis/ i fotia katestrepse to spiti  
 The John-nom / the fire-nom destroyed-**Act** the house  
 b. To spiti katastrafike *me tin fotia/ apo ton Jani*  
 The house destroyed-**Nact** with the fire/ from the John

In (16b) both the causer *me*-PP and the agentive *apo*-PP are well-formed.

Finally, there are verbs where **non-active** morphology only forms the passive. Strongly agentive ones prototypically fall under this category:

- (17) a. O Janis dolofonise ti Maria  
 The John murdered-**Act** the Mary-Acc  
 John murdered Mary  
 b. I Maria dolofonithike *apo to Jani/*  
 The Mary-nom murdered-**Nact** from the John/  
*\*apo to sismo*  
 from the earthquake

Thus we can conclude that anticausatives in Greek fall in two main morphological classes, summarized in table 1. The column labelled basic form shows simply which form is taken to be basic on an iconicity reasoning. The same representation will be used for the other languages discussed here, but it involves no theoretical commitment on my side.

**Table 1** (Alexiadou & Anagnostopoulou 2004):

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	Active	Active	intransitive
<b>Class II</b>	Active	Non-active	transitive

### 2.2.2 Hindi

The factual situation here is a bit more complex, so I will not go into the details of the paradigm; still the state of affairs seems to point to the existence of two morphological classes (see Bhatt & Embick in preparation, Ramchand 2006b).

**Table 2**

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	V- <b>aa</b> -naa	V-naa	intransitive
<b>Class II</b>	V--naa	V(stem simplification)-naa	transitive

- (18) a. Causative jaag-**aa**-naa Anticausative jaag-naa 'wake up'  
 b. maar-naa mar-naa 'die/kill'

One class contains the overt causative morpheme -aa- suggesting that the intransitive form is basic; the second class involves a marked anticausative as in Greek, which in this language it is signalled by stem simplification.

Data from Korean, Turkish, Japanese, and Armenian go in the same direction. The subsections 2.2.3-2.2.6 draw from Volpe (2005, 2007 and references therein).

### 2.2.3 Japanese



As Volpe (op.cit.) discusses in detail, morphology is involved in the Japanese verbs participating in the Causative Alternation, as illustrated in table 3:

**Table 3**

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	V-Affix: kawak- <b>as</b> -u	V: kawak-u 'dry'	intransitive
<b>Class II</b>	V: war-u	V-Affix: war- <b>er</b> -u 'break'	transitive

According to Volpe, what I describe here as Class 1 anticausative verbs, *kawak-u* 'dry', *wak-u* 'boil' and *ugok-u* 'move', are  $\emptyset$  derived. On the other hand, their lexical causative partners, *kawak-as-u*, *wak-as-u*, and *ugok-as-u* display the morpheme, *-as-*, evidence that the underlying syntactic form is the intransitive. Class 2 unaccusative verbs, *war-e-ru* 'break', *yak-e-ru* '(be) burn(-ed)' and *tok-e-ru* 'melt, dissolve' display an overt morpheme, *-e-*; their lexical causative partners are  $\emptyset$  derived and therefore this class is basic in its transitive form.

Japanese has an impressive number of arbitrary morphological classes; Jacobsen (1985) gives the number of classes as sixteen. Additionally, the majority of morphological classes morphologically-mark both the transitive and intransitive partners of a single root (see also Horvath & Siloni, this volume, for discussion). However, the two morphological classes he and Volpe use are transparent for our purposes.

#### 2.2.4 Turkish

As Volpe points out, in Turkish pairings of anticausative-causatives show similarities to Japanese, although the overt morphological markers are predictably determined by the phonology of the root. Some anticausatives are  $\emptyset$ -marked, a Class 1 pattern; others are the reverse conforming to the Class 2 pattern:

**Table 4**

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	V-Affix: büyü- <b>t</b>	V: büyü 'grow'	intransitive
<b>Class II</b>	V: kapa	V-Affix: kapa- <b>n</b> 'close'	transitive

Volpe notes that while the morpheme used for morphological causatives is generally *-dVr*, but after a vowel-final root, it is *-t*. He states: "The productive anticausative/passive morpheme also varies in accord with the phonology of the root and conforms to vowel harmony. Roots ending in a vowel affix *-n-*; stems ending in a consonant other than an *l* affix a vowel with *l*; roots ending in *l* affix *-Vn*." Interestingly, as he discusses, Turkish also has a number of derived verbs, mostly deadjectivals, which participate in the Causative Alternation. These deadjectival verbs contain the unaccusative/passive morpheme *-l- /-Vl* in their intransitive versions. Together with this morpheme, the causative morpheme *-t- /-Vt* creates the causative, providing further examples of the causative alternation with morphologically simpler intransitives.

#### 2.2.5 Korean

A language that according to Volpe is very similar to the alternating pairs seen in Japanese and Turkish, is Korean. In Korean, certain anticausatives are  $\emptyset$ -derived; their causatives contain overt morphological marking, examples of the Class 1 type. Some causatives are  $\emptyset$ -derived; their intransitive-anticausatives partners are overtly marked examples of the Class 2 type. The morpheme *-(h)i*, and its allomorphs *-li*, *-si*, and *-ki*, is ambiguous. Class 1 verbs affix it to causatives, Class 2 to anticausatives:

**Table 5**

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	V-Affix: mal- <b>li</b> -ta	V: malu-ta 'dry'	intransitive
<b>Class II</b>	V: tat-ta	V-Affix :tat- <b>hi</b> -ta 'close'	transitive

### 2.2.6 Armenian

Finally, Volpe offers a description of the Armenian system, where Class 1 verbs are typically de-adjektival. Their causatives partners are created with the causative morpheme *-ats-*. Class 2 change of-state verbs create anticausatives through the affixation of the passive/reflexive morpheme *-v-*:

**Table 6**

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	V-Affix: cor- <b>ats</b> -nel	V: coranal 'dry'	intransitive
<b>Class II</b>	V: batsel	V+Affix: bats- <b>v</b> -el 'open'	transitive

### 2.2.7 Salish

Further (surprising) support for the existence of two classes comes also from St'at'imcets (Salish, Davis 2000), where the claim is that all verbs are basic anticausatives. In this language, all intransitives are un-suffixed, but all transitives contain an overt transitivizer (DIR, which entails agency and CAUS, which does not). Still, however, there is a class of verbs that forms anticausatives on the basis of **reflexivization (lec)**. In most cases there is free variation between Class I and II:

**Table 7**

	<b>Causative</b>	<b>Anticausative</b>	<b>Basic form</b>
<b>Class I</b>	V-Affix	V	intransitive (19a)
<b>Class II</b>	V-Affix	V-Reflexive	transitive (19b)

- (19) a.   √k'ác                                  √k'ác-s-as                                  √k'ác-an-as  
dry-    dry-caus-erg                                  dry -dir-erg
- b.   non-control (= non-agentive) reflexives
- √t'up                                  √t'up-**lec**                                  'get twisted'
- √qwum                                √qum-**lec**                                  'curl up'
- √qwts                                 √qwts-**lec**                                 'go red'

The anticausatives formed with *lec* can be used in a context where there is an external cause bringing about the change of state. I will come back to that in section 2.4.

## 2.3 Marked anticausatives are not passive

In spite of the presence of a marking that is similar to that of passive verbs in some cases, or at least to a marking related to de-transitivization, the so called Class II anticausatives are not passive. The evidence provided to substantiate this point relates to the availability of agentive modifiers and of the by-itself phrase. As is well known, in e.g. English an agentive by-phrase can appear in the passive, while the by-itself phrase is out (see Levin & Rappaport Hovav 1995: *the city was destroyed by John/\*by itself*). As (20) shows, in e.g. Hindi (from Bhatt & Embick in preparation), the anticausative structure is incompatible with an agentive by-phrase:

- (20) a. Passive:  
 paanii Ram-dwaaraa ubaal-aa jaa rahaa thaa *compatible with by-phrases*  
 water Ram by boil-Pfv passive Prog.M be.Past.M  
 'The water was being boiled by Ram'
- b. Anticausative:  
 \*paanii Ram-dwaaraa ubal rahaa thaa *incompatible with by-phrases*  
 water Ram-by boil Prog.M be.Past.M  
 'The water was boiling by Ram'

On the other hand, the *by-itself* phrase is not permitted with passives but is permitted with anti-causatives; this is illustrated in (21) with a Greek example:

- (21) a. \*to vivlio diavastike apo mono tu *Passive*  
 the book-nom read-**Nact** by itself
- b. To pani skistike apo mono tu *Anti-causative*  
 the cloth tore-**Nact** by itself

In all the above languages there is no grammatical difference between Class I and Class II verbs. They behave alike in all relevant respects, i.e. do not license Agent PPs, and license causer PPs and *by itself*, illustrated below with Greek examples from Alexiadou & al. (2006):

- (22) a. \*I porta anikse apo ton filaka *Agent PPs*  
 The door opened-**Act** by the guardian  
 ‘\*The door opened by the guardian’
- b. \*O Janis skotothike apo ton Pavlo  
 John killed-**Nact** by Paul
- (23) a. I porta anikse me ton aera *Cause PPs*  
 The door opened-**Act** with the wind  
 ‘\*The door opened by the wind’
- b. O Janis skotothike apo ton keravno  
 John killed-**Nact** by the thunder
- c. I porta anikse apo moni tis *by itself*  
 The door opened-**Act** by alone-sg its  
 ‘The door opened by itself’
- d. To pani skistike apo mono tu  
 The cloth tore-**Nact** by itself

Assuming, following Kratzer (1994), that Voice is responsible for the introduction of external arguments and that the same head that introduces a DP in the active, licenses a PP in the passive, the above data suggests that the ungrammaticality of agentive PPs in the case of class I verbs (e.g. 22a) is due to the absence of Voice. This was taken as evidence by Alexiadou & al. (2006) that verbs without special morphology in the anticausative pattern have the structure in (9). However, the above data also show that the anticausatives with passive morphology behave like the ones without (22a vs. 22b). Although the morphological marking different, the behavior of the two classes is identical. Assuming, following Embick (1997, 1998), that passive Voice morphology is the realization of a structure without an external argument, irrespectively of the interpretation this receives, this leads to the proposal that class

II verbs, the ones with special Voice morphology, have the structure in (10). The two structures are repeated below:<sup>9</sup>

- (9) [ v [Root ] ] *Anticausative structure I: Class I verbs*  
 (10) [Voice (-ext. arg. -AG ) [ v [Root ]]] *Anticausative structure II: Class II verbs*

Naturally the question that arises is why should marked anticausatives have the structure in (10). I will come back to this in the next sub-section.

So far I established that across languages two morphological patterns are available for anticausatives. The next questions to be dealt with are the following. Do we observe regularity within a language as to which roots will go under which pattern? Do we observe cross-linguistic regularity?

## 2.4 The distribution of the two patterns makes reference to verb classification

By surveying the literature on the above distribution, we can establish the following generalization:

(24) Agentive roots never alternate

(24) holds in all languages under discussion. This means that agentive roots only occur in the context of Voice marked [+agentive]. Why should that be so? Recall the way agentive roots were defined: the bringing about of the event makes crucial reference to an external agent. Agentivity, as discussed in Davis (2000) and Doron (2003), cannot be suppressed. If an agent is present in the lexical representation/meaning of the root, there is no mechanism which can remove that. Hence the only possibility for a verbal alternation in the context of agentive roots is the passive formation, where there is a consensus that the external argument is implicit.

The point to be made now is that in all the languages under discussion, anticausative verbs that are characterized as internally caused (*grow*, *blossom*) and/or caused unspecified in Alexiadou & al. (2006) are Class I verbs, while verbs that are characterized as externally caused are Class II verbs.

Consider Greek. As Alexiadou & Anagnostopoulou (2004) note, mainly deadjectival verbs, unspecified cause verbs and internally caused verbs go in Class I. The same holds for Korean, Japanese, Armenian and Turkish, as discussed in Volpe (2005, 2007).

**Class I verbs** a. De-adjectival\_Alexiadou & Anagnostopoulou 2004:

<b>Verb</b>		<b>Adjective</b>	
aspr- <b>iz</b> -o	'whiten'	aspr-os/i/o	'white'
stroggil- <b>ev</b> -o	'round'	stroggil-os/i/o	'round'
plat- <b>en</b> -o	'widen'	plat-is/ia/i	'wide'
stegn- <b>on</b> -o	'dry'	stegn-os/i/o	'dry'
b. internally caused verbs:			
anth- <b>iz</b> -o	'blossom'	muhl- <b>iaz</b> -o	'mould'
c. unspecified cause verbs:			
anigo	'open'	spao	'break'

*-iz*, *-iaz*, *-ev*, *-en*, *-on* are taken to be overt reflexes of eventive v.

<sup>9</sup> Certain verbs can appear in both patterns (potentially with a meaning difference, see Alexiadou & Anagnostopoulou 2004 for Greek, Folli 2002 for Italian)

On the other hand, most class II verbs are those that can be classified as externally caused:

**Class II verbs: verbs that use Nact. morph in the anticausative.**

kommatiazo (tear)  
 miono (decrease)  
 eksafanizo (diminish)  
 katastrefo (destroy)  
 svino (burn)  
 singentrono (collect/gather)  
 dhiadhidho (spread a rumor)  
 vithizo (sink)  
 giatrevo (heal)

As Zombolou (2004) observes, in the third class of verbs, those that can have both forms, the Non-active form is almost obligatory, if the external force/cause is contextually salient:

- (25) a. \*etrehe poli ke zestane i mihani tu aftokinitu  
 run much and warm-3sg the motor the car-gen  
 b. etrehe poli ke zestathike i mihani tu aftokinitu  
 run much and warm-Nact 3sg the motor the car-gen  
 He was driving fast and the motor of the car got warm

In Hindi, as Bhatt & Embick (in preparation) state, with verbs of class II the conceptualization of the event meaning requires an external force. Verbs of class I do not require this. Examples taken from their manuscript are given below. We do observe a significant degree of similarity to the Greek classification:

- |      |    |                    |                     |                          |                 |
|------|----|--------------------|---------------------|--------------------------|-----------------|
| (26) | a. | bah-naa (intr.)    | bah-aa-naa (tr.)    | 'flow/cause to flow'     | <i>Class I</i>  |
|      |    | biit-naa (intr.)   | biit-aa-naa (tr.)   | 'elapse/cause to elapse' |                 |
|      |    | pahuch-naa (intr.) | pahuch-aa-naa (tr.) | 'arrive/cause to arrive' |                 |
|      | b. | bandh-naa (intr.)  | baandh-naa (tr.)    | 'tie'                    | <i>Class II</i> |
|      |    | kat-naa (intr.)    | kaat-naa (tr.)      | 'cut'                    |                 |
|      |    | mar-naa (intr.)    | maar-naa (tr.)      | 'die/kill'               |                 |

On the view adopted here, the special morphological marking of class II verbs signals the morphological realisation of a particular structure, as (10-11) suggest, repeated below:

(10) [Voice (-ext. arg. -AG) ] [ (eventive)v [Root ]]] *Class II*

(11) V -> V-VOC[NonAct/+marked]/ \_\_\_No external DP argument

It is the absence of an external argument in Voice that results in this particular marking. Since class II verbs are externally caused roots, in a sense they are expected to combine with Voice, their anticausatives are built on the basis of (10).<sup>10</sup> Class I verbs do not include Voice, hence they are not found with detransitivization morphology that is located in Voice°.

<sup>10</sup> Note that there are always mismatches. So verbs that are class I in one language are class II in another language, e.g. 'open' is a case in point; see Haspelmath (1993). This is why the patterns discussed here are considered to be strong tendencies. Some roots seem to prefer to appear in transitive construals, although there is

Three different interpretations appear in the literature to this observed morphology-syntax interaction. On Embick's (1998) view, non-active spells-out a particular structure, hence it is blind as to whether agentive features are present or not. On a slightly different view, Non-active prevents the insertion of the external argument or in other words only allows the insertion of the root's argument (Doron 2003). On this view, passive and anticausative are two different instantiations of this property, with one difference. Both Voices derive intransitive verbs, as they only allow the merge of the root's argument into the derivation. Specifically, the anticausative (middle in Doron's terms)-voice modifies the root by reclassifying it with respect to its requirement for an external argument. The passive voice-head, on the other hand, doesn't modify the root; rather it modifies the head introducing an additional external argument. On this account, a crucial difference between the two voices is that passive applies to verbs, and is found only if the active exists, whereas the anticausative/middle applies to roots, so that the existence of an anticausative verb does not depend on an active verb.

This latter analysis draws evidence from de-adjectival verbs, where no external argument is required by the root. It is clear that in Greek (and in Hebrew, as discussed by Doron), an intransitive verb can simply be derived without any voice head. So that when a Nact voice head appears in the derivation, it cannot be anticausative but only passive, since no external argument is required by the root. As can be seen in (27), only the Agent is allowed:

- (27) Ta ruha stegno**thikan**                      \*apo ton ilio  
       the clothes dried-**Nact**                      from the sun  
       'The clothes were dried (by an implicit agent)'

As Alexiadou & Doron (2007) pointed out, in Greek, there is no morphological distinction between the two operations, while there is in Hebrew. Hence for Greek, and possibly for the other languages, a unique Nact morphology appears in both derivations (and also reflexives and dispositional middles), though on the basis of tests such as agentive *by*-phrase, causer PP and *by-itself* modification, they behave differently from one another.

On yet a third approach (Schäfer 2007), the anticausative Voice is special, it is void of semantic content, it functions as an expletive.

Following Doron and Schäfer, I assume that we are dealing with two realizations of Voice: passive Voice and anticausative/middle Voice with distinct properties. The identical morphology that surfaces with both is taken to be an instance of syncretism, which can be easily captured under Embick's rule. It is important to note that languages differ as to whether they will use reflexive clitics/pronouns or non-active morphology to realize this distinction. The intuition is that languages make use of the morphology available to them that signals 'valency' reduction.

I established thus far two classes of verbs that form anticausatives on the basis of two distinct markings. At first sight, it seems that the pattern makes clear reference to the types of roots involved. The roots in e.g. class I of Greek tend to be stative; this means that they are merged at the root level in (9), and *v* is realized via a special affix. The roots of class II, however, are not stative. Some of them have a manner component, in which case they can attach to *v* as modifiers, i.e. they are not the most deeply embedded element.<sup>11</sup> Some of them seem to be denominal. A systematic characterization of this partition awaits further research. Should it turn out to be the correct generalization, it matches the remarks to be made in

---

no a priori reason why this should be so. The main point is that something like that can only happen if two structures are available for anticausative syntax.

<sup>11</sup> Thanks to Elena Anagnostopoulou for making this observation.

section 4 concerning the productivity of the alternation: both are related to the realization of pieces in the structure that constitutes the building block of (anti-)causative verbs.

A potential problem to the view just discussed is presented by Salish languages. Demirdache (2005) notes that the verbs that take reflexive morphology are mainly verbs of bodily change of state. These verbs are internally caused; still they appear with reflexive morphology. In this language bare unaccusatives do exist, so the question is what does the reflexive marking do here? But, as Demirdache says, the two forms cannot be used in the same context. Consider (28), taken from Demirdache (2005):

- (28) a. qwtsiqw-lec-kán tu7  
 red-lec-1sg.subj def.past  
 I went red lit. If I go out in the sun  
 b. ka-qwitsiqw-kan-a  
 OOC-red-1sg.subj-obj  
 I went red lit. if by accident

In (28a), the stem 'red' is reflexively marked. (28a) can be used in a context where there is an external cause bringing about the change of state of the speaker. On the other hand, (28b) is affixed with out of control morphology (OOC). Out of control morphology signals that the change of state happened accidentally (spontaneously, suddenly). This is similar to the situation described for Greek in (25). If so, then it is compatible with 'transitive' syntax.

### 3. English de-transitivization processes

Let me now turn to English. As we have seen, English only provides the morphological evidence for Class I, and hence structure (9). This is so as English lacks Voice morphology related to de-transitivization which is realised in structure (10). (10) is absent from English.

In principle one could argue that (10) is available in English, and it is just that we do not see the difference in the morphology between the two structures, unlike the situation in the other languages, where an overt reflex is present.

- (29) a. The flowers blossom *no Voice present*  
 b. The window broke *Voice present*

This, however, does not seem right, in view of the fact that verbs like *cut*, *kill* and *destroy* alternate in all the other languages with special Voice morphology but not in English. That is if (29b) is analysed on the basis of (10), why is (30) out?<sup>12</sup>

<sup>12</sup> Embick (1997) suggests that (30) is out because in a finite clause the external argument cannot be omitted. What, however, could be an anticausative structure with Voice in English, is the middle (Embick 1997), with raising of the internal argument to Spec, VoiceP (Schäfer 2006):

(i) [<sub>VP</sub> Theme<sub>i</sub> [<sub>V'</sub> Voice<sub>{D, ∅}</sub> [ V t<sub>i</sub> ]]]

Since the requirement on voice morphology is one that says Voice should appear as non-active in the absence of a specifier, and English lacks this particular instantiation of Voice, the internal argument must move to Spec, VoiceP. Evidence from this comes from facts discussed in Schäfer (2006), building on observations by Lekakou (2005) and Fellbaum (1986) which involve pairs of verbs in the causative and middle alternation. In the middle alternation the transitive form of the verb is used, suggesting a de-transitivization process.

(ii) a. John raises his kids very strictly (Lekakou 2005)  
 b. The sun rises from the East  
 c. Obedient daughters **raise** more easily than disobedient sons

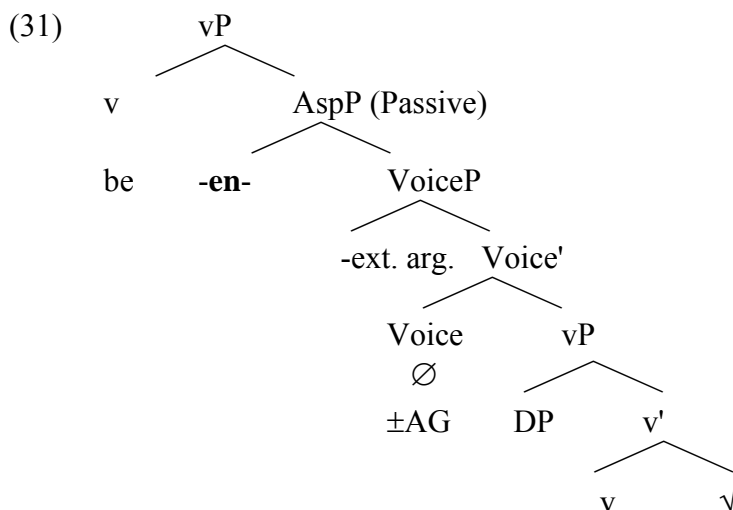
Moreover, if we analyse the get-passive as non-agentive (Alexiadou 2005), this could be another environment where externally caused roots of English are intransitive, e.g. *John got killed*.

(30) \*The manuscript destroys

We can conclude that (10) is unavailable in English (Alexiadou & al. 2006). So (29b) is derived on the basis of (9), involving a cause unspecified root, see (Smith 1970).  $\sqrt{\text{destroy}}$  is an externally caused root and is incompatible with the intransitive verbal syntax of English (where intransitive means lack of Voice).

This suggests that in English root classification determines their behavior in alternations. In this language, only cause-unspecified roots alternate. On the other hand, in languages like Hindi and Greek, this does not seem to be the case. There, the root type correlates in part with morphological behavior. All but agentive roots alternate and externally caused roots bear special morphology. An issue arises with internally caused roots which I will discuss in section 4.

But why should that be the case and why can't the English passive function as an anticausative form? I argue that this has to do with the syntax of Voice in English. (10) is not instantiated in English, as it has no overt 'valency reducing' morphology (Reinhart 2000). As Hallman (2000) also points out, middles and nominalizations are cases in point. Here we have processes of valency reduction but no overt morphological reflex. Consider the structure used for English passive formation. On the basis of standard assumptions, this clearly involves a more complex structure than (10), as shown in (31):



*-en* is not a valency reducing morpheme, i.e. it does not realise the absence of an external argument. It is rather an aspectual affix (Hallman 2000, Embick 2003). So (morphological) passive in English is spelled-out outside of the domain of Voice and hence (31) cannot be an anticausative structure. In other words, (10) alone does not exist in English, and this is related to the syntax of its Voice system.

#### 4. Productivity of the alternation

---

Note further that (30) can be used as an intransitive in the nominal environment (*the destruction of the city*, Marantz 1997). Such nominalizations were argued to lack Tense and be deeply intransitive (Alexiadou 2001).



As already mentioned, in English the alternation is limited to some verbs of change of state. In the languages discussed here a wider variety of verbs can alternate. Recall that cross-linguistically, we find two patterns of variation:

(i) First, we have causativization of verbs that do not have causative counterparts in English, including verbs of inherently directed motion, verbs of appearance and existence and even unergative verbs:<sup>13</sup>

- |      |    |   |  |                     |
|------|----|---|--|---------------------|
| (32) | a. | $\sqrt{t'q}$<br>arrive  | $\sqrt{t'q}$ -s<br>arrive-CAUS = bring | <i>St'at'imcets</i> |
|      | b. | Kotozuke-a    kie-ta<br>message-nom disappear-past<br>'The message disappeared'   |  | <i>Japanese</i>     |
|      | c. | Dareka-ga        kotozuke-o    keshi-ta<br>Somebody-nom message-acc disappear-cause-past<br>'Somebody erased the message' |  |                     |

(ii) Second, we find anticausatives of verbs that do not form anticausatives in English, namely externally caused roots:

- |      |    |   |  |              |
|------|----|---|--|--------------|
| (33) | a. | To hirografo katastrafike    apo mono tu<br>the manuscript destroyed-Nact by itself<br>'The manuscript got destroyed' |  | <i>Greek</i> |
|      | b. | ujar-naa                      ujaar-naa<br>got destroyed                destroy (tr.)                                 |  | <i>Hindi</i> |

Clearly, this cannot be explained by appealing to the internal vs. external causation distinction (see also Volpe 2005). The internal vs. external causation distinction might be the correct generalization concerning the morphological pattern of anticausative formation in certain languages (unmarked vs. marked), but not concerning the cross-linguistic distribution of the alternation.

The second pattern was explained as follows: if externally caused verbs alternate, then they appear in the marked morphological pattern, i.e. structure (10). (10) is unavailable in English, hence the restrictions observed (though see note 10 on middle formation).<sup>14</sup>

Before I turn to the first pattern, a note is in order. I mentioned that with very few exceptions Salishan languages generally allow their externally caused verbs to appear in structure (9) as anticausatives. Why is this so? I speculate that this is related to the fact that many of these roots in Salish have the form [verb+instrument], i.e. they include the representation of the cause already in the root meaning, as argued by Demirdache. If this turns out to be correct, then we have a third group of languages, where the alternation correlates with the complex built up of the root and further evidence for a structural approach to the alternation.

But what about the first pattern? Does this suggest that certain verbs are doubly-classified in certain languages? I would like to propose that productive causativization has

<sup>13</sup> Internally caused roots can causativize in English, and not only in the periphrastic construction as we will see below, see Wright (2002) for discussion.

<sup>14</sup> The Romance languages and German are restricted in the same way, although they can form anticausatives via *se/sich*. One could argue that *se/sich* are in Spec, VoiceP, i.e. a specifier is projected in Voice, and hence these languages are more like English and less like Greek with respect to (11).

nothing to do with the way languages classify roots (externally vs. internally caused/caused unspecified). In principle all anti-causatives can form a causative. This is in a sense straightforward in a system where external arguments are optional and introduced by Voice.

Let us first consider internally caused verbs, before we turn to verbs of appearance and existence. Note that it is not exactly accurate that internally caused verbs do not causativize in English. They do so in two contexts: in the periphrastic causative construction and when they have causers but not agents as external arguments (Wright 2002).<sup>15</sup>

- (34) a. The heat caused the flowers to wilt  
 b. The bad weather rotted the trees  
 c. \*The gardener rotted the flowers

What is the common property unifying these contexts? I believe it is the property of indirect causation (Piñón 2001)). The consensus in the literature is that causal chains that can be described by single-clause expressions express a direct relation between the causer and causee. In contrast, when the relation between causer and causee is indirect, the causal chain must be described by a periphrastic expression. In the case of internally caused roots, an Agent is not allowed as this cannot be interpreted as indirectly facilitating the change of state of the theme, which is the case for the causer as well as the interpretation of the periphrastic causative. Note also that internally caused verbs appear with causer PPs in languages such as Greek, where the PP is interpreted as an indirect causer. As Alexiadou & al. 2006 note, and Alexiadou & Anagnostopoulou 2007 discuss in detail, *me causer* PPs in Greek introduce indirect causation, while *apo* ones introduce direct causation:

- (35) ta luludia anthisan me tin kalokeria/??apo tin kalokeria  
 the flowers blossomed with the good weather/by the good weather

Turning to the restrictions in English causativization, observe first that English used to have causativization morphology which got lost in the course of its history (in support of Reinhart's claim that in certain cases we have accidental lexical gaps concerning the causative variants). Specifically, Old English had productive causativization morphology, the so called *ge*-prefix (Visser 1970, Vera-Diaz 2000, Lavidas 2007). Several verbs that do not alternate now could alternate in Old English by using of this prefix:

- |      |         |            |           |   |
|------|---------|------------|-----------|---|
| (36) | growan  | 'flourish' | gegrowan  | 'produce'                                     |
|      | feallan | 'fall'     | gefeallan | 'overthrow'                                   |
|      | limpan  | 'happen'   | gelimpan  | 'cause someone to start having in perception' |
|      | standan | 'stand'    | gestandan | 'cause to stand'                              |

Another process was *-jan* affixation, which had the result that causative and anticausative verbs that look alike in contemporary English looked different in Old English:

- |      |                    |                     |
|------|--------------------|---------------------|
| (37) | dúfan              | dúf: +jan= dýfan    |
|      | dive-non causative | dive-causative      |
|      | sincan             | sink: +jan = sencan |
|      | sink-non causative | sink-causative      |

---

<sup>15</sup> Restrictions on the type of external argument are non uncommon across languages. See Ritter & Rosen (this volume) who discuss an animacy restriction on the external argument in Blackfoot.

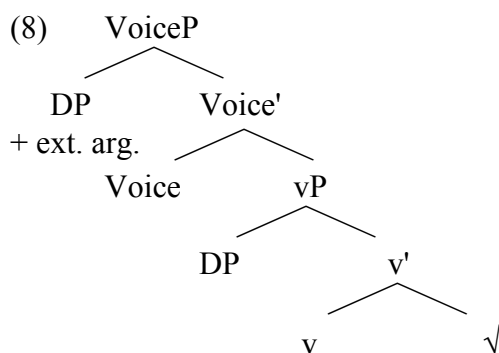
Even after the disappearance of morphology during Middle English (1100-1500), Early Modern English shows interesting patterns of causativization (and in the acquisition literature one finds many examples of innovative causative formation by English children):

- (37) a. I have sprouted all kinds of grain 1770, from Visser (1970:120)  
 b. The strength of affection bloomed them 1597, from Visser (1970: 101)

Morpho-phonological changes blurred this distinction and ultimately led to the system we find today, where a subset of the verbs alternate.

Let us now turn to the other class of verbs, verbs of appearance and existence which do not alternate in English or Greek, but do so in e.g. Japanese and Salish.<sup>16</sup> The idea I would like to put forward here is the following: the problem is not one of multiple classification of roots. Rather it is a problem of inventory. Languages with productive causativization have a relatively large functional vocabulary, and a relatively small root list. Different meanings come about by combining functional elements with a small set of roots (see Reinhart's 2000 discussion on the Hebrew alternation; see also Arad 2002). English, on the other hand, has a relatively large root list and a small functional vocabulary.

Consider again the structure in (8), that of a transitive causative verb:



In English the forms  $\sqrt{\text{ARRIVE}}$  or  $\sqrt{\text{DISAPPEAR}}$  can combine with  $v$  but not with  $v$  and Voice, as the events they refer to do not make reference to external arguments. This is similar in Japanese and Salish. The difference is that when English comes to express the meaning *cause to arrive*, it uses a different element, namely *bring*, and the meaning *cause to disappear* is expressed with the element *erase*. Japanese and Salish do not have extra lexical items, so they use causativization in order to express the same meaning. Why is that so? Presumably the presence of a distinct head realizing 'cause/become/fientive' in Japanese/Salish forces the root to be inserted in the complement of  $v$ , and thus receive an interpretation as a change of

<sup>16</sup> I do not discuss causativization of unergative and transitive verbs here (cf. Horvath & Siloni this volume); the former is possible also in English:

- (i) The doctor walked the patient.  
 (ii) aba heexil et Danny bananot Hebrew (from Reinhart 2006)  
 Dad caus-eat acc Danny bananas  
 Dad fed Danny bananas

The productivity of the process in (ii) could again be an issue of inventory: in Hebrew cause + eat gives rise to the meaning *feed* in English. Note that originally the English verb *feed* derives from the noun food in combination with the causative prefix *-jan*: food +jan → via the process of vowel mutation *feed*. In other words, synchronically the root *feed* contains the causative component which is compositionally derived in Hebrew. The process in (i) is restricted: as Reinhart discussed, the external argument is preferably an Agent. Why should that be so? Presumably because in such transitivity processes the external argument can only be interpreted as being directly involved in the event, in which case it is most naturally expressed as an Agent. See Levin & Rappaport Hovav (1995) for further discussion of this pattern.

state, which is not the original interpretation of e.g. *arrive*. This change of state can then be brought about by an external causer (building on Dermidarche 2005). In English, on the other hand, the root can only some times be found in the complement of v position, namely when they are clearly stative, see Embick (2004).  $\sqrt{\text{ARRIVE}}$ , not being a stative root, cannot presumably appear in this position, and hence must receive a different structural analysis (see Deal 2008 for extensive discussion that  $\sqrt{\text{ARRIVE}}$  type roots lack a causative component).<sup>17</sup> One can speculate as to whether or not a decomposition analysis of such forms into a PP part and a core root part (ad/r +rive), which is valid from a diachronic perspective, could be used here. If so, clearly, the structure is not a causative one, and some more things need to be said about the non-availability of external arguments in English.

## 5. Conclusion

In this paper I argued that two structures of (anti-)causative formation are available within a language and across languages. I presented evidence for two groups of languages: languages like English, where the classification of roots determine their behavior in alternations and languages like Hindi and Greek, where this does not seem to be the case. There, the root type correlates in part with morphological behavior. However, the crosslinguistic variation relates to properties and realisation of the pieces of the structure that are the building blocks of (anti-)causatives.

- (9) [ v [Root ]] *Anticausative structure I: universally available*  
 (10) [Voice (-ext. arg. -AG) [ v [Root ]]] *Anticausative structure II: subject to variation*

Variation was argued to depend on properties of Voice and properties of the Root.

## References

- Alexiadou, A. 2001. *Functional structure in nominals: nominalization and ergativity*. Amsterdam: John Benjamins.
- Alexiadou, A. 2005. A note on non-canonical passives: the case of the get passive. In H. Broekhuis & al. (eds.) *Festschrift für Henk van Riemsdijk*. Berlin: Mouton de Gruyter.
- Alexiadou, A. & E. Anagnostopoulou. 2004. Voice morphology in the causative-inchoative Alternation: evidence for a non unified structural analysis of unaccusatives. In A. Alexiadou, E. Anagnostopoulou, and M. Everaert (eds.) *The Unaccusativity puzzle*. Oxford University Press.
- Alexiadou, A. & E. Anagnostopoulou. to appear. Agent, causers and instruments PPs in Greek: implications for verbal structure. MIT Working papers.
- Alexiadou, A., Anagnostopoulou, E. & F. Schäfer. 2006. *The properties of anticausatives crosslinguistically*. In: M. Frascarelli (ed.), *Phases of Interpretation*. Berlin: Mouton.
- Alexiadou, A. & F. Schäfer. 2006. Instrument subjects are Agents or Causers. To appear in *Proceedings of WCCFL 25*.
- Alexiadou, A. & E. Doron. 2007. The syntactic construction of two non-active voices: passive and middle. Paper presented at the Workshop on Global selective comparison, GLOW XXX, Tromsø.
- Arad, M. 2002. Universal features and language particular morphemes. In A. Alexiadou (ed.) *Theoretical approaches to universals*. Amsterdam: John Benjamins.

<sup>17</sup> In systems like Ramchand's this entails that identification of arguments happens on the basis of one element. So *arrive* identifies all the positions in (10) but co-indexation of the two events ensures that an external argument cannot be added by transitivity. In languages where re-merge is not possible, a Causer can be introduced, and must be introduced in the presence of overt transitivity morphology (Dermidarche 2005).

- Bhatt, R. & D. Embick. In preparation. Causative Derivations in Hindi. Ms., UMass and UPenn.
- Borer, H. 1984. *Parametric syntax*. Dordrecht: Foris.
- Borer, H. 2004. The grammar machine. In A. Alexiadou, E. Anagnostopoulou, and M. Everaert (eds.) *The Unaccusativity puzzle*. Oxford University Press.
- Chierchia, G. 1989. A semantics for unaccusatives and its syntactic consequences. In A. Alexiadou, E. Anagnostopoulou, and M. Everaert (eds.) *The Unaccusativity Puzzle. Explorations at the Syntax-Lexicon Interface*. Oxford, Oxford University Press.
- Davis, H. 2000. Salish evidence on the causative-inchoative alternation. In W. Dressler & al- (eds.) *Morphological analysis in comparison*. Amsterdam: John Benjamins, 25-60.
- Deal, A.R. 2008. The origin and content of expletives: evidence from 'selection'. To appear in *Syntax*.
- Demirdache, H. .2005. What do pieces of words name? Handout. Talk presented at the University of Vienna.
- Doron, E. 2003. Agency and Voice: the semantics of the Semitic templates. *Natural Language Semantics*, 11(1): 1-67.
- Dowty, D. 1979. *Word meaning and Montague Grammar – The Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ*. Dordrecht: Reidel.
- Embick, D. 1997. Voice and the interfaces of Syntax. Ph.D. diss. UPenn.
- Embick, D. 1998. 'Voice Systems and the Syntax/Morphology Interface'. *MIT Working Papers in Linguistics* 32, 41-72.
- Embick, D. 2003. Locality, listedness and morphological identity. *Studia Linguistica* 57, 143-169.
- Embick, D. 2004. 'Unaccusative Syntax and Verbal Alternations'. In A. Alexiadou, E. Anagnostopoulou, and M. Everaert (eds.) *The Unaccusativity puzzle*. Oxford University Press.
- Fellbaum, C. 1986. *On the middle construction in English*. Bloomington, Indiana: Indiana University Linguistics Club.
- Folli, R. 2002. Constructing Telicity in English and Italian. PhD dissertation, University of Oxford.
- Hale, K. & J. Keyser. 2002. *Prolegomenon to a theory of argument structure*. MIT Press.
- Hallman, P. 2000. Passives in Arabic and English. Ms., UCLA.
- Harley, H. 2005. On the causative construction. Ms., University of Arizona.
- Harley, H. and R. Noyer. 2000. Formal vs. Encyclopedic properties of vocabulary: evidence from nominalization. In B. Peters (ed.) *The Lexicon-Encyclopedia Interface*. Elsevier Press.
- Haspelmath, M. 1993. More on the typology of inchoative/causative verb alternations. In Comrie B. and M. Polinsky (eds.) *Causatives and Transitivity*. Amsterdam: John Benjamins.
- Horvath, J. & T. Sioni. This volume. Lexicon versus syntax: evidence from morphological causatives.
- Jacobsen, W. 1985. Morphosyntactic transitivity and semantic markedness. *CLS* 21, 89-104.
- Kratzer, A. 1996. *Severing the external argument from its verb*. In: J. Rooryck & L. Zaring (eds.), *Phrase Structure and the Lexicon*. Dordrecht, Kluwer Academic Publishers.
- Landau, I. This volume. Saturated adjectives, reified properties.
- Lavidas, N. 2007. The diachrony of the Greek anticausative morphology. In A. Alexiadou (ed.) *The Morpho-syntax of Modern Greek*. Cambridge Scholars Publishing.
- Lekakou, M. 2005. *In the Middle, Somewhat Elevated. The semantics of middles and its crosslinguistic realization*. Ph.D. University of London. Available at LINGBUZZ.
- Levin, B. & M. Rappaport Hovav. 1995. *Unaccusativity. At the Syntax-Lexical Semantics Interface*. Cambridge/Mass., MIT Press.

- Marantz, A. 1984. *On the nature of grammatical relations*, MIT Press, Cambridge, Mass.
- Marantz, A. 1997. 'No escape from Syntax: Don't try a morphological analysis in the privacy of you own lexicon'. Paper presented at the 21st Penn Linguistics Colloquium. *University of Pennsylvania Working Papers in Linguistics*, 4.2. Philadelphia: University of Pennsylvania.
- Marantz, A. 2005. *Objects out of the lexicon: objects as event*. Handout. Talk presented at the University of Vienna.
- Piñón, C. 2001. A finer look at the causative-inchoative alternation. In R. Hastings, B. Jackson, and Z. Zvolenszky (eds.) *Proceedings of Semantics and Linguistic Theory 11*, Ithaca, NY: CLC Publications, Cornell University.
- Pustejovsky, J. 1995. *The generative lexicon*. MIT Press.
- Pylkkänen, L. 2002. *Introducing Arguments*. Ph.D. Diss., Department of Linguistics. Cambridge/Mass., MIT.
- Reinhart, T. 2000. *The Theta System: Syntactic realization of verbal concepts*, OTS Working papers, 00.0/TL (available also at <http://www.let.uu.nl/~tanya.reinhart>)
- Reinhart, T. 2002. *The Theta System – An Overview*. In *Theoretical Linguistics*: 229-290.
- Reinhart, T. 2006. Causativization and decausativization. Paper presented at the Workshop in honor of Anita Mittwoch. Jerusalem, July 2006.
- Ramchand, G. 2006a. *First phase syntax*. Ms., University of Tromsøe.
- Ramchand, G. 2006b. Direct and indirect causation in Hindi. Paper presented at the Workshop on Clitics, intonation and causatives, University of Konstanz.
- Ritter, E. & S.T. Rosen. This volume. Animacy in Blackfoot: implications for event structure and clause structure.
- Schäfer, F. 2006. A mute Voice for the Middle. In Proceedings of NELS 27.
- Schäfer, F. 2007. External arguments in change of state contexts: on the source of anticausative morphology. Ph.D. diss., University of Stuttgart.
- Smith, C. 1970. Jespersen's Move and Change class and causative verbs in English. In M.A. Jazayery & al. (eds.) *Linguistics and Literary Studies in Honor of Archibald A. Hill, Vol 2. Descriptive Linguistics*. The Hague: Mouton, 101-109.
- Theophanopoulou-Kontou. 2000. -O/-me alternations in MG patient oriented constructions: anticausatives and passives. In the proceedings of the 20th Annual Meeting of the Linguistics Dept. of the University of Thessaloniki.
- Tsimpli, I.M. 1989. On the properties of the passive affix in Modern Greek. UCL Working Papers in Linguistics 1: 235-260.
- Vera-Diaz. J. 2000. The development of causation in Old English and its interaction with lexical and diachronic processes. C.I.F. XXVI, 17-38.
- Visser, F. 1970. *A historical syntax of the English language. Part one: syntactical units with one verb*. Leiden: E. J. Brill.
- Volpe, M. 2005. Morphologically motivated Lexical semantic representations: the causative alternation and change of state verbs in Levin & Rappaport Hovav (1995). Ms.
- Volpe, M. 2007. A late insertion approach to Levin & Rappaport Hovav (1995): the causative alternation and change of state verbs. Ms.
- Wright, S. 2002. Transitivity and change of state verbs. Proceedings of BLS.
- Zombolou, K. 2004. *Verbal alternations in Greek: a semantic approach*. Ph.D. Diss. University of Reading.