

English psych verbs and the causative alternation: A case study in the history of English^{*}

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ABSTRACT This paper discusses the absence of the causative alternation with psych predicates in English from a comparative perspective. It argues that English lacks the psych causative alternation due to a combination of factors that have been pointed out independently in the literature, but not discussed in the context of the literature on the causative alternation in the non-psych domain: i) several object experiencer predicates got reanalyzed as subject experiencer verbs, ii) English borrowed new object experiencer predicates from verb classes that do not participate in the causative alternation, and iii) the *v* as well as the Voice layer of English that participated in the building of these verbs were also affected by changes in their properties.

Keywords: causative alternation, object experiencer verbs, subject experiencer verbs, externally caused predicates, Middle Voice

1 Introduction

There is a considerable amount of literature on psych verbs dealing with their different argument realization properties. Moreover, in the literature on English historical syntax, a lot of work has been devoted to describe and explain the changes that affected psych verbs. According to Roberts (2007), these changes cover a long period of time and constitute the best example of a lexical change: the lexical entries of these verbs were affected, and this might be correlated with a parametric change in the status of functional categories, however, the two changes are independent of one another. In this paper, I will indirectly deal with the latter issue, however, the bulk of my discussion will be devoted to the reorganization of lexical entries that affected psych verbs. I believe that both of these factors are important to understand what happened to this particular verb class, and thankfully they have been relatively well described in the literature.

The point of departure for this paper is the following observation: it has been proposed in the literature that object experiencer verbs are lexical causative verbs; see Grimshaw (1990), Croft (1991), Iwata (1995), Pesetsky (1995), Arad (1998), Reinhart (2002), Rozwadowska (2005), Bialy (2005), Alexiadou and Iordachiaioa (2014), and others, but cf. Belletti and Rizzi (1988), Landau (2010), Anagnostopoulou (1999). However, unlike other lexical causative

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verbs, object experiencer predicates in English do not enter the causative alternation. The issue I will try to deal with is why this is the case. In order to answer this question, however, one needs to revisit in detail the changes that affected this particular verb class in the history of English.

The answer I will provide is that we are dealing with a change that was caused by a conspiracy of various factors, which have been recently discussed in the literature. Two main factors seem to be the reanalysis of object experiencer predicates to subject experiencer ones and the borrowing of new object experiencer predicates from verb classes that do not participate in the causative alternation. A third factor relates to changes in functional heads, *v* and Voice in particular.

The paper is structured as follows. In section 2, I will discuss some general and well-known properties of the causative alternation in the non-psych domain. I will then turn to the psych causative alternation as this has been identified for languages such as Greek, Romanian, and Polish. I will then show that English lacks the psych causative alternation. In section 3, I will revisit the diachrony of English psych verbs and propose my analysis. In section 4, I will conclude.

2 The causative alternation

2.1 Alternating non-psych predicates

As is well known, in the causative alternation, illustrated in (1)-(2), the intransitive variant (which, following Alexiadou, Anagnostopoulou and Schäfer 2006, 2015, I will label, *anticausative*) describes an eventuality in which the theme, in this case *the window*, undergoes a change of state. The transitive variant (*causative*), however, is taken to describe the causation of a change-of-state; see Levin (1993), Schäfer (2009).

- (1) *John broke the window.* causative
 (2) *The window broke.* anticausative

In English, this alternation is extremely productive. Levin (1993) and more recently Rappaport Hovav (2014) state that well over 200 verbs participate in the alternation, and new verbs that enter the language participate in the alternation as well.

According to Levin and Rappaport Hovav (1995), and Reinhart (2002), change-of-state verbs alternate if the external argument of the transitive variant is thematically underspecified and can occur as an agent, an instrument or a causer; see (3) from Alexiadou, Anagnostopoulou and Schäfer (2015, p. 58):

- (3) *Underspecified external argument condition (UEAC)*
 Those transitive verbs that cannot form anticausatives restrict their subjects to *agents* or *agents* and *instruments* and disallow *causers*.

Although this condition has been critically discussed in Alexiadou, Anagnostopoulou and Schäfer (2015), it makes the prediction that if a predicate can take a variety of external arguments, then it should alternate. This explains why the verb *break* alternates in English, while other verbs such as *cut* do not; see the examples in (4) and (5) from Alexiadou, Anagnostopoulou and Schäfer (2015, p. 7):

- (4) a. *The baker/the knife cut the bread.*
 b. **The lightning cut the clothesline.*
 c. **The bread cut.*
- (5) a. *The vandals/the rocks/the storm broke the window.*
 b. *The window broke.*

2.2 Object experiencer predicates

The condition given in (3) is precisely the reason why object experiencer predicates are so intriguing. As is well known, the class of object experiencer predicates has been controversially discussed in the literature; see Landau (2010) for a recent overview. Here I will follow Arad's (1998) classification. According to Arad, object experiencer verbs have three different interpretations, illustrated in (6): an agentive reading where there is both an agent and a change of state in the experiencer; an eventive reading implying that something unintentionally caused a change of mental state in the experiencer; a stative reading where there is no agent nor any change of mental state.

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|-----|----|---|------------------------|
| (6) | a. | <i>Anna frightened Laura deliberately.</i> | agentive |
| | b. | <i>Nina frightened Laura unintentionally.</i> | eventive, non-agentive |
| | c. | <i>The noise frightened Laura.</i> | eventive, non-agentive |
| | d. | <i>Anna's behavior frightens Laura.</i> | stative |

Landau (2010) argues that agentive object experiencer predicates are actually not psych verbs. The question, however, posed by the data in (6), leaving the stative interpretation of this class aside, is the following: psych verbs allow both causer and agentive subjects in their eventive readings. Thus, one would expect them to obey the underspecified external argument condition in (3), and undergo the causative alternation, as does the verb *break*.

In fact, in languages such as Greek, Romanian, and Polish object experiencer psych verbs do alternate, i.e., they have a subject experiencer alternate (I will call this the OE-SE alternation here). Alexiadou and Iordachioaia (2014) argued in great detail that the OE-SE alternation with verbs that involve a change of state in Greek and Romanian is a subcase of the causative alternation discussed in 2.1. Bialy (2005) shows that OE predicates alternate in Polish as well, and Jurth (2016) makes the same claim for a particular OE class in Hungarian. The following pieces of evidence point to this conclusion: OE psych verbs in these languages show the same morphological pattern found in the causative alternation, they combine with causer PPs, and finally their intransitive variants are equally aspectually complex, in the sense that both contain a causative component, i.e., an event leading to a result state.

In what follows I will illustrate the first property. Bialy (2005, pp. 70-71) observes that similar to Polish anticausatives which are marked by reflexive morphology (7), Polish OE verbs have SE alternates similarly marked, (8), his (80) and (81):

- (7) a. *Piotr zamknął drzwi.*
Peter.NOM close.3SG.PST door.ACC.PL
'Peter closed the door.'
- b. *Drzwi zamknęły się.*
door.NOM.PL close.3PL.PST REFL
'The door closed.'
- (8) a. *Wiadomość o wypadku przeraziła Tomka.*
news.NOM about accident frighten.3SG.PST Tom.ACC
'The news about the accident frightened Tom.'
- b. *Tomek przeraził się.*
Tom.NOM frighten.3SG.PST REFL
'Tom was/got frightened.'
- c. *Zachowanie uczniów zdenerwowało nauczycielkę.*
behaviour.NOM pupils.GEN anger.3SG.PST teacher.ACC
'The behaviour of the pupils angered the teacher.'
- d. *Nauczycielka zdenerwowała się.*
teacher.NOM anger.3SG.PST REFL
'The teacher got/was angry.'
- e. *Wiadomość podekscytowała Piotra.*
news.NOM excite.3SG.PST Peter.ACC
'The news excited Peter.'
- f. *Piotr podekscytował się.*
Peter.NOM excite.3SG.PST REFL
'Peter got excited.'

As discussed in detail in Alexiadou, Anagnostopoulou and Schäfer (2015), Greek usually employs non-active morphology on anticausatives and realizes causers with the preposition *me* 'with.' As Alexiadou and Iordachioaia show, this happens also with psych verbs. Note that morphologically unmarked anticausatives exist both in the OE-SE and the causative alternation; see (9) for Greek, and see Bialy (2005) for Polish anticausatives derived from OE verbs.

- (9) a. *O Janis thimose me ta nea.* SE
the John angered.3SG with the news
'John got angry with the news.'
- b. *Ta ruha stegnosan me ton ilio.* anticausative
the clothes dried.3PL.ACT with the sun
'The clothes dried from the sun.'

On the basis of the resemblance between the OE-SE alternation and the (anti)causative alternation, Alexiadou and Iordachioaia (2014) propose to treat the former as a subcase of the latter. In view of the fact that these authors provided evidence that both the SE and the OE variant are equally semantically complex, it seems natural to assign the same analysis to both alternations. Bialy (2005) and Rozwadowska (2005) make similar observations as far as the event complexity of Polish OE verbs and their SE alternates are concerned, and Jurth (2016) observes a similar behavior for those OE Hungarian predicates that combine with a verbal particle.

2.3 English lacks the causative psych alternation

Crucially, however, English lacks the psych causative alternation. This was discussed in detail in Alexiadou and Iordachioaia (2014) and here I will briefly summarize their discussion.

As mentioned in the introduction, several researchers have argued that OE verbs are causative. Since causative verbs have anticausative variants, one should in principle expect OE verbs to also alternate. Pesetsky (1995) discusses a relatively small number of alternating psych verbs in English; see (10)-(11), a subset thereof. As shown in these examples, these verbs are compatible with *for* adverbials but incompatible with *in* adverbials.

- (10) a. *John worried about the television set for / *in an hour.*
 b. *The television set worried John for / ??in an hour.*
- (11) a. *We puzzled over Sue's remarks for / *in an hour.*
 b. *Sue's remarks puzzled us for / *in an hour.*

The incompatibility with *in*-adverbials clearly indicates that they cannot be viewed as instantiating the causative alternation. Clearly, they lack a change-of-state reading, and they can be analyzed as states or activities.

Consider now (12) from Pesetsky (1995, pp. 56-57):

- (12) a. *Bill was very angry at the article in the Times.*
 b. *The article in the Times angered/enraged Bill.*

As Pesetsky argues, (12b) has a causer subject, while in (12a) the PP introduces the object of the subject's emotion. Alexiadou and Iordachioaia tested the aspectual value of the OE verbs in (12) and showed that while (12a) is stative, (12b) is ambiguous between stative and change-of-state eventive readings.

First of all, as we see in (13), (12b) is compatible with manner adverbs and with event-selecting predicates like *take place*, while this is not the case with (12a):

- (13) a. *Bill was angry at the article in the Times (*quickly).*
*(*This took place yesterday.)*
 b. *The article in the Times angered/?enraged Bill quickly.*
This took place yesterday.

Second, the compatibility of these verbs with *in*-adverbials indicates that they are also telic, that is, they may express a change of state in a causative reading.

- (14) a. *The article in the Times angered/enraged Bill in ten minutes.*
 b. *The Chinese dinner satisfied Bill in ten minutes.*

On the basis of tests of this type, Alexiadou and Iordachioaia (2014) conclude that Pesetsky's observation can be explained if we assume that OE verbs as in (12b) are ambiguous between change-of-state and pure stative readings. In the former case, their subject is a causer, in the latter, however, it is an object of emotion like the PP-object of psych adjectives. However, in English psych verbs that are known to exhibit an OE-SE alternation (like (10) and (11)) do not have change-of-state readings, that is, English does not have the psych causative

alternation. Consequently, minimal pairs of alternating verbs cannot be constructed to test the ambiguity of their subjects and PP-objects as the authors did for Greek and Romanian.

One could argue then that the reason why English lacks the causative alternation in the psych domain is an accidental gap. However, if one looks at the diachrony of this verb class, the gap no longer seems accidental.

3 The diachrony of English psych verbs

It has been argued that English used to have the causative alternation at earlier stages of its history. This puzzle was mentioned also in Alexiadou and Iordachioaia (2014), who, however, did not offer a solution to it. Guidi (2011) and van Gelderen (2014) report a systematic alternation between OE and SE verbs in Old English just like the one Alexiadou and Iordachioaia report for Greek and Romanian. Guidi (2011, p. 39) observes that the SE forms either have no special morphology (as in (15a)) or are marked reflexively (as in (15b)), a marking that is subsequently lost in Old English. This is what we find in Greek, Romanian, Hungarian, and Polish.

- (15) a. *yrsode se casere for his ingange.*
 angered the emperor for his entrance
 ‘then the emperor got angry for his entrance.’
- b. *he gebealh hine*
 he angered him.ACC
 ‘He angered himself.’

Van Gelderen (2014) and Waltz (1997) show that OE verbs in Old English were causative verbs, and most importantly alternated like other causative verbs. Let us consider the arguments they present in some detail. To begin with, Garcia Garcia (2012) lists several causative psych-verbs in Old English and they are all object experiencer verbs: *a-hwænan* ‘vex, afflict’, *gremman* ‘enrage’, *a-byrgan* ‘anger’, *swencan* ‘harrass’, *a-brytan* ‘weary’, *wægan* ‘vex’, and *wyrdan* ‘annoy’.

Second, as van Gelderen stresses (2014, p. 107), “a verb with the meaning ‘to frighten’ has an inherent causative meaning. According to the OED, the Old English verb *fêran* ‘fear’ has its origin in a causative form **fêrjan*, a weak verb ‘to terrify’ that derives from the noun *fêr*.” This verb form contains the affix *-j-*, a productive causativizing affix used in general in Older Germanic languages and Old English. This affix was visible in, e.g., Gothic, but by the time of Old English it was no longer transparent. Van Gelderen (2011, 2014) and Ottoson (2009) argue that *-j-* causativization was still somehow productive in Old English, and I will agree with them. Importantly, however, when this evidence disappears, alternating verbs become increasingly labile in English (Old English is reported to have had 80 labile verbs; by contrast Modern English has ca. 800; see McMillion, 2006, and van Gelderen, 2014). I will come back to this issue. Thus we seem to have at least morphological evidence, of the type discussed in the recent literature, for other languages that psych verbs were causative.

In addition, as Gelderen and Waltz show, we find psych verbs in contexts that favor a change-of-state meaning. Consider the following examples, (16) is from Waltz (1997, p. 337), her (1), and (17) from van Gelderen (2014, p. 106) (her (9f)):

- (16) a. *Þa ofhreow ðam munecere Þæs hreoflian mænegelast.*
 then caused_pity the monk.DAT the leper's feebleness.NOM
 'then leper's feebleness caused the monk pity.'
- b. *se mæsseproest Þæs mannes ofhreow.*
 the priest.NOM the man.GEN pitied
 'the priest pitied the man.'
- (17) *Thus he shal yow with his wordes fere.*
 'Thus, he'll frighten you with his words.'

What we see in (16), as suggested by the translations, is, according to Waltz, the causative and anticausative use of the Old English verb *pity*. (17) shows that the verb *fear* could be accompanied with instrumental PPs, a characteristic property of causative verbs. However, none of these verbs alternate in Present Day English. The question is why.

This is indeed a very complicated pattern of change. First of all, lability cannot be argued to be one of the reasons that led to this change. Lability is offered as a speculation in van Gelderen (2014): according to her, the loss of the English psych causative alternation is related to the loss of overtly marked causative semantics, i.e., the *-j-* affix as mentioned above. As this change affected all types of predicates, i.e., both psych and non-psych causatives, it is initially puzzling that, while other verb classes developed labile intransitive variants (e.g., *sink*), psych predicates were for some reason incompatible with lability, and instead lost both their causative semantics, according to van Gelderen, and their ability to alternate altogether. In other words, why did only psych verbs become stative and not *sink* verbs? Most importantly, the behavior of Present Day psych verbs contradicts van Gelderen's conclusion. Transitive psych verbs can be change-of-state, at least some of them, but they simply do not have anticausative alternates.

What seems to be more relevant for the present day behavior is a combination of the following facts. First, according to van Gelderen (2014), many object experiencer verbs changed to subject experiencer predicates. For example, this is the case with *fear*, *loathe* and *relish*. While some authors have argued that this is due to the loss of case morphology, Allen (1995) and others have argued that this is not accurate. Van Gelderen shows that the object experiencer reading for, e.g., *fear* has disappeared by the 16th century, and speculates whether this is related to the presence of reflexives. As shown in (18), also her (18), during the Middle English period, the string *fear* + pronoun could be interpreted as an OE predicate or as a SE predicate:

- (18) a. *Thou wenyste that the syght of tho honged knyghtes shulde feare me?*
 'You thought that the sight of those hanged knights should frighten me?'
- b. *I feare me that sir Palomydes may nat yett travayle.*
 'I fear that Sir Palomydes may not yet travel.'

As is well known, a reflexive interpretation was available for pronouns in earlier stages of English, without the presence of *-self*. The use of *self*-forms as reflexive pronouns was established in early Modern English period; see van Gelderen (2000), and Vezzosi (2005) for some discussion and references. Crucially, however, once the personal pronoun cannot be interpreted as reflexive any longer, strings such as (18b) can only be interpreted as transitive predicates with an experiencer subject.

However, the most important observation discussed in van Gelderen (2014) is the fact that several present day psych verbs are borrowed either from other languages or language

internally from other verb classes. Van Gelderen lists the verbs that were involved. If we apply Levin's (1993) classification to these verbs, we see immediately that they do not belong to the class of change-of-state predicates. Van Gelderen (2014, p. 114) states the following:

It turns out that many of the current Object Experiencer verbs are loans, e.g. *anger* is a loan from Old Norse. Another source for renewal is through internal change and, in some cases, this use is quite recent, e.g. *worry* has the meaning of 'kill' in Old English and only appears with the meaning of 'to vex' in the 19th century.

The following observations are in order. With respect to *anger*, its meaning in Old Norse was *grieve* and akin to *strangle*; see below. With respect to the internal borrowing, van Gelderen (2014, pp. 115-117), building on Haspelmath (2001), observes the following. There is a class of verbs that changes from concrete to abstract meanings, for instance the verbs *fascinate* and *stun* originally mean 'to bewitch' and 'to deprive of consciousness or of power of motion by a blow', respectively. Other verbs that had a similar change are *worry*, *thrill*, *astonish*, and *grieve*. The verb *worry* meant 'to kill by strangling/compressing the throat' in Old and Middle English. The verb *thrill* meant 'to pierce'. The verb *astonish* meant something like 'to strike'. The verb *grieve* was borrowed from French with the meaning of 'to burden, harass'. As van Gelderen (2014) further observes, the changes were really gradual. "For instance, uses of *worry* and *grieve* with the meanings of 'strangle' and 'do bodily harm', respectively, occur till the 19th century" (ibid., p. 116).

Two remarks are in order here. First, the verbs that were reanalyzed as psych verbs are verbs of *hitting* and *killing*. These verbs take physically affected objects, which as van Gelderen, and references therein, notes, could also be seen as mentally affected too.

Second, and crucially for my discussion here, *hitting* and *killing* verbs do not undergo the causative alternation in English, even though they take both agent and causer subjects. These verbs are change-of-state, but the change-of-state event forces the presence of a direct causer that brings about the event. As Alexiadou, Anagnostopoulou, and Schäfer (2015) note, these events are conceptualized as involving a change of state that is brought about by some identifiable causer, and thus this must be introduced in the structure; see Rappaport Hovav (2014). From this perspective then, English psych verbs behave similar to other change-of-state predicates in the language that encodes a change of state that is necessarily brought about by an external argument.

The question that arises then is why Greek, Romanian, Hungarian, and Polish differ in this respect. Alexiadou, Anagnostopoulou, and Schäfer (2015) give a very detailed discussion of the properties that allow transitive change-of-state verbs to undergo the causative alternation. They point out that predicates that seem to belong to identical semantic classes across languages are not actually translation equivalents, a fact that should be taken into consideration.

Moreover, there is one important difference between these other languages and English, and a further one specifically between Greek and English: anticausative variants of causative verbs are marked, via reflexive morphology in Romanian and Polish, and non-active morphology in Greek. Alexiadou (2010) argues in detail that in languages such as Greek, where *hit* and *kill* verbs participate in the causative alternation, the anticausative alternates thereof always surface with special morphology. Alexiadou attributes this to the fact that there is a correlation between the ability of externally caused predicates to alternate in a language and the presence of special morphology on anticausative variants. Since English lacks this type of morphology, an intransitive variant of these predicates is not available. This type of morphology is associated with a Voice head labeled middle, and following Alexiadou and Doron (2012), it basically 'takes away' the requirement to project an external argument.

As stated specifically in Alexiadou (2014), English does not have a middle Voice head, and basically there is no other de-transitivization process in English other than the passive formation. Alexiadou (2014) further argues that even dispositional middles in English are formed on the basis of an active Voice head, basically following the analysis of these structures as unergatives.

Greek differs from Romanian/Polish in that several of its object experiencer verbs are alternating without the presence of special morphology. In fact, as Alexiadou (in press) observes, several psych verbs cannot combine with non-active morphology; see (19)-(20).

- (19) a. *o Janis thimose ti Maria.*
 the John angered the Mary
 ‘John angered Mary.’
- b. **i Maria thimothike (apo to Jani).*
 the Mary was.angered by the John
 ‘Mary was angered by John.’
- (20) **ponethike* ‘feel pain.NACT.3SG’
**tromahitike* ‘terrify.NACT.3SG’
**aidiastike* ‘disgust.NACT.3SG’

These verbs are built on the basis of special verbalizing morphology, e.g., *-az-* or *-on-*. These Greek affixes are very productive and are used to verbalize a root/adjective (see Giannakidou and Merchant 1999; Alexiadou 2001, 2009; Anagnostopoulou and Samioti 2014; Alexiadou and Lohdal in press for further references). Some examples from the non-psych domain are given in (22).

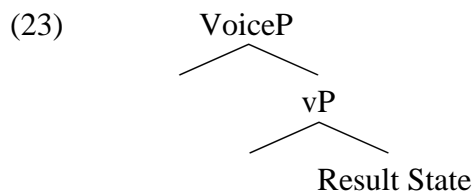
- (21) *-iz-, -on-, -en/an-, -ev-, -az-, -a* (Alexiadou 2001, 2009)
- (22) a. *aspr-iz-o kathar-iz-o* b. *pag-on-o ler-on-o*
 ‘whiten’ ‘cleaned’ ‘freeze’ ‘dirty’
- c. *diaplat-en-o arost-en-o* d. *sten-ev-o berd-ev-o*
 ‘widen’ ‘become sick’ ‘tighten’ ‘confuse’
- e. *diav-az-o mir-az-o* f. *pul-a-o xal-a-o*
 ‘read’ ‘split, share’ ‘sell’ ‘destroy’
- (Anagnostopoulou and Samioti, 2014, p. 96)

These affixes are taken to realize *v*, and bring about event implications, i.e., they instantiate a change-of-state structure; see Alexiadou and Lohndal (in press) for further discussion. If van Gelderen (2014) is correct in her explanation about valency changes in the history of English, according to which English lost this particular causativizing structure, we have a further piece to understand the complex issue of the lack of the causative alternation in English.

From this perspective then, the reasons that led to the present day situation can be summarized as follows. First, several OE verbs change to SE verbs, without an OE alternate. These new SE verbs are stative predicates, as van Gelderen (2014) states, i.e., a reanalysis of little *v* has taken place. Second, new OE verbs enter the language but from verb classes that do not participate in the causative alternation to begin with. Third, English does not morphologically mark its alternating verbs. If Alexiadou’s (2010) generalization is right that externally caused change-of-state verbs alternate in languages with Voice morphology, then English simply is not that type of language. Finally, Greek has productive causativizing

morphology, used in the formation of psych verbs, which, according to van Gelderen (2014), English lost. All these factors thus conspire so that English OE verbs no longer alternate.

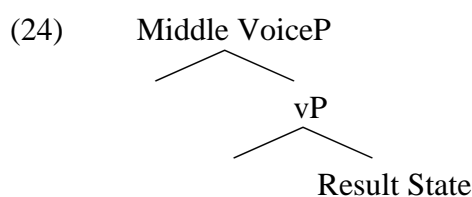
Let us then see how especially the third and the fourth reason contributed to this change. (23) below represents the structure assumed for change-of-state verbs in Alexiadou, Anagnostopoulou, and Schäfer (2015):



In (23), *v* introduces event implications, and the combination of *v* and the result state component leads to a causative interpretation (see also Ramchand, 2008). The result state component could be either a small clause or simply a root. It is this causative component that is present in both causatives and anticausatives and licenses causer PPs.

The productive Greek affixes that are considered *v* heads precisely realize *v*. Van Gelderen's proposal is that in the context of psych verbs of the *fear* type eventive *v*, realized as *-j-*, got reanalyzed as a stative *v* in the case of the reanalysis of object experiencer verbs. Thus for this group of predicates, the structure in (23) is no longer available.

With respect to the borrowed verbs, either from other languages or other verb classes, though (23) might in principle be available for the transitive verb, an intransitive variant is no longer available because of the following reasons: anticausatives with special morphology in languages that have them, e.g., Greek, Romanian, and Polish are possible because these employ Middle Voice, a special Voice head that does not project an external argument and basically carries special morphology which is a morphological spell-out of the structure that lacks an external argument. As English lost reflexive marking and developed reflexive pronouns that cannot really be analyzed as reflexes of 'Middle' morphology, an alternation is not available. The structure assumed for Greek, Romanian and Polish, and presumably also Hungarian, Middle Voice is represented in (24):



Greek has productive eventive affixes, thus the evidence for eventive *v* is very visible in the language. Those Greek OE predicates that do not take special morphology in the intransitive variant basically do so, because for them Voice is never projected in the intransitive variant, i.e., only the *vP* and result state components are present in the structure. The smaller structure that can give a causative interpretation, in the sense of containing a causative component is the one without Voice. This is exactly how anticausative predicates from the de-adjectival domain behave in Greek as well.

Crucially then, the *vP*-result state component is an important building block in the context of the causative alternation. Support that this component is crucial for change-of-state verbs to alternate comes from Hungarian, as described by Jurth (2016), who studies OE-SE alternations in Hungarian that come in two types. In both the SE variant bears morphology associated also with anticausative predicates. According to Jurth, the first type includes

predicates that contain a verbal particle, while the second one includes predicates that lack a verbal particle. Only the former have a complex event structure and allow the causer to be expressed in the ablative in the SE form; the latter group lacks a complex event structure, and although the SE variant bears special morphology, they show an atelic behavior, i.e., they are not change-of-state verbs. This clearly shows how properties of the lower structure in (23) are relevant to understand the causative alternation in both the psych and the non-psych domain.

4 Conclusions

As mentioned in the introduction to this paper, the changes that affected the English psych verbs constitute the best example of a lexical change, which presumably happened independently of functional changes, though it seems to be related to at least two of those. The first one relates to the changes affecting little *v*, and the second one relates to the changes in the Voice system of English. Nevertheless, a major reason that contributed to the unique properties of the English system relates to borrowing from verb classes that do not participate in the alternation. As a result of these two factors, a lexical and a functional one, English psych verbs do not behave similarly to their cognates in other languages.

The behavior of English psych verbs shows how synchronic properties can be better understood from a diachronic perspective. While diachronic changes are often rather complex, they do follow certain non-arbitrary paths.

References

- Alexiadou, A. (2001). *Functional structure in nominals*. Amsterdam: John Benjamins.
- Alexiadou, A. (2009). On the role of syntactic locality in morphological processes: The case of (Greek) nominals. In A. Giannakidou and M. Rathert (Eds.), *Quantification, definiteness and nominalization* (pp. 253-280). Oxford: Oxford University Press.
- Alexiadou, A. (2010). On the morpho-syntax of (anti-)causative verbs. In M. Rappaport Hovav, E. Doron, and I. Sichel (Eds.), *Syntax, lexical semantics and event structure* (pp. 177-203). Oxford: Oxford University Press.
- Alexiadou, A. (2014). Active, middle, and passive: The morpho-syntax of Voice. *Catalan Journal of Linguistics*, 13, 1-22.
- Alexiadou, A. (in press). Able adjectives and the syntax of psych verbs. *Working papers of the SFB 732 Incremental specification in context*. University of Stuttgart.
- Alexiadou, A., Anagnostopoulou, E., and Schäfer, F. (2006). The properties of anticausatives cross-linguistically. In M. Frascarelli (Ed.), *Phases of interpretation* (pp. 187-212). Berlin: Mouton de Gruyter.
- Alexiadou, A., Anagnostopoulou, E., and Schäfer, F. (2015). *External arguments in transitivity alternations: A layering approach*. Oxford: Oxford University Press.
- Alexiadou, A. and Doron, E. (2012). The syntactic construction of two non-active voices: passive and middle. *Journal of Linguistics*, 48, 1-34.
- Alexiadou, A. and Iordachioaia, G. (2014). The psych causative alternation. *Lingua*, 148, 53-79.

- Alexiadou, A. and Lohndal, T. (in press). On the division of labor between roots and functional structure. In R. D'Alessandro, I. Franco, and Á. Gallego (Eds.), *The verbal domain*. Oxford: Oxford University Press.
- Allen, C. (1995). *Case marking and reanalysis*. Oxford: Oxford University Press.
- Anagnostopoulou, E. (1999). On experiencers. In A. Alexiadou, G. Horrocks, and M. Stavrou (Eds.), *Studies in Greek syntax* (pp. 67-93). Dordrecht: Kluwer.
- Anagnostopoulou, E. and Samioti, Y. (2014). Domains within words and their meanings: A case study. In A. Alexiadou, H. Borer, and F. Schäfer (Eds.), *The syntax of roots and the roots of syntax* (pp. 81-111). Oxford: Oxford University Press
- Arad, M. (1998). Psych-notes. *UCL Working Papers in Linguistics*, 10, 203-223.
- Bialy, A. (2005). *Polish psychological verbs at the lexicon-syntax interface in cross-linguistic perspective*. Peter Lang: Frankfurt am Main.
- Belletti, A. and Rizzi, L. (1988). Psych-verbs and theta-theory. *Natural Language and Linguistic Theory*, 6, 291-352.
- Croft, W. (1991). *Syntactic categories and grammatical relations*. Chicago: University of Chicago Press.
- García García, L. (2012). Morphological causatives in Old English. *Transactions of the Philosophical Society*, 110, 122-148.
- van Gelderen, E. (2000). *A history of English reflexive pronouns*. Amsterdam: John Benjamins.
- van Gelderen, E. (2011). Valency changes in the history of English. *Journal of Historical Linguistics*, 1, 106-143.
- van Gelderen, E. (2014). Changes in psych verbs: A reanalysis of little v. *Catalan Journal of Linguistics*, 13, 99-122.
- Giannakidou, A. and Merchant, J. (1999). Why Giannis can't scrub his plate clean: On the absence of resultative secondary predication in Greek. In A. Mozer (Ed.), *Greek Linguistics '97: Proceedings of the 3rd International Conference on Greek Linguistics* (pp. 93-103). Athens: Ellinika Grammata.
- Grimshaw, J. (1990). *Argument structure*. Cambridge, MA: MIT Press.
- Guidi, L. G. (2011). Old English psych verbs and quirky experiencers. *York Papers in Linguistics Series 2*, 11, 29-48.
- Haspelmath, M. (2001). Non-canonical marking of core arguments in European languages. In A. Aikhenvald, R. Dixon, and M. Onishi (Eds.), *Non-canonical marking of subjects and objects* (pp. 53-83). Amsterdam: John Benjamins.
- Iwata, S. (1995). The distinctive character of psych verbs as causatives. *Linguistic Analysis*, 1-2, 95-120.
- Jurth, R. (2016). On alternating experiencer verbs in Hungarian. (Master's thesis). University of Stuttgart and University of Debrecen.
- Landau, I. (2010). *The locative syntax of experiences*. Cambridge, MA: MIT Press.
- Levin, B. (1993). *English verb classes and alternations*. Chicago: University of Chicago Press.
- Levin, B. and Rappaport Hovav, M. (1995). *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: MIT Press.

- McMillion, A. (2006). *Labile verbs in English*. (Doctoral dissertation). Stockholm University.
- Ottosson, K. (2009). *The anticausative and related categories in the Old Germanic languages*. (Master's thesis). University of Oslo.
- Pesetsky, D. (1995). *Zero syntax*. Cambridge, MA: MIT Press.
- Rappaport Hovav, M. (2014). Lexical content and context: The English causative alternation revisited. *Lingua*, 141, 8-29.
- Ramchand, G. (2008). *Verb meaning and the lexicon: A first phase syntax*. Cambridge: Cambridge University Press.
- Reinhart, T. (2002). The theta system – An overview. *Theoretical Linguistics*, 28, 229-290.
- Roberts, I. (2007). *Diachronic syntax*. Oxford: Oxford University Press.
- Rozwadowska, B. (2005). A new perspective on event participants in psychological states and events. In H. Broekhuis, N. Corver, R. Huybregts, U. Kleinhenz, and J. Koster (Eds.), *Organizing grammar. Linguistic studies in honor of Henk van Riemsdijk*. Berlin: Walter de Gruyter.
- Schäfer, F. (2009). The causative alternation. *Language and Linguistics Compass*, 3(2), 641-681.
- Vezzosi, L. (2005). The development of 'himself' in Middle English: A Celtic hypothesis. In N. Ritt and H. Schendl (Eds.), *Rethinking Middle English: Linguistic and literary approaches* (pp. 228-243). Peter Lang: Frankfurt am Main.
- Waltz, H. (1997). Causative psych verbs in the history of English. In I. Rauch and G. F. Carr (Eds.), *Insights in Germanic linguistics II: Classic and contemporary* (pp. 337-43). Berlin: Mouton de Gruyter.

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