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Voice phenomena

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Summary

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- 3-18 **Bartra, Anna** (Universitat Autònoma de Barcelona. Departament de Filologia Catalana i Centre de Lingüística Teòrica)
Voice phenomena: how many properties behind this label? *Catalan Journal of Linguistics*, 2014, vol. 13, pp. 3-18.

Articles

- 19-40 **Alexiadou, Artemis** (Universität Stuttgart)
Active, middle, and passive: the morpho-syntax of Voice. *Catalan Journal of Linguistics*, 2014, vol. 13, pp. 19-40.

This paper is concerned with the variation found with respect to how languages morphologically mark argument structure (AS) alternations, a variation that I take to be related to the realization of the syntactic Voice head. The paper discusses the behavior of dispositional middles and reflexives in languages such as English as opposed to their Greek counterparts. I will pursue the hypothesis that there are three Voice related heads implicated in AS alternations across languages. Active Voice is involved in the structure of all transitive and unergative predicates across languages, which in English subsumes d. middles and reflexives. Passive Voice, which the paper will only briefly touch upon here, takes as an input a transitive structure and gives an English/German/Hebrew type passive. Middle Voice is the non-active counterpart of Kratzer's active Voice and gives rise to reflexives, passives and dispositional middles in Greek type languages.

Keywords: Voice; dispositional middles; reflexives; anticausatives; Passive; Middle; unergative; unaccusative; by-phrase.

- 41-77 **Bosque, Ignacio** (Universidad Complutense de Madrid)
On Resultative Past Participles in Spanish. *Catalan Journal of Linguistics*, 2014, vol. 13, pp. 41-77.

A large part of the theoretical literature on Spanish Past Participles (PPrts) has focused on the *Aktionsarten* restrictions that these items exhibit in absolute clauses and verbal periphrases. This paper addresses the somehow neglected relationship that holds between grammatical and lexical aspect in the grammar or PPrts. Resultative PPrts (R-PPrts) are opposed to eventive PPrts (E-PPrts), following Kratzer, Embick, Gehrke, McIntyre, and other authors, and their meaning is shown to be a consequence of the interaction of voice and perfect features. Differences in the temporal interpretations of R-PPrts follow from the ways in

which the perfect (abstract HAVE) which they incorporate is interpreted. These PPrtS—which are shown to be verbal, rather than adjectival categories—are further divided in two aspectual classes. In addition to this, two interpretations of the concept ‘result’ are compared, and argued to make different predictions as regards the grammar of PPrtS: one is based on the notion ‘change of state’; the other one stands on the concept of ‘perfectivity’.

Keywords: past participle; perfect; tense; passive; lexical aspect; Spanish.

- 79-98 **Gavarró, Anna** (Universitat Autònoma de Barcelona. Departament de Filologia Catalana); **Heshmati, Yalda** (Columbia University. Teachers College)

An investigation on the comprehension of Persian passives in typical development and autism. *Catalan Journal of Linguistics*, 2014, vol. 13, pp. 79-98.

Autism Spectrum disorders have attracted the attention of many researchers working on communicative and pragmatic competence, but much less attention has been paid to the investigation of narrow syntax in this condition. On the other hand, in the field of acquisition, passive sentences (and related constructions) are known to be a late acquisition, and have been argued to be a case of late maturation. In this paper we report results on the comprehension of passive sentences in Persian-speaking children with typical development and with Autism Spectrum Disorders. In our findings, not all ASD children perform in the same way, rather those considered to be high-functioning perform like the typically developing, and the low-functioning have a clearly poorer performance. These results shed some light on former studies (Perovic et al. 2007, Terzi et al. 2014), with seemingly inconsistent results due to the fact that heterogeneous populations were tested.

Keywords: passives; comprehension; acquisition; Autism Spectrum Disorders; Persian.

- 99-122 **van Gelderen, Elly** (Arizona State University. Department of English) Changes in Psych-verbs: A reanalysis of little v. *Catalan Journal of Linguistics*, 2014, vol. 13, pp. 99-122.

The present paper examines *psych*-verbs in the history of English. As is well-known, object experiencers are reanalyzed as subject experiencers in many of the modern European languages. I discuss one such change in detail, namely the change in the verb *fear* from meaning ‘to frighten, cause to fear’ to meaning ‘to fear’. The reason for the change may be the loss of the morphologically overt causative and a change in the set of light verbs. Object experiencers are constantly lost but I show there is also a continual renewal through external borrowing and internal change from physical to mental impact. A last change I discuss is the one where Subject Experiencers are reanalyzed as Agents in a V(oice)P.

Keywords: *psych*-verb; experiencer; agent; causative; reanalysis; little v.

Voice phenomena: how many properties behind this label?

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1. Why are Voice phenomena worth studying?

Speakers' intuitions, philosophical categories and traditional grammars have long considered some types of sentences, namely passives and middles, as the reversed or semantically synonymous mirror image of another construction type, namely active sentences. As soon as by Aristotle, *pathos* was proposed as a category that represented a way of approaching the relationship between participants in a situation or event. In the Romance tradition, grammarians tried to found equivalent forms for the Latin passive and middle paradigms, and considered the periphrastic *be*-Passive translations as functional and categorical equivalents. But the mismatches between meaning and formal properties, as well as the inadequacy of reproducing the categories of Latin grammar into Romance descriptions, were very soon apparent to grammarians. To illustrate the point, let us remember that Nebrija refused, on morphological grounds, to accept the existence of a passive voice in Spanish.¹ Two centuries later, Bello also warns about the usual temptation of translating Latin categories, morphologically supported, to Spanish, where the morphological basis does not exist². In current frameworks where semantics reads off the output structures of the syntactic component within a strict homomorphism, mismatches such as two different –but related– structures being the input for the same semantic representation have always been a challenge. Therefore, in all stages of the theory the focus has been swinging between the two poles: the attempt

1. El latín tiene tres voces: activa, verbo impersonal, pasiva; el castellano no tiene sino sola el activa. El verbo impersonal súplelo por las terceras personas del plural del verbo activo del mismo tiempo y modo, o por las terceras personas del singular, haciendo en ellas reciprocación y retorno con este pronombre se; [...]. La pasiva súplela por este verbo soy, eres y el participio del tiempo pasado de la pasiva misma, [...]. «*Latin has three voices; active, impersonal verb, passive; Spanish has only the active one. The third person plural or the third person singular with the pronoun se substitute for impersonal verbs [...]*» (my translation) (Nebrija, 1492, Cap XI).
2. Si como fue el latín el tipo ideal de los gramáticos, las circunstancias hubiesen dado esta preeminencia al griego, hubiéramos probablemente contado cinco casos en nuestra declinación en lugar de seis, nuestros verbos hubieran tenido no sólo voz pasiva, sino voz media, y no habrían faltado aoristos y paulo y post futuros en la conjugación castellana.» (Bello, 1891: Introducción).

to account for speaker's intuition –recently in the form of the Θ -Criterion, for instance– and the requirements of simplicity and elegance of the theory³.

The relevant question, one that can not be answered in the few lines of these introductory remarks, and which can be considered a sort of research program, is the following: is the speakers' intuition of a semantic equivalence between active and passive sentences⁴ a linguistic property to be accounted formally for or rather is it an interpretive epiphenomenon that loses its sense as soon as we decompose passive sentences in its formal components and properties? As the recent evolution of grammar shows and the papers inside this volume reflect, voice phenomena can be addressed from different perspectives, each one permitting to go a step further in our knowledge of the formal properties involved in them. The basic aim in this volume is to try to discover a little bit more about this intriguing property of languages: the fact that different structures, made up with the same lexical elements but with different functional categories and formal features, express the same event.

2. Deconstructing the components of Voice. A quick overview

As has been extensively discussed in the literature, many languages exhibit a number of nearly similar constructions «some of which are fairly close to the passive and others further away from it»⁵. Any research on Voice and Passive tries to disentangle the many properties implied in passives, middles and related constructions. The first point of disagreement concerns the defining property that characterizes non-active sentences. From one side, the label *passive* (together with the *passivization rule* of some versions of the grammatical theory) seems to highlight the property of raising the PATIENT /THEME to the canonical subject position. From another point of view, the elimination of the AGENT and the subsequent impersonal value is the common property of short and long passives, Romance pronominal passives, middles, and absolute participial constructions. Therefore passive sentences and related structures are viewed as a way to *demote* the agent, to transform an event where the AGENT is overt or present in a way or another to a structure where it is missing (Lyngfelt and Solstad, 2006).

As for periphrastic passives, the two verbal components, the copular verb BE⁶ and the Past Participle, are independently found in copular sentences, absolute constructions and noun phrases, a fact clearly questioning about the core properties of passive. For instance, many researchers have put the emphasis on the common properties shared by passives and copular structures (Brucart, 1990 developing

3. See for instance Benveniste 1950/1966, 168: «La distinction de l'actif et du passif peut fournir un exemple d'unes catégories verbale propre à dérouter nos habitudes de pensée: elle semble nécessaire –et beaucoup de langues l'ignorent; simple –et nous avons grande difficulté à l'interpréter; symétrique –et elle abonde en expressions discordantes.
4. We leave aside for the moment the important middles. For the present general purposes middles align with passives.
5. Solstad & Lyngfelt 2006: 4.
6. We represent as BE in small caps all copular verbs that acts as auxiliaries in passive sentences, such as Romance descendants of ESSE, German *werden* and so on.

the insights about small clauses in see 1981). Structuralist and distributionalist analyses highlighted the parallelism between copular and passive sentences, but only scarcely were they put in the same group.⁷ Given the difficulties to draw a sharp division between lexical and functional elements based on formal properties, it has been recognized that there is a scale in the property of being functional to lexical (Corver & Van Riemsdijk 2001). Copular verbs are sometimes considered functional, sometimes lexical and most often a category halfway between the two poles. A study of the very nature and the properties of the verb BE is obviously outside the goals of this volume, but it is nonetheless a cornerstone in the analysis of passive sentences (Moro, 2000; Mikkelsen, 2005; den Dikken, 2006).

Past Participles (from now on PPrts), on the other hand, clearly manifest passive properties: they agree with their internal argument:

- (1) Destruída la ciudad, la reina se suicidó
 destroy-PP.Fem.Sg the-Fem.Sg city the-Fem.Sg queen SE_{Pron.3.Sg.Refl} suicide_{Past.3.sg}
 ‘Once the city was destroyed, the queen suicided’

Moreover, the relationship between perfectivity and voice has been established long ago. Benveniste’s 1952/1966 seminal work has shown that perfect, passive and possession are categories often difficult to dissociate, more precisely, that in some languages the perfect with a genitive complement is a possessive construction close to a passive and equivalent to a transitive active construction; «*eius factum est operam*» is equivalent in Armenian to «*habet factum*». Interestingly enough, the perfect selects a genitive phrase denoting the AGENT/POSSESSOR of the object. This could mean that there is (a kind of) syncretism between possessors and agents in the perfect. This construction is alive in many languages, as the example in (2), a (stative) passive from Catalan, reflects:

- (2) Aquestes aspirines són fetes de la Bayer.

And what about middles? Following again Benveniste, the distinction stems from Pānini, who distinguishes the word ‘by another one’ from the form ‘by itself’. Benveniste also highlights the importance of lexical properties in the voice possibilities of verbs, but states clearly that verb classes are not to be drawn *exclusively* from a simplistic semantic point of view, but that the entire lexical structure has to be taken into account, focusing on the relationship between the subject and the verb. If we consider middle as a unitary category, defined by properties as the ones listed in (3), Romance and Germanic languages differ in the morphosyntactic properties involved.

- (3) a. The subject bears the internal Theta role.
 b. No Agent can be overt in the structure.
 c. Middles have a generic and/or deontic interpretation.

7. See Alarcos (1973).

Whereas in English middles seem to be a lexical alternate of the transitive version, as we see in (4a), Romance ones have a morphological exponent, the reflexive pronoun *se* (4b/c), the same element found in some unaccusative structures (4d), and in reflexive constructions (4e):

- (4) a. This screen cleans easily.
 b. Esta pantalla se limpia fácilmente.
 c. Normalmente los políticos se corrompen.
 d. El vaso se rompió.
 e. Juan se maquilló.

Middles have to be distinguished from unaccusatives and from passives taking into consideration the argument structure, functional projections and the (possible) empty categories involved. Middles do not express the agent because it receives a generic unspecific interpretation. However, in a sentence like (4a) an AGENT is interpreted. Instead, in an unaccusative structure no agent is interpreted, as the ungrammaticality of (5) shows:

- (5) *This screen cleans easily in order to preserve it.

We cannot report here the amount of literature devote to middle constructions in the last twenty years (see Keyser & Roeper, 1984; Hoekstra & Roberts, 1993; Hale & Keyser, 1986; Mendikoetxea, 1999, 2012 ; Stroik 1999 among others, and references therein).

In Romance languages, middles are (at least apparently) related to pronominal passives.

Romance pronominal passives share with middles the property of not admitting Agent PPs.⁸ From the eighties on, the analysis of pronominal passive constructions has also focused on the way they obey Burzio's generalisation and how their functional projections interact with the pronoun and the internal argument to achieve agreement and Case relations (Burzio, 1982; Belletti, 1982; Manzini, 1986; Cinque 1988). Within the Minimalist Program, the properties of the Romance (reflexive, impersonal, middle and passive SI/SE) have received a fine-grained analysis in work like D'Alessandro, 2004, which establishes new proposals on crucial aspects like the phasehood of *v* or the defectiveness of agreement.

Functionalist perspectives have put the focus on the discourse differences of the different voices. So, passives can be seen as a way to topicalize the internal argument together with, as we mentioned before, the demotion or disappearance of the agent. But, what is the role of the Agent in long passives if passivisation is

8. A special case is constituted by legal language, where two factors conspire in favour of the maintenance of Agent PPs: the conservative use of language and the intention to make clear the subject of legal responsibility, as in *Los proyectos de ley se aprueban por el Consejo de Ministros* ('Law projects are approved by the Ministers Assembly') [<http://www.periodistasparlamentarios.org/?p=926>]

a way to elide the agent? Since passive sentences are a way to ‘demote’ the agent, the Agent PP –if present– receives a discourse-focus interpretation:

- (6) The cyclist was run over *by a drunk driver*.

In active sentences subjects are usually interpreted as topics; the PP in a long passive is a way to focalize the agent. This situation is congruent with the interpretation that adjuncts receive in general:

- (7) John broke the window *with a hammer*.

In (7), the focused element is *with a hammer*. In (8), the focused elements can be *with a hammer* or *to avoid suffocation*, depending on the context and pragmatic factors:

- (8) John broke the window *with a hammer to avoid suffocation*.

In some cases, this standard interpretation of the Agent PP comes into a conflict with the fact that the Agent PP seems to be obligatory. Why is it that with some verbs short passives are ungrammatical, but long passives are grammatical? The contrast arises with verbs of ‘doing’: verbs of construction and creation:

- (9) a. This house was built / designed/ constructed *(by a French architect)
 b. *Tomatoes are grown; The best tomatoes are grown *(by organic farmers)
 c. This house was built yesterday / in ten days / in a bad part of the town / only with great difficulty
 d. (The best) tomatoes are grown in Italy / organically

As can be seen in (8c/d), the Agent PP is not the only possibility available to rescue the sentence: other adjuncts such as locative, temporal or modals are too.

As first pointed out by Grimshaw & Vikner (1993)⁹, the problem with the bad strings in (9) is restricted to passive sentences built with certain verbs, namely a subset of accomplishment verbs; therefore the contrast is related to the event structure of the verbs. Following Grimshaw & Vikner (1993), these verbs have a two place event structure: the process and the (final) state or result. The agent licenses the process, whereas the theme licenses the (resulting) state. Since the passive erases the agent, if there is no Agent expressed as a PP, the process part of the change of state event cannot be licensed. The authors draw as a first consequence from their analysis the need to separate argument structure from aspect/event structure. Secondly, themes must be divided in subsets, because only a subset of the change of state verbs behaves like the ones in (9); creation verbs need an APP in the passive, but not destruction verbs:

9. The examples in (5) are taken from this work, also.

- (10) a. The parliament has been destroyed (by the enemy's weapons).
 b. John was murdered.

As a third consequence, these facts are incompatible with the analyses of the 'absorption' of the agent Theta role by a morphological element, like the Past Participle morpheme *-en*, as in Jaeggli (1986) and Baker & al. (1989)¹⁰, since if this were the case, short passives would be always grammatical, contrary to data. The restrictions do not only affect standard be-passives; prenominal participles give also ungrammatical phrases without a determiner:

- (11) a. ??a photographed building / a grown tomato.¹¹
 b. a much-photographed building/a locally-grown tomato.

As mentioned before, not only APPs rescue these constructions, but also aspectual prefixes, adverbs, among other modifiers:

- (12) *a built house, a rebuilt house, a recently built house.^{12, 13}

Another point of contact can be established between passive and copular sentences. Chomsky (1981: 117 and ff.) established a scale between the categories 'full verbal' and 'full adjectival', mainly to obtain descriptive adequacy for the properties of verbal passives, lexical passives and copular sentences. With the binary-feature categorization of lexical elements, full verbs were considered to be [+V, -N], The Past Participles of passive sentences categories were [+V], a neutralized category with the [-N] feature missing. The predicates of lexical passives and copular sentences, being full adjectives, were [+V, +N]. Lexical passives are highly idiosyncratic, following Chomsky, and have a stative interpretation alike to copular sentences.

In many languages, the difference between lexical and syntactic passives manifests / shows up in the selection of different auxiliaries. In German, the eventive passive is constructed with *werden*, and the lexical passive with *sein*:

- (13) a. Die Reifen werden aufgepumpt.¹⁴
 the tires become up-pumped.
 'The tires are being inflated.'
 b. Die Reifen sind aufgepumpt.
 the tires are up-pumped.
 'The tires are inflated.'

10. See below.

11. Examples from Grimshaw & Wikner (1993: 152).

12. Ibid.

13. For a hypothesis on the prefix *re-* and its influence on the syntactic properties of the VP, see Keyser & Roeper (1992).

14. From Gehrke (2011), available at <http://parles.upf.edu/llocs/bgehrke/home/adjpass-paris11.pdf>

Some Romance Languages make a distinction between passives and copular sentences on one hand, and lexical stative / result passives on the other, as for auxiliary verbs:

- (14) a. Las paredes *son* pintadas anualmente¹⁵ (SYNTACTIC PASSIVE)
the walls are painted yearly
‘The wall are being painted every year’
- b. Las paredes *son* verdes (COPULAR SENTENCE)
‘The walls are green’
- c. Las paredes *están* pintadas / *despintadas* / *inacabadas* (LEXICAL PASSIVE, RESULTATIVE MEANING)
‘The walls are painted’

As the prefixed Past Participles in (14c) show¹⁶, in these varieties lexical resultative passives are clearly set apart from adjectival copular sentences.

Departing from Chomsky (1981), subsequent research has highlighted the role of aspectual projections in the facts depicted in (14).

Summing up, voice phenomena pose a challenge to any theory that postulates the semantic interpretation to be constructed with the syntactic structures as input. Also, some features of constructions in which some version of Voice is involved are shared by other types of constructions. All this facts make especially interesting to try to single out the defining properties and the limits of voice phenomena.

3. A first step: the traditional grammar’s heritage: phrase structure rules and transformations.

From the very beginning of formal linguistics theories, the challenge has been to account for the rules or mechanisms that connect syntactic representations to semantic representations. Even if the theoretical frameworks have clearly evolved during the last few decades, the general picture has remained unchanged, namely the idea that syntactic representations are the input to Semantic Interpretations. Since a mechanism is needed, «We are concerned with a special case of recursive procedures, generative grammars G_i , each of which enumerates a set of hierarchically structured expressions, assigning to each a symbolic representation at two interfaces, the sensorimotor interface SM for external realization ER and the con-

15. Eventive passives with the verb in Present are rather marginal in Spanish and Catalan, but this issue is outside the scope of the present work.

16. See the ungrammatical strings in (i) and (ii):

- (i) ??Han despintado las paredes
have_{PRES.3.PL} unpainted the_{FEM.PL} walls
‘They have “unpainted” the walls’
- (ii) *Han inacabado las paredes
have_{PRES.3.PL} *unfinished the_{FEM.PL} walls
‘They have *unfinished the walls’

ceptual-intentional interface CI for what is loosely termed thought: interpreting experience, reflection, inference, planning, imagining, etc. In this respect each Gi can be regarded as an instantiation of the traditional Aristotelian conception of language as sound with meaning (though sound is now known to be only a special case of ER).» (Chomsky 2014: 2) the intuitively recognized relation between actives on one side, and passives and middles on the other must still receive a clear-cut explanation. The universally accepted assumption has been that active and passive are semantically equivalent, at least with reference to the thematic and lexical content. Discourse related properties did not receive attention at all in the first stages of generative grammar, being attributed to the periphery of the grammar; therefore, the fact that active and passive sentences could differ in this respect was not addressed.

Following traditional grammars, then, passive sentences were considered a transformed mirror image of the active one. In a framework in which all types of sentences had to be generated by the grammar, Chomsky (1957: 43) explicitly argued that passive sentences are not part of the kernel of grammar. Rather phrase structure rules generated active sentences and a transformation reversed the order of NPs and introduced the verb *be* and the *P by*. A transformation of the form in (1) related the sentence in (2a) with one in (2b):

(15) If S1 is a grammatical sentence of the form

NP1 – Aux – V – NP2

Then the corresponding string of the form

NP2 – Aux + *be* + *en* – V – *by* + NP1

is also a grammatical Sentence

(16) a. John – C – admire – sincerity

b. sincerity – C + John + *en* – admire – *by* + John

The first attempt to restrict the overgenerating rule of passive formation came along with the refining of verb classes. Since a clear correlation can be established between verbs that accept a Manner complement and verbs that can passivize (i.e.: agentive verbs), a base rule introducing the Manner Adverbial was in fact the trigger of the possibility that the Passive transformation could apply. The Manner Adverbial «should have as one of its realizations a «dummy element» signifying that the passive transformation must obligatorily apply.» (Chomsky 1965: 103-104). This means that a phrase structure rewriting rule as (3a) triggers the transformation once implemented as in (3b):

(17) a. Manner → *by*Passive

b. NP – Aux – V – ... – NP – ... – *by*Passive – ...

This was the first step in the path to dispense with ad hoc rules restricted to specific sentence types. The facts in (18)- (19) were now accounted for:

(18) The verbs that allow the Passive transformation also allow for a Manner Adverbial. This class of verbs are agentive verbs.

(19) Passives are not restricted to transitive verbs:

- a. John is looked up to by everyone.
- b. The boat was decided on by John.

The paradigm changed dramatically in the Principles and Parameters Theory. Two theoretical constructs passed away at the same time: rules and labels such as «passive sentence», «relative sentence» as names of specific constructions. ‘Sentence types’, like passive or relative, began to be considered traditional labels for a bunch of properties, this is to say epiphenomena. Rules were made more general and abstract, approaching the rule *Move- α* .¹⁷ *Move α* is a general rule obeying several constraints, mainly restrictions on the trace or variable left behind by the category that is being moved and on the landing site of the category. In the case of passives, the moved element reaches an A-position which has to be empty in order to avoid a θ -Criterion violation. The motivation for the NP to move is the inability of passive verbs (together with unaccusatives) to assign Structural Accusative Case due to the categorical specification of Passive Participles as [+V], lacking the [-N] feature, the one responsible of the assignment of (Accusative) Case. The correlation between the lack of Accusative assignation to the internal argument and of θ -role to the subject, known as *Burzio’s generalization*, is reproduced in its original form (Burzio 1986: 185) in (4), where A stands for ‘Accusative’ and θ S is transparent:

(20) θ S \leftrightarrow A

The facts that could be related in the P & P framework are the ones in (21) to (25):

(21) Thanks to Burzio’s correlation and the analysis of *Move α* in order to pass the Case Filter, passives are similar to the structures with unaccusative verbs.

(22) The rule moving the NP internal argument to subject position –*Move α* – is identical to and is triggered by the same facts that account for the sentence

John_i seems [t_i to be intelligent].

(23) Given the characterization of lexical categories based on the two features [+/-V] and [+/-N], similar structures can be obtained by a syntactic operation or in the lexicon, i. e., syntactic passives and lexical ones. In the latter ones, a (morphologically complex) lexical element assigns an ‘internal’ θ -role to its subject, as in

Antarctica is uninhabited.

17. «The notions ‘passive’, ‘relativization’, etc., can be reconstructed as processes of a more general nature, with a functional role in grammar, but they are not ‘rules of grammar’» (Chomsky, 1981: 7).

- (24) Passives with a sentential internal argument have the same explanation except for the fact that the sentence can remain in situ and an expletive element is inserted in the subject position which has no θ -role assigned to:

It was believed that the conclusion was false

- (25) Passivization is not restricted to the categorial status [+V] of the past participle. Passive morphology, as in Latin, Hebrew, and other languages can also inhibit the assignment of Accusative Case. Also pronominal passives from Italian or Catalan can be explained the same way. In this case the reflexive pronoun is allegedly the ‘absorber’ of Accusative Case:

a. *Le mele si mangiano*

b. *Ara es mengen moltes pomes*

Summing up, from the Principles and Parameters Theory on, the different properties traditionally associated to passives were segregated into minimal properties affecting the principles of grammar. There was no more need for separated rules for be and pronominal passives, for instance. The relationship between active and passive sentences, what we called «*the speaker’s intuition*» was technically preserved through the UTAH:

- (26) *Uniformity of Theta-Assignment Hypothesis (UTAH):*

Identical thematic relationships between items are represented by identical structural relationships between these items at the level of D-structure. (Baker 1988:46)

The wish to motivate Burzio’s generalization, the UTAH, and the correlations established for passive sentences in the Principles and Parameters Theory has led to several developments in the eighties. Jaeggli (1986: 591) assumed that in a (*be-*) passive the «the external Theta-role has been assigned to the passive suffix» and also that «the passive suffix *-en* is assigned (and requires the assignment of) objective Case (ibid.: 595). This hypothesis was further developed in Baker, Johnson & Roberts (1989)¹⁸, who related the suffix *-en* to the I^0 position. Since the fact that by-phrases receive an Agent interpretation also needs an explanation, a further assumption is made: the Agent Theta role is transmitted from the passive suffix to the by-phrase by a process of percolation through the branching nodes dominating the PP. The by-phrase is not an argument of the verb. Rather, the NP is an argument of the P *by*, and the whole PP is an (optional) argument of the *-en* suffix. This approach, however, is not exempt of theory-internal problems. Theta-role and Case absorption by the PP-suffix would be clearer in a language, which, as Romance ones, PP suffixes show evident nominal properties such as Gender and Number

18. For the sake of simplicity we will refer to both papers generically as to Jaeggli’s Hypothesis if no further clarification is needed.

agreement. Moreover, the P *by* assigns the same Theta-role in Passives and in other PPs, a fact that should be considered a mere coincidence in Jaeggli's account.

As we saw, two properties intervene in voice and passivization phenomena. On the one hand, the lexical-aspectual properties of the verb restrict the passivization possibilities, and, on the other hand, the functional-inflective properties of the sentence act as the trigger of movement. In the late nineties two (apparently independent) developments in linguistic theory converged to posit a new paradigm, which related in some way the lexical and case-inflectional properties in an explanation of passive constructions that could, at the same time, explain the properties shared with related constructions. The split between functional and lexical categories allowed rephrasing Burzio's generalisation by at the same time avoiding ad hoc correlations between properties and relating the licensing of the external argument and the possibility of passive the same category.

4. Small *v* and Voice P: one or two categories needed?

The latest developments on Voice are related in a way or another to the categories *v*P and VoiceP. The crucial point to start with is the relation between the 'special' status of the external argument (see Chomsky 1981, Stowell 1981, 1982, Koopman & Sportiche 1991, and ff.) and transitivity. The attempts to account for this relation by considering the VP a small clause with an 'extra' level at which the external argument adjoined, had the additional cost of distorting the basic assumptions about phrase structure such as the X'-bar Theory.

From Kratzer (1996) on, a paper that made a qualitative leap forward in the explanation of the singularity of subjects in front of other arguments, the relationship between voice and the subject has received a formal explicit status on the syntax-semantics interface. At the same time, in the framework of lexical syntax, Hale & Keyser (1993, 2002) established that the external argument is not part of the lexical structure of verbs; rather it is introduced at overt syntax by a functional category. The external subject is introduced by a (functional) light verb. Chomsky (1995 & ff.) adopted small *v* as the *locus* of the external argument, a position whose properties have a significant influence on voice phenomena:

- (27) «The internal arguments occupy the position of specifier and complement of V. Accordingly, the external argument cannot be lower than [Spec, *v*]. If it is [Spec, *v*], as I assume, then the *v*-VP configuration can be taken to express the causative or agentive role of the external argument. It would be natural to extend the same reasoning to transitive verb constructions generally, assigning them a double-VP structures as in (115) ([*v*^{max} [*v* [VP [... V ...]]]] *abk* transcription from the tree), the agent role being understood as the interpretation assigned to the *v*-VP configuration. (Chomsky 1995: 315)

Chomsky assumes that «only unaccusatives lacking agents would be simple VP structures» (ibid. 316), a property that will be later on extended to passives. Since unergatives and transitives share the property of having an external CAUSER

argument, Chomsky (2006) distinguishes between *v* and *v** being the latest one the only «complete» verbal category:

- (28) Let's adopt the (fairly conventional) assumption that verbal phrases are of the form *v*-VP, where *v* can be *v**, the functional category that heads verb phrases with full argument structure, unlike unaccusatives and passives. (Chomsky 2006: XXX).

For passives, the smallest domain where the 'object' DP can receive its θ -role and can be licensed is TP/CP, not *v*P, as *v*P is defective and has no accusative features to check.

Whereas for some authors, the different 'flavours' of *v* suffice to account for the differences between active transitive constructions on one hand, and unaccusative and passives on the other, this desirable simplification runs into problems when faced to the facts in some languages (Alexiadou, 2012; Alexiadou & Doron 2012; Harley, 2013).

The functional category *v*P presumably plays also an important role in the licensing of the Agent PP. Collins (2005) addresses the puzzling question of the nature, semantic interpretation and licensing of *by*-Phrases in long passives, and assumes a (controversial) analysis in which it is generated in the same position as the external argument. This very appealing approach has the cost of positing a *smuggling* movement in order to avoid the violation of the local constraints.

5. Past Participles, Perfects, inner Aspect and grammatical aspect

Lexical-aspectual restrictions in passives are related to the two kinds of Aspect, inner (*Aktionsart* or lexical structure in Hale & Keyser's sense) and outer or sentence-related.

As for inner Aspect, the lexical structure of the verb is the responsible of the different degree of grammaticality and acceptability of the sequences in 4.

- (29) a. *El llanto de un niño es llorado (Mendikoetxea, 1999: 1621).
 b. *Son construidas casas por los albañiles (Ibid.: 1622).
 c. *Unos cien metros fueron corridos por los atletas (Ibid.: 1622).
 d. ??Fueron hechas muchas visitas a los enfermos (Ibid.: 1622).

The general simple view is that, from the four types of predicates first identified by Vendler (1967), only accomplishments admit freely the passive. States and activities cannot because they are unbounded, they have no endpoint. That would cover the facts in (29). Achievements do not have internal duration and are restricted to punctual verbal tenses: they are very marginal in the present or durative past. In a more accurate view, such as Hale & Keyser's one, the objects in (29a/b) are not the endpoint of an event. *Llorar* and *correr* are unergative verbs with a lexical structure in which a N LLORO/LLANTO or CARRERA have incorporated or conflated

into a verbalizing position; therefore, the direct object is a kind of cognate hyponym of the lexical root of the verb. A similar account can be given to (29c), where the measure direct object is not the real object, but a quantificational modifier of the incorporated N. As for (29c), *construir* can be interpreted as an accomplishment with a definite object; with a bare NP it is unbounded. The same structure can be attributed to (29d), where the light verb *hacer* fulfils the verbalising place and the apparent object *muchas visitas* is the predicate N.

From Benveniste on, research on perfectivity and on the properties of past participles to passive sentences has produced a huge amount of research in many theoretical frameworks.¹⁹ Related to this, a very promising line of research treats Voice phenomena and the syntactic variation and restrictions by ‘deconstructing’ all the components intervening in passives. As for BE passives, both the copular verb and the properties of PPs have to be analysed (Embick, 1997; Embick 2000; Alexiadou, Rathert & von Stechow, 2003, Gehrke & Grillo, 2009, a.o.).

The restrictions on passives have to do with the interaction of three factors: the aspectual value of the morphological tense of the verb, the inner aspect or Aktionsart of the verb, and the fact that the PP has its own aspect: a perfective one. This line of research is followed by Bosque’s paper in this volume. Bosque’s paper is a fine-grained description and analysis of the lexical, syntactic and semantic properties of Result Past Participles derived from transitive verbs in Spanish. He argues on empirically and theoretically well-supported grounds for a classification much more precise than the existing ones. The paper offers many evidences to separate several factors determining the bunch of properties shown by the R-PPts and to identify lexical or inner-aspect factors, grammatical aspect factors, explained by the presence of a silent verb *have*, voice properties as the externalization of the internal argument. The main data comes from the structures known as reduced relatives, but the author also addresses the compatibility between R-PPts and the auxiliary verb *estar*. He also shows that previous accounts of the (im)possibility of *estar* with PPts are not accurate enough and that a more subtle analysis is needed. Following Bosque, the relevant interpretation of result that allows us to explain the compatibility of the PPrt and *estar* is the one that relies on the temporal use derived from the presence of the silent verb *HAVE*. The research carried out has further consequences as for the explanation of the restrictions and (in)compatibilities between R-PPts and other auxiliary verbs like *quedar*, *verse*, among others.

Much discussion came up concerning the functional categories over the lexical VP that are responsible of introducing and licensing the external argument. Two

19. Interestingly enough, these restrictions had been noticed by traditional grammarians. In the Spanish/Catalan area, works by Fernández Ramírez (1951) and Coromines (1972) are especially relevant. Coromines, for instance, noticed that achievements (called by him ‘accions puntuals’) could never appear in Catalan in the present or past continuous tense:

- (i) La inscripció és descoberta pel president
the inscription is discovered by-the president
- (ii) Els documents eren retirats de la taula del secretari
the documents were-being taken from the table of-the secretary

fundamental lines of research are worth mentioning. Chomsky (1995 and ff.) argues for different values / properties of the functional category *v*, *v* and *v*^{*}, where, as mentioned, only *v*^{*} is a fully developed that can introduce an external argument (see also Harley, 2009, or the ‘flavours’ of *v*). The other stream of research, stemming from Kratzer (1996), proposes that VoiceP introduces the external argument. The interplay between the lexical structure of verbs and the functional categories of the VP layer is a topic of much research in recent literature (Folli and Harley, 2005; Alexiadou); several researchers have discussed the possibility that both categories, *v* and Voice, are needed to account for the morphosyntactic and semantic intricacies of passive and passive-like structures. Harley (2013) has shown on the basis of Hiaki data that if Baker’s (1998) Mirror’s Principle is to be maintained, Voice P and *v*P are both needed in order to account for the fact that agentive verbalizing morphology and the introduction of verbal arguments –supposed to be introduced by *v*P– is not on complementary distribution to passive alternations. Much of the Alexiadou’s paper in this volume is another strongly grounded contribution in this sense. The author makes a fine-grained analysis of the properties of middle and reflexive structures in Greek compared to those of English. Alexiadou argues that semantic properties and labels have to be separated from syntactic and formal properties. From a semantic point of view, ‘middle’ can be adequately used to refer to (the semantic property of) ascribing a dispositional property to the patient/theme argument. This semantic property is differently encoded in languages: middles and reflexives are active / unergative in English and middle / unaccusative in Greek. Following Alexiadou, some languages like English have a Passive FC over VoiceP. VoiceP is responsible of introducing the external argument. Other languages, like Greek, have Middle Voice as one of the shapes of Non-active Voice. In these languages, middles act as unaccusatives.

The topic of the values of the functional category *v* is also pursued in van Gelderen’s paper from a diachronic point of view. This author focuses on a topic indirectly related to Voice: how the different flavours of *v* evolve along the history of language, namely English, and she is concerned with as a recognized unstable class of verbs: *psich* verbs. Specifically most have evolved from an object-experiencer argument structure to a subject-Experiencer status. The author argues that the change in the status of *v* from a causativizer to a stative head caused the structures to be ambiguous and the experiencer to be interpreted as the subject. This analysis has consequences to be explored on the possibilities of *psich* verbs to passivize in different stages of the language.

Research on language disorders as well as on language acquisition is of special interest not only for the very purpose of discovering the exact nature of the impaired behavior and its linguistic properties related to other cognitive disorders and in relation to the Typically developing or Typically Behaving people, but also because they can be used as a test to check linguistic hypotheses. Gavarró & Heshmati’s paper presents the results of an experiment on the comprehension of long and short passives in Persian ASD affected children. The authors present exhaustively the results obtained and compare them to the results of similar experiments carried out for Greek and Danish ASD children. They conclude that highly Performing Children behave

like Typically Developing Children whereas, Low Performing Children behave have also a Low comprehension performance of passive sentences.

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Active, middle, and passive: the morpho-syntax of Voice*

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Abstract

This paper is concerned with the variation found with respect to how languages morphologically mark argument structure (AS) alternations, a variation that I take to be related to the realization of the syntactic Voice head. The paper discusses the behavior of dispositional middles and reflexives in languages such as English as opposed to their Greek counterparts. I will pursue the hypothesis that there are three Voice related heads implicated in AS alternations across languages. Active Voice is involved in the structure of all transitive and unergative predicates across languages, which in English subsumes d. middles and reflexives. Passive Voice, which the paper will only briefly touch upon here, takes as an input a transitive structure and gives an English/German/Hebrew type passive. Middle Voice is the non-active counterpart of Kratzer's active Voice and gives rise to reflexives, passives and dispositional middles in Greek type languages.

Keywords: Voice; dispositional middles; reflexives; anticausatives; Passive; Middle; unergative; unaccusative; by-phrase.

Resum. *Activa, mitjana i passiva: la morfosintaxi de la veu*

Aquest article tracta la variació que mostren les llengües en el marcatge morfològic dels canvis en l'estructura argumental (EA), una variació que considero que està relacionada amb la realització del nucli sintàctic Veu. L'article estudia el comportament de les construccions mitjanes disposicionals i de les reflexives en llengües com l'anglès, en contrast amb les seves construccions corresponents en grec. Desenvoluparé la hipòtesi que darrere de les alternances en l'EA hi ha implicats tres nuclis Veu relacionats. El nucli Veu activa és a la base de l'estructura de tots els predicats transitius i inergatius de totes les llengües, que en el cas de l'anglès inclou les mitjanes disposicionals i reflexives. El nucli Veu passiva, que aquest article tractarà de manera molt breu, pren com a input una estructura transitiva i genera una passiva en llengües del tipus anglès/alemany/hebreu. El nucli Veu mitjana és l'homòleg no actiu del Veu activa de Kratzer i produeix reflexives, passives i mitjanes disposicionals en llengües del tipus grec.

Mots clau: veu; mitjanes disposicionals; reflexives; anticausatives; passiva; mitjana; inergatiu; inacusatiu; complement agent.

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Table of Contents

1. Introduction 2. Dispositional middles across languages 3. Reflexives across languages	4. Towards an analysis 5. Conclusions References
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1. Introduction

The term Voice is used at least in three ways in the literature. First, it denotes a particular alternation in a verb's argument structure. I will refer to such alternations as AS alternations here. Second, as Voice alternations are typically marked on the verb's morphology, Voice is considered a morpho-syntactic category of the verb. I will use the term Voice morphology to refer to the realization of Voice. Third, Voice is taken to be a syntactic head introducing the verb's external argument. Ever since the introduction of this head in Kratzer (1996), several authors have been dealing with the question of how AS alternations relate to this syntactic head, and what Spell-out conditions this is subject to, the main concern being the manner in which AS alternations relate to Voice morphology. This paper is couched within this tradition and attempts to offer an account of how Karttunen's Voice head relates to the realization of Voice in the context of Voice alternations, by paying particular attention to the crosslinguistic variation found with dispositional middle and reflexive formation.

As is well known, there are several AS alternations which have been thoroughly discussed in the literature. A central AS alternation is the one between active Voice and the eventive passive Voice, exemplified in (1) for English:

- (1) a. John read the book. (active)
 b. The book was read (by John). (passive)

Three further AS-alternations that have been the subject of much controversy are: (i) the causative-anticausative alternation. Anticausative predicates refer to spontaneous events like *break*, *open*, or *melt* which can also be construed as transitive/causative verbs. It is generally agreed upon that the transitive counterpart of the alternation is interpreted roughly as 'cause to verb_{intransitive}', see Levin (1993), and Schäfer (2009) for discussion:

- (2) a. John broke the vase. (causative)
 b. The vase broke. (anticausative)

(ii) The generic or dispositional middle alternation (d. middle henceforth). According to Levin (1993:26), the intransitive variant of this alternation, the d. middle construction in (3b), is characterized by lack of specific time reference and by

an understood but an unexpressed agent. D. middles tend to, and in some languages must, include an adverbial or a modal element. It is precisely these properties that distinguish the d. middle alternation from the causative-anticausative alternation (see Schäfer 2008 for a detailed comparison):

- (3) a. The butcher cuts the meat.
b. The meat cuts easily.

(iii) The reflexive alternation. This alternation involves naturally reflexive verbs, e.g. ‘body care verbs’ in Kemmer’s (1993) classification (*wash, comb*), or ‘verbs of assuming position’ (*sit down, turn*), which can have transitive construals. The intransitive variant in this case, (4a), describes an action which is directed towards the subject of the verb.

- (4) a. John washed and combed every morning.
b. John washed Mary.

The above AS-alternations have distinct properties. In the passive, there is general consensus that the external argument is somehow implicitly present, while this is not the case in anticausatives. In d. middles, the implicit external argument is less active than in the case of passives, but it is somehow understood. For instance, unlike passives, d. middles in English do not allow modification by agentive adverbials, control into purpose clauses, and they do not tolerate the licensing of the *by*-phrase. In addition, d. middles are generally considered to be stative predications. In the case of natural reflexives, reference is being made to two thematic roles that are both attributed to a single DP.

What will constitute the focus of my discussion here is the observation that we find a lot of variation in how languages morphologically mark these AS alternations, a variation that I take to be related to the realization of the syntactic Voice head. In English, the passive is analytic, built on the basis of an auxiliary and a participle, while the other three AS alternations bear active morphology. In languages such as Greek, intransitive variants of all alternations are formed synthetically and bear non-active morphology, i.e. passives, anticausatives, d. middles and reflexives are all marked alike, see (5), and Tsimpli (1989), Alexiadou & Anagnostopoulou (2004), Zombolou (2004) for further discussion.^{1,2} In German and Romance, the passive is formed as in English, analytically, and d. middles, reflexives, and anticausatives are marked alike: they surface with a reflexive weak pronoun/clitic (*sich* in e.g. German, see (6), and *se* in e.g. French), though as in Greek, see fn. 1,

1. Note, however, that there are several anticausative verbs surfacing with active morphology similar to their English counterparts, see Alexiadou & Anagnostopoulou (2004), Alexiadou, Anagnostopoulou & Schäfer (2006, 2015) for discussion.
2. Note that Greek can form transitive versions of reflexive predicates via the complex reflexive DP *ton eafio tu*, which is generally considered to be a DP internal argument of the predicate, see Iatridou (1988), Anagnostopoulou & Everaert (1999), Spathas (2010) for discussion.

there are several anticausatives that surface with active morphology. The number of so-called unmarked anticausatives differs from language to language and will not be of concern here. The reader is referred to Alexiadou, Anagnostopoulou & Schäfer (2006, 2015) for details.

- (5) a. O Janis ekapse ti supa. (active)
the John-nom burnt-3sg the soup-acc
'John burnt the soup.'
- b. To vivlio diavastike apo to Jani. (passive)
the book read-NAct by the John
'The book was read by John.'
- c. I supa kaike. (anticausative)
the soup-nom burnt-NAct-3sg
'The soup burnt.'
- d. I Maria htenistike. (reflexive)
the Mary-nom combed-NAct-3sg
'Mary combs (herself).'
- e. Afto to vivlio diavazete efkola. (d. middle)
this the book-nom reads-NAct-3sg easily
'This book reads easily.'
- (6) a. Der Mann wäscht **sich**. (reflexive)
the man washes REFL
'The man washes himself.'
- b. Diese Art von Büchern verkauft **sich** immer gut. (d. middle)
this sort of books sells REFL always well
'This sort of books sells always well.'
- c. Die Tür öffnete **sich**. (anticausative)
the door opened REFL
'The door opened.'
- d. Die Tür wurde geöffnet. (passive)
the door was opened
'The door was opened.'

Table 1 summarizes the cross-linguistic variation found. This table includes Hebrew, which is like English and German in having a distinct passive, but like Greek in that its passive is synthetic. As discussed in Doron (2003), Hebrew marks d.middles, reflexives and anticausatives with middle Voice morphology, at least in its intensive template, while its simple template shows a syncretism identical to that of Greek.

In this paper, I will discuss two points of variation. The first one concerns the behavior of d. middles in languages such as English as opposed to their Greek counterparts, building crucially on Lekakou's (2005) insights. The second one concerns

Table 1. Voice syncretism across languages

	active	analytic passive	synthetic passive	dispositional middle	anticausative	reflexive
Greek	Act	–	Nact	Nact	Nact	Nact
Hebrew	Act	–	Pass	Middle	Middle	Middle
German	Act	+	–	Refl	Refl	Refl
Romance	Act	+	–	Refl	Refl	Refl
English	Act	+	–	Act	Act	Act

the behavior of reflexives in English as opposed to Greek, building on Alexiadou & Schäfer (2013). I will not deal with cross-linguistic differences in the domain of passives and anticausatives and refer the reader to Alexiadou (2013), Alexiadou, Anagnostopoulou & Schäfer (2006, 2015), and Spathas, Alexiadou & Schäfer (to appear) for details and an analysis.

I will concentrate on d. middles and reflexives for two reasons: first, they show distinct morpho-syntax in the two languages I am mainly interested in, namely Greek and English. In Greek, they surface with non-active morphology, which is shared by e.g. passives, while in English they surface with active morphology. The question I will ask is how these realizations relate to the syntactic head Voice. The study of these patterns is of theoretical importance, as it addresses the relationship between syntax and the lexicon. In some of the recent literature, the cross-linguistic differences between passives, reflexives and d. middles across languages have been explained in terms of the Lexicon vs. Syntax parameter, from Reinhart & Siloni (2005):

(7) UG allows thematic operations to apply in the lexicon or in the syntax.

For instance, Papangeli (2004) argues that with respect to reflexivization Greek is a syntax language, while English is a lexicon language. Earlier literature proposed that passives in Greek are lexical and not syntactic, see e.g. Smyrniotopoulos (1992). This parametrization is supposed to explain the differences in terms of productivity and syntactic behavior of AS alternations across languages.

My account is couched within the framework of Distributed Morphology, which rejects (7) and adopts the Borer/Chomsky conjecture in (8). The functional head in our case is Kratzer's Voice head:

(8) Parametrization is related to properties of functional heads.

In particular, I will pursue the following hypothesis, developed in Doron (2003), Alexiadou & Doron (2012), and Spathas, Alexiadou & Schäfer (to appear): there are three Voice related heads implicated in AS alternations across languages. Active Voice is involved in the structure of all transitive and unergative predicates across languages (which in English subsumes d. middles and reflexives). Passive Voice, which I will only briefly touch upon here, takes as an input a transitive

structure and gives an English/German/Hebrew type passive. Middle Voice is the non-active counterpart of Kratzer's active Voice and gives rise to reflexives, passives and d. middles in Greek type languages. Following Doron's insights, I take Middle Voice to crucially differ from Passive in that it does not obligatorily trigger a Disjoint Reference Effect. This explains why eventive passives, reflexives, and d. middles do not show a uniform syntactic behavior across languages. The locus of Voice morphology is the functional head Voice, building on Kratzer (1996), the projection which introduces the external argument. In the absence of an external argument, as is the case of unmarked anticausatives, see fn. 1, no Voice projection is present and the default morphology is active, see Alexiadou, Anagnostopoulou & Schäfer (2006, 2015) for discussion. In contrast, the active morphology of English is related to the presence of an active Voice head, the single argument of these predicates being projected in its specifier, contra e.g. Alexiadou & Doron (2012), Schäfer (2008). As we will see, in English both d. middles and reflexives behave like unergative predicates, while they behave like unaccusatives in Greek. This is precisely related to the distinct morpho-syntactic representation of these predicates in the two languages.

The novelty of the proposal relies primarily in the application of the Middle Voice approach to Greek d. middles, by relating it to Lekakou's important findings. Moreover, the paper makes the claim that since middle Voice is actually a non-active Voice head, AS alternations that surface with active morphology, such as English d. middles and reflexives, cannot involve a Middle Voice head, contra Alexiadou & Doron (2012). Furthermore, the paper contributes to our understanding of how the morpho-syntactic properties of AS alternations relate to their semantics: while English d. middles and reflexives have the same morphological realization as anticausatives in this language, they differ in terms of structural representation. Anticausatives lack a Voice projection, while d. middles and reflexives contain an active Voice head. And while English d. middles and reflexives differ in terms of morpho-syntactic properties from their Greek counterparts, they form a unified semantic class. From this perspective, d. middle is a particular interpretation that certain syntactic configurations may give rise to, crucially following Condoravdi (1989), Lekakou (2005), and Pitteroff (2014) among others.

The paper is structured as follows: in section 2, I discuss the different morpho-syntactic properties of d. middles in English and in Greek; in section 3, I turn to the morpho-syntactic differences between English and Greek reflexives. In section 4, I propose my analysis of these differences. In section 5, I conclude and address some wider implications of the analysis as well as the question how this analysis can be applied to the other languages included in table 1.

2. Dispositional middles across languages

In what follows, I briefly outline Lekakou's (2005) proposal, which instantiates a novel way to approach the relationship between the semantics and the morphological realization of d. middles across languages. According to Lekakou, middles ascribe a dispositional property to the understood object. This has as a result that

the subject of a middle sentence will never be an agent. From her perspective, disposition ascriptions are subject-oriented generic sentences. She points out that the core properties that middles share across languages follow: the genericity of an otherwise eventive predicate; the promotion to subject position by syntactic movement or base-generation, and the interpretation of the otherwise internal argument; the demotion and interpretation of the otherwise external argument. For Lekakou (2005: 1), ‘the crosslinguistic variation relates to the following two factors. First, the different means available to languages to encode genericity distinguishes between unergative and unaccusative middles. Unaccusative middles obtain in languages like French and Greek, which encode genericity in the morphosyntax in the form of imperfective aspect. Languages where genericity is not expressed by aspectual morphology, i.e. German, Dutch and English, employ unergative structures.’

This proposal enables us to approach the cross-linguistic differences in the realization of middles in an insightful way. As is well known, d. middles do not behave syntactically uniformly across languages, although they form a unified semantic class. In English, as Ackema & Schoorlemmer (1994) have shown, they exhibit properties of unergatives. On the other hand, in Greek, d. middles are formally identical to passives, i.e. they are unaccusative predicates. In what follows, I will review the evidence in favor of this partition. To begin with, d. middles in Greek tolerate *by* phrases (Tsimpli 1989, Lekakou 2005):

- (9) Afto to vivlio diavazete efxarista. (apo opiondipote)
 this the book read-NAct-Imperf-3sg with-pleasure by anyone
 ‘This book reads with pleasure by anyone.’ [lit.]

While *by*-phrases are out in English, see (10), (11) shows that a *for*-PP can be used in the dispositional middle relating to the implicit external argument. Stroik (1992, 1999) argues that the presence of *for*-phrases signals that the agent argument of the verb is syntactically present and the agent has been demoted to a VP adjunct.

- (10) *Plates break easily by John.

- (11) Bureaucrats bribe easily **for** Sam.

Recently, however, Stephens (2007) showed that *for*-PPs can appear with unergative verbs, which d. middles in English will be shown to be, see below, and with instrument subject constructions, see (12). These constructions are significant as they suggest that the *for*-PP cannot realize the verb’s external argument since this is projected in the syntax (for a detailed discussion of instrument subjects see Alexiadou and Schäfer [2006]):

- (12) a. Ed has no trouble getting the baby to sleep, but she won’t sleep for me.
 b. This pen draws nice lines for any decent calligrapher.

Semantically, the *for*-PP introduces objects that act volitionally and seem to exercise control over the eventuality, but crucially the primary responsibility of action is attributed to the grammatical subject and not to the object of the *for*-PP. Stephens concludes that the association of the object of the *for*-PP with the agent of dispositional middles seems to be a pragmatic, rather than a syntactic, phenomenon, see also Alexiadou (2012) for some further discussion.

Turning now to the arguments that have been put forth to show that d. middles are unergative in English but unaccusative in Greek, consider the following. A first argument discussed in Lekakou, due to Edwin Williams (personal communication) and Fellbaum (1986), involves pairs such as *raise-rise*, see also Schäfer (2008) for discussion. These pairs are interesting as they involve variants of the causative-anticausative alternation which are morphologically distinct. The intransitive variant of *raise* is *rise* in (13b). Crucially, the d. middle does not employ the unaccusative form, it employs the transitive form (13c):³

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

To account for this, I will assume, following Embick (2010), that phasal heads trigger a particular Spell Out of roots. In this case, the relevant phase head is Voice, see Schäfer (2008). According to Alexiadou, Anagnostopoulou & Schäfer (2006, 2015) and Schäfer (2012), both causatives and anticausatives are bi-eventive (in the sense that they involve two eventualities, one verbal event *v* and a Result State, see (14a-b)). From this perspective, causative predicates differ from anticausatives in that the former contain a Voice layer (Kratzer 1996) introducing an external argument, which the latter lack:

- (14) a. [Voice [*v* [STATE]]] (causative)
 b. [*v* [STATE]] (anticausative)

Thus it is precisely the presence vs. absence of the Voice layer that triggers the stem alternation in (13), since unergatives, like transitive predicates, contain the functional layer Voice introducing the external argument.

A second test involves the formation of prenominal participles. D. middles, unlike unaccusatives, cannot form prenominal modifiers:

- (15) a. *the easily bribing men
 b. the swiftly rolling ball

3. The fact that agent subjects are out in middles is explained by Lekakou's (2005) proposal briefly summarized in the beginning of this section.

Turning to Greek, although the language lacks most of the standard tests for unaccusativity (see Markantonatou 1992, Alexiadou & Anagnostopoulou 1999), the following tests suggest that d. middles pattern with unaccusatives. A first test discussed in Lekakou (2005), and see also Sioupi (1998), is compatibility with postverbal bare plurals. Only unaccusatives tolerate such subjects, unergatives do not, see Alexiadou & Anagnostopoulou (1999), and Alexiadou (2011). When we apply this test to d. middles, we see that the middle interpretation of (16) is unavailable, from Lekakou (2005):

- On the basis of this test, d. middles should be analyzed as unergative predicates. However, as noted by Alexiadou (1999), postverbal subjects are illicit with stative verbs in general. Thus due to its genericity, according to Lekakou (2005), the middle verb is of (derived) stative aspect, hence it is unlikely that it can tolerate a postverbal subject. We then conclude that the above test does not provide evidence against the analysis of Greek d. middles as unaccusatives, but is attributable to a conflict between unaccusative derivation and stativity.

A second test involves possessor sub-extraction, which is possible from the post-verbal subject of an unaccusative verb, as well as from the object of a transitive but not from the subject of an unergative (see Alexiadou & Anagnostopoulou 1999). Lekakou (2005) shows that d. middles in Greek, like unaccusative predicates, allow possessor sub-extraction:

- (19) tinos vleponde i tenies efkola?
 whose see-NAct-Imperf-3pl the film-Nom-Pl easily
 'Whose movies watch easily?'

I thus conclude that d. middles behave like unaccusatives in Greek. This being the case, we expect d. middles in this language to be subject to the same morphological requirement that all structures without an external argument are subject to, namely to surface with non-active morphology, see Embick (1998), a point to which I will turn in section 4.

Before turning to reflexive predicates in the next section, however, let me point out that in agreement with Lekakou (2005) and Condoravdi (1989), I take *d. middle* to be a semantic category whose syntactic realization can differ across languages. Thus distinct morpho-syntaxes as in Greek and English can both yield the same semantics. Following Lekakou, the semantics of middles are licensed by imperfective morphology in Greek. Adopting her analysis, a language will employ an unaccusative structure for the middle interpretation iff genericity is encoded in imperfective morphology, as stated in (20), from Lekakou (2005). For Lekakou, imperfective morphology encodes genericity, and in languages such as Greek (and French) goes hand in hand with an unaccusative syntax. Languages such as English (and German, and Dutch), which do not encode genericity morphologically resort to an unergative type middle, see Lekakou (2005, chapter 3 for extensive discussion).

- (20) A language encodes genericity in imperfective morphology iff in at least one tense it has two distinct verb forms for generic and non-generic uses, i.e. iff genericity \rightarrow imperfectivity.
- (21) Middle interpretation = the ascription of a dispositional property to the Patient/Theme argument.

I will discuss in section 4 how English satisfies (21). What, however, I will not discuss here is how the genericity of an otherwise eventive verb and the obligatorily generic interpretation of indefinite subjects of middles is derived, as this is clearly beyond the scope of this paper. I refer the reader to Lekakou (2005) and Schäfer (2008) for details.

3. Reflexives across languages

Reflexive predicates in languages such as Greek are considered by several authors to function like unaccusatives (Marantz 1984, Embick 1998 and others), basically because they share the same non-active morphology with intransitive variants of verbs entering the causative alternation, which are uncontroversially unaccusatives, see (5) above, and (22) below, from Alexiadou & Schäfer (2013).

- (22) a. O Janis eplín-e ti Maria.
the John washed-3sg the Mary
'John washed Mary.'
- b. I Maria plí-thik-e me prosóhi.
the Mary washed-NAct-3sg with care
'Mary washed carefully.'

However, reflexives differ from anticausatives in that they have an agentive interpretation, and thus can be modified by agent-oriented adverbials (22b). In fact, several other scholars analyzed such predicates as unergatives (e.g. Papangeli 2004,

Tsimpli 1989). Tsimpli (1989), in particular, discusses a diagnostic that suggests that the DP argument of reflexives is not a derived subject. According to Tsimpli, a derived subject in Greek cannot control into rationale clauses, as shown in the passive example in (23). In contrast, subjects of naturally reflexive predicates can (24). This suggested to Tsimpli that the subject in (24) cannot be analyzed as ‘deep’ object, and hence reflexives are unergative predicates.⁴

- (23) *O Janis dolofonith-ik-e ja na gini iroas.
 the John murdered-NAct-3sg for subj become hero
 ‘John_i was murdered PRO_i to become a hero.’

- (24) I Maria htenist-ik-e ja na vgi ekso.
 the Mary combed-NAct-3sg for subj go out
 ‘Mary_i combed PRO_i to go out.’

Again as with d. middles, the following tests suggest that reflexives are actually unaccusatives and not unergatives in Greek. Markantonatou (1992) pointed out that in Greek unaccusative but not unergative predicates can form adjectival participles. Applying this diagnostic, we see that reflexives pattern unlike unergatives:

- (25) a. pesmeno filo b. *tregmenos anthropos
 fallen leaf run man
 (26) a. plimeno pedi b. ksirismenos anthropos
 washed child shaved man

However, as Alexiadou & Schäfer (2013) note, this only shows that reflexives behave unlike unergatives, not that they are necessarily unaccusative. (26a, b) could as well be derived from the transitive version of these verbs.

As in English, unergative predicates can build *er*-nominals in Greek, while unaccusatives cannot. The corresponding affix is *-tis* (27a-d), from Alexiadou & Schäfer (2013). Applying this test to reflexives, the authors conclude that they pattern unlike unergative predicates. However, the following remarks are in order as far as this test is concerned. The formation of *-er* nominals in Greek is generally restricted. For instance, Zombolou (2004) observes that none of the verbs of the *destroy/kill* class can form *-er* nominals. Moreover, note that transitive variants of reflexive verbs cannot form such nominalizations for reasons that need to be

4. As an anonymous reviewer correctly points out, examples with unaccusative predicates in Greek are fine, similarly to (24), suggesting that unaccusatives and reflexives pattern on a par:
 (i) irthan tehnikí ja na episkevasun ton ipologisti
 came-3pl technicians for subj repair-3pl the computer
 ‘Technicians_i came PRO_i to repair the computer.’

This suggests that the problem with (23) is the Control via the implicit argument of the passive, see the discussion in section 4.2.

investigated further. Importantly, however, unergative predicates happily form *-er* nominals, see (27).

- (27) a. *tragudis-tis* b. *horef-tis* c. **pes-tis* d. **erho-tis*
 singer dancer faller arriver
- (28) a. **ksiris-tis* b. **ndi-tis* c. **htenis-tis*
 shaver dresser comber

Turning now to one of the tests discussed above in the context of d. middles, note that with respect to possessor sub-extraction, reflexive verbs pattern unlike unergatives:

- (29) *tinos plithikan ta pedia?*
 whose washed-NAct-3pl the children
 ‘Whose children washed?’

Alexiadou & Schäfer (2013) discuss a further test, namely the *ellipsis test*, which also suggests unaccusativity: (30a) with an overt object anaphor is ambiguous, the reflexive with non-active morphology in (30b) has only a sloppy reading and no object comparison reading. Sells, Zaenen & Zec (1987) claim that this is so because a process of de-transitivization has taken place.

- (30) a. O Janis pleni ton eafto tu perisotero apo to Vasili.
 the John washes him self more than the Vasili
 ‘John washes himself more than Vasilis.’
1. *Subject comparison, strict or sloppy*
 John washes himself more than Vasili washes John/himself
2. *Object comparison: Shows that washes himself is transitive*
 John washes himself more than he washes Vasili
- b. O Janis plenete perisotero apo to Vasili.
 the John washes-NAct more than the Vasilis
1. *Sloppy interpretation: John washes himself more than Vasilis washes himself*
2. *no object comparison*

On the basis of the above, Alexiadou & Schäfer (2013) conclude that Greek reflexives are unaccusatives.

In contrast, English reflexives behave syntactically as unergatives. This point has already been made in e.g. Reinhart & Siloni (2004), and Alexiadou & Schäfer (2013) present some more arguments in favor of this analysis. Firstly, like unergatives (31a), but unlike unaccusatives (31b), they can appear in the *X-way*-construction (see Goldberg 1997, Marantz 1992).

- (31) a. John danced his way out of the room.
 b. *The butter melted its way off the turkey.
 c. John washed/shaved his way into a better job.

Secondly, resultative secondary predicates can only be predicated of internal arguments; in the absence of such an internal argument a (fake) reflexive has to be inserted (32). Again, reflexives show unergative behavior (again under both their interpretations) (33).

Thirdly, reflexives can build *er*-nominalization, which is impossible with unaccusatives (34).⁵

- (32) a. The ice froze (*itself) solid.
 b. John laughed *(himself) sick.
- (33) a. John washed/shaved *(himself) clean.
 b. John washed *(something) clean.
- (34) a. She runs so fast because she is an experienced runner.
 b. *She moves so gracefully because she is an experienced mover.
 c. She dresses slowly because she is an elegant dresser.

Finally, as Alexiadou & Schäfer (2013) point out, (35) with an object reflexive pronoun is three-way ambiguous and has an object comparison reading while (36), the corresponding reflexive, has only the sloppy reading. Importantly, it lacks the object comparison reading, which requires a transitive antecedent (Dimitriadis & Que 2009).

- (35) John washes himself better than George.
- a. John washes himself more than George washes himself. (*sloppy*)
 b. John washes himself more than George washes John. (*strict*)
 c. John washes himself more than he washes George. (*object comparison*)

5. An anonymous reviewer suggests that one should be careful with the application of the *-er* test. Note that the context in (34) allows only the intransitive and not the transitive interpretation of the predicated. As already noted earlier in this section, the test is also problematic in Greek: naturally reflexive predicates do not form *-er* nominals neither in their transitive nor in their intransitive variant.

(36) John washes more than George.

a. Subject comparison (sloppy):

John washes himself more than George washes himself.

a'. John washes more stuff than George washes stuff.

b. Object comparison: Impossible, showing that *wash* is intransitive.

*John washes himself more than he washes George.

While this test gives the same results in English and in Greek, one should not interpret its results as suggesting that reflexive predicates are identical with respect to intransitivity. In English, all the other tests show that the predicate is unergative, while in Greek we have an unaccusative structure. Crucially both structures are intransitive, but they differ with respect to unaccusativity/unergativity.

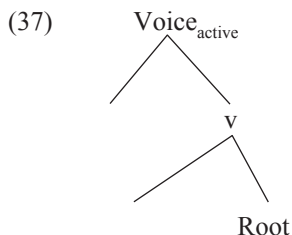
Summarizing, we have two distinct morpho-syntaxes corresponding to the same semantic category: in Greek d. middles and reflexives surface with non-active morphology, while they both surface with active morphology in English. Does this mean that in both languages the same syntactic head Voice is present in these alternations? We saw that in Greek, non-active morphology goes together with an unaccusative syntax, while in English active morphology goes together with an unergative syntax. This leads to the proposal that distinct Voice heads must be present in these two AS alternations in the two languages. In the next section, we will see how this can be captured in the theory of Voice developed in Alexiadou & Doron (2012), and Alexiadou, Anagnostopoulou & Schäfer (2015), Spathas, Alexiadou & Schäfer (to appear).

4. Towards an analysis

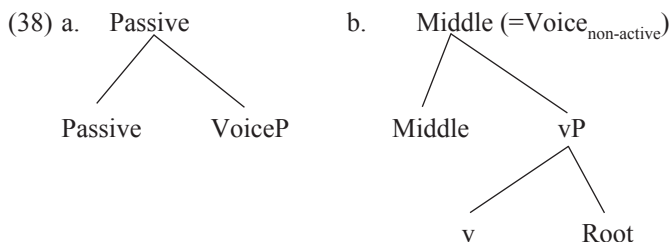
4.1. A theory of Voice

I assume, building on Doron (2003), Alexiadou & Doron (2012), Alexiadou, Anagnostopoulou & Schäfer (2015) and Spathas, Alexiadou & Schäfer (to appear), that there are three heads implicated in argument alternations of the type discussed here: active, middle, and passive. While the characterization that I will offer here does not correspond to that offered in these works, it will be sufficient to account for the cross-linguistic differences discussed in the previous sections.

My account of the patterns discussed in sections 2 and 3 is cast within the framework of Distributed Morphology, according to which word formation processes make use of the following units: roots, and functional morphemes, e.g. categorizing heads (v), the projection introducing the external argument (Voice), Aspect, Tense, etc. It is generally agreed upon that external arguments, and perhaps arguments in general, see Lohndal (2014), are introduced above these categorizing heads. Kratzer (1996) labels the projection that introduces external arguments Voice. In addition to introducing external arguments, Voice is a cyclic head in the sense of Embick (2010): it determines a special domain for interpretation and allomorphy, as we saw above in (13-14).



Following Alexiadou & Doron (2012), see also Bruening (2012), Collins (2005), Alexiadou, Anagnostopoulou & Schäfer (2015), and Spathas, Alexiadou & Schäfer (to appear), I assume that there are two distinct non-active Voice heads implicated in AS alternations, Passive and Middle (Doron 2003). Passive attaches outside the domain that introduces the external argument and thus has as its input a transitive structure. This is the case in English (and German), Bruening (2012), cf. Collins (2005). Middle is located lower, i.e. it is the non-active counterpart of Voiceactive in (37), cf. Marantz (2013), see (38b):⁶



In languages such as English the passive head merges high, i.e. it is above the projection that introduces the external argument. In other words, in languages of this type passive is an operation on an active transitive verb phrase, and it derives passive VPs, see also Merchant (2013). Greek, on the other hand, as well as other languages of this type, lack this head. Their verbs (v+ root) combine only with Middle Voice, which is actually the non-active counterpart of Kratzer's Voice.

4.2. Explaining cross-linguistic variation

From the perspective of this model then, the proposal is that in Greek, and other languages of this type, the non-active Voice head under discussion will be realized with non-active morphology: in the absence of a specifier in Voice, which is the case with all intransitives, this head is spelled-out non-active (following Embick 1998). A structure such as the one in (38b) is thus underdetermined for

6. As correctly pointed out by an anonymous reviewer, it is not clear how such a theory of Voice can be applied to languages such as Icelandic that assign accusative in passive construals. It would seem that passive in these construals can embed a transitive structure, with a deficient external argument. The issue merits further investigation.

the semantic interpretation it can receive: as Spathas, Alexiadou & Schäfer (to appear) argue, depending on the type of root the structure contains, it can yield a reflexive or a passive interpretation. This crucially means that middle Voice is underspecified, which leads to ambiguity with the same root, unless the context provided further specification. The former interpretation is readily available with natural reflexive roots, the latter with natural disjoint predicates. Since this structure is underspecified, speakers are relatively free to choose an interpretation that would go along with it.

Turning now to the morpho-syntax of d. middles, Lekakou (2005) argued extensively that in Greek a d. middle interpretation has as an input a passive structure, i.e. a middle Voice structure of the type in (38b) in our terms.⁷ We can thus propose the following: structures such as the one in (38b) can be interpreted as reflexive, when they include a root belonging to the group of naturally reflexive verbs, and as passive otherwise, leaving anticausative interpretations out of the discussion for now.⁸ However, when structure (38b) is embedded under imperfective Aspect, a projection higher than Voice, see e.g. Rivero (1990), Alexiadou (1997) and others, a d. middle interpretation can also arise for these structures, (39).

(39) [AspectP_{imperfective} [Middle/VoiceP_{non-active}]]

The spell-out of non-active Voice in (38b) and (39) is regulated as follows, see (40), from Alexiadou, Anagnostopoulou & Schäfer (2014), building on Embick (1998). A Voice head will be specified as bearing non-active features in contexts where it lacks a specifier. Otherwise it will be realized as default zero.

(40) Voice → Voice[NonAct]/ ____ No DP specifier

From this perspective then, what is subject to parametric variation is the unavailability of a Middle/Voice_{non-active} head across languages to build the core alternations we saw in section 1: English lacks such a head, while Greek has such a head. This suggests that there is no lexicon vs. syntax parameter and languages adhere to the principle in (8). Moreover, we predict that if a language makes use of a Greek type non-active Voice head for the type of alternations discussed here, its d. middles and reflexives will behave like unaccusatives.

Before we turn to the analysis of the English pattern of d. middles and reflexives, two issues should be tackled concerning the Greek d. middle. First of all, why are *by*-phrases licit in Greek d. middles? Second of all, what explains the contrast in (23-24) that led Tsimpli to propose that reflexives are unergatives in Greek? Both properties can actually be derived from the characterization of Middle

7. In other words, as argued for by Lekakou d. middles in Greek are built on the basis of a 'passive' + generic operator structure. That is what Lekakou called passive is re-interpreted here as Middle Voice.

8. I assume that roots belong to certain ontological classes, one of which is the group of naturally reflexive verbs.

Voice offered in Alexiadou & Schäfer (2013) and Spathas, Alexiadou & Schäfer (to appear). Both Passive and Middle in these approaches are non-active Voice heads introducing an existentially bound implicit external argument. Unlike passive Voice, middle Voice does not obligatorily trigger a Disjoint Reference Effect. Thus it can both license by-phrases, agentive adverbs, and allow in (24), technically, control by the implicit agent of the Middle Voice, exactly as in structures with passive interpretation.

Turning now to English, Alexiadou & Doron (2012) argued that since reflexives and d. middles are found in English with active morphology a Middle Voice can also surface with active morphology. In particular, the authors point out that while English lost its middle morphology, it is similar to Hebrew and Greek in that it contains a Middle Voice head, which, however, is realized as active. Alexiadou & Doron subsumed this head under Middle Voice in order to capture the similarities between English, Hebrew and Greek as far as the meaning components of d. middles and reflexives are concerned. However, if we stick to the strict realizations conditions of the syntactic Voice head as e.g. proposed in Embick (1998), we are led to suggest that English simply does not employ a Voice head of the type in (38b) in d. middle and reflexive alternations. Crucially, the head involved in these AS alternations cannot be subsumed under the Middle Voice approach, since Middle Voice is a non-active Voice head. This leads to the proposal that active Voice morphology can only be associated with two possible structures: a structure which lacks Voice, as is the case of unmarked anticausatives, or an active Voice head that introduces/projects an external argument, as is arguably the case with unergative predicates. Since d. middles and reflexives are unergative predicates in English, this means that the single DP argument must be projected in Spec,VoiceP, hence the active morphology, contra Alexiadou & Doron (2012).⁹

While this analysis is relatively uncontroversial in the case of reflexives, it is not clear that it can be straightforwardly assumed in the case of d. middles (see Schäfer 2008) for discussion. One problem is the following: as we have seen, there are several arguments that English d. middles are unergative predicates. However, according to (21), a d. middle interpretation is defined as the ascription of a dispositional property to the Patient/Theme argument. This would suggest that the single DP argument in the case of English d. middles should be projected as an internal argument, something that Schäfer (2008) takes to be the null hypothesis. But, we have seen that English d. middles must contain Voice, since they trigger Voice allomorphy (13–14). To account for this, I will build on Schäfer's analysis, according to which the DP argument of the d. middle moves from the internal position to the specifier of Voice, see e.g. Fujita (1994), cf. Ahn & Sailor (to appear),¹⁰ in

9. Note here that Schäfer (2008) defines this head as expletive Voice.

10. Note that Ahn and Sailor argue that in d. middles it is actually the vP that raises to Spec,VoiceP. Note also that all analyses that apply DP movement to Spec,VoiceP, as observed by Ahn and Sailor, face problems with explaining the presence of agentivity. I cannot enter a detailed discussion of this issue here, and I refer the reader to Schäfer (2008) for an analysis. For my purposes, it is sufficient to note that agentivity in d. middles is not of the same type as the one found in passives, and hence a different explanation is necessary.

this sense, it can satisfy the requirement proposed in Lekakou with respect to the semantics of d. middle.

Schäfer (2008: 238) gives some evidence in favor of this movement analysis. Consider (41), (42), and (43):

(41) This kind of vases breaks easily.

(42) This kind of vases easily breaks.

(43) a. This book (*slowly) reads (slowly).

b. John (slowly) read (slowly) the book (slowly).

(41) is ambiguous between an anticausative and a d. middle reading. (42), however, is not ambiguous, it has the anticausative reading only. In (43), we see that while the adverb can appear following the external argument this is impossible in the case of the d. middle. The contrast in (43) suggests that Lekakou's definition of middle interpretation as the ascription of a dispositional property to the patient/theme argument is on the right track: in English adverbs of the type *slowly* in post-DP position receive an agentive interpretation only, see Alexiadou (1997), and Cinque (1999) for discussion and references. In other words, (43b) means that *it was slow of John*.¹¹ Such an interpretation is unavailable for (43a), since the DP is a theme argument that lacks intentions. The contrast in (41) and (42) can be analyzed as follows: Alexiadou (1997) has argued that there are two places in the lower clausal domain in which adverbs of the type *slowly* can appear preserving the manner reading: either as complements of V, within the VP, thus appearing in sentence final position or as specifiers of VoiceP/vP thus appearing in pre-verbal position. The fact that a generic reading is blocked when the adverb appears in pre-verbal position suggests that in the case of d. middles the DP must occupy Spec, VoiceP, hence the adverb cannot appear there, cf. Cinque (1999). Note that this type of approach assumes that adverbs as well as DPs occupy a unique specifier in the clausal architecture.

In Schäfer's system, which makes use of expletive Voice, the movement analysis does not lead to a situation in which the DP is assigned a second thematic role.¹² We would crucially need to ensure that the active Voice head involved in English d. middles is of the type that requires an overt DP, but does not assign a thematic role to this DP. One could technically implement this by suggesting that theta-roles are assigned only on first merge, and subsequent movements do not add thematic roles, contra e.g. Hornstein (1999).

11. Note that such adverbs on their agent oriented reading are placed higher in the structure, see Cinque (1999), and Alexiadou (1997) for details.

12. Thanks to an anonymous reviewer for pointing this out.

5. Conclusions

In this paper, I showed how distinct morpho-syntaxes can realize the same semantic category by focussing on the behavior of dispositional middles and reflexives in English and Greek. These two AS alternations have an unaccusative syntax in Greek, while they have an unergative syntax in English. I adopted a theory of Voice, according to which, there are three Voice heads implicated in AS alternations, active, passive and middle. Although passive was not the main focus of discussion here, the proposal was languages like Greek lack a passive Voice head, and languages like English do not seem to use Middle Voice for their core AS alternations, though they might use it when it comes to non-canonical passives such as adjectival passives and *get*-passives (see Alexiadou 2012 for discussion). It is also clear that underdeterminacy with respect to AS alternations will only be found in languages that have Middle Voice, such as Greek and not in languages such as English which have a passive vs. active system. Importantly, Middle Voice cannot be realized via active morphology: active morphology as realization of Voice is tied to the presence of Spec, VoiceP, following Embick (1998).

Now what about the other languages in table 1? Hebrew, as explicitly argued in Doron (2003) and Alexiadou & Doron (2012), has both a passive, yielding a passive only interpretation, and a middle yielding d. middle and reflexive interpretations in its intensive template. In fact, it is predicted by systems that assume Passive and Middle Voice that there should be languages that have both Voice heads and Hebrew is a case in point.

As is well known, the status of German and Romance d. middles and reflexives has been the topic of much controversial discussion in the literature. Lekakou (2005) analyzes French d. middles as very similar to their Greek counterparts, suggesting that they will show properties of unaccusatives as expected. Similar considerations have been put forth for Romance reflexives, see e.g. Pesetsky (1995), Sportiche (1998), Embick (2004) among others for discussion and references, and Reinhart & Siloni (2004) for an alternative. Recently, Sportiche (2014) has argued that *se* in French realizes middle Voice, cf. also Labelle (2008). In German, according to Schäfer (2008), all constructions involving *sich* are syntactically transitive, though some, e.g. d. middles and anticausatives, are semantically intransitive. We could argue, slightly departing from Schäfer's approach, that in German and Romance d. middles *sich/se* are projected in the specifier of a middle Voice head (which would correspond to his expletive Voice head). However, we would have to admit that its reflexive predicates have a distinct syntax, i.e. they are actually transitive structures, see Alexiadou, Schäfer & Spathas (2014) for discussion.

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On Resultative Past Participles in Spanish*

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Abstract

A large part of the theoretical literature on Spanish Past Participles (PPrt)s has focused on the *Aktionsarten* restrictions that these items exhibit in absolute clauses and verbal periphrases. This paper addresses the somehow neglected relationship that holds between grammatical and lexical aspect in the grammar of PPrts. Resultative PPrts (R-PPrts) are opposed to eventive PPrts (E-PPrts), following Kratzer, Embick, Gehrke, McIntyre, and other authors, and their meaning is shown to be a consequence of the interaction of voice and perfect features. Differences in the temporal interpretations of R-PPrts follow from the ways in which the perfect (abstract HAVE) which they incorporate is interpreted. These PPrts—which are shown to be verbal, rather than adjectival categories—are further divided in two aspectual classes. In addition to this, two interpretations of the concept ‘result’ are compared, and argued to make different predictions as regards the grammar of PPrts: one is based on the notion ‘change of state’; the other one stands on the concept of ‘perfectivity’.

Keywords: past participle; perfect; tense; passive; lexical aspect; Spanish.

Resum. *Sobre els participis de passat resultatius en castellà*

Gran part de la bibliografia teòrica sobre els participis de passat (PPs) del castellà s’ha centrat en les restriccions d’*Aktionsarten* que tenen en les clàusules absolutes i en les perífrasis verbals. Aquest article s’ocupa de la relació, sovint deixada de banda, entre l’aspecte lèxic i l’aspecte gramatical en la gramàtica dels PPs. D’acord amb Kratzer, Embick, Gehrke, McIntyre i altres autors, distingim els PPs resultatius (PP-R) dels eventius (PP-E) i mostrem que el seu significat és una conseqüència de la interacció dels trets de veu i de perfet. Les diferències en les interpretacions temporals dels PP-R deriven de la manera d’interpretar el perfet (HAVER abstracte) que incorporen. Aquests PPs—que mostrarem que són de naturalesa verbal i no pas adjectival—formen dues classes aspectuals. A més, comparem dues interpretacions del concepte ‘resultat’ i argumentem que fan prediccions diferents respecte a la gramàtica dels PPs: una es basa en la noció de ‘canvi d’estat’ i l’altra en el concepte de ‘perfectivitat’.

Mots clau: participi de passat; perfet; temps; passiva; aspecte lèxic; castellà.

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Table of Contents

1. Introduction	5. Unbound past participles
2. Obtaining results	6. The auxiliary verb <i>estar</i> and the concept of result
3. Main properties of resultative participles	7. Conclusions
4. Bound past participles	References

1. Introduction

A number of reasons explain the considerable amount of literature devoted to past participles (PPrts) in theoretical grammar over the last decades. Here is a partial list of these factors:

- 1) PPrts seem to be a hybrid category, somehow in the middle between verbs and adjectives, but there is some consensus on the idea that they do not display their verbal and adjectival properties at the same time (Wasow 1977; Levin and Rappaport 1986; Emonds 2006). As regards Spanish, possible criteria to tell these classes apart have been discussed in Luján (1981), Demonte (1983), Porroche (1988), Bosque (1999), Marín (1997, 2000, 2004a, b; 2009), Jiménez & Marín (2002), Kornfeld (2005) and Di Tullio (2008), among others.
- 2) The categorial information just mentioned is related to Kratzer (2000)'s and Embick (2004)'s distinction between eventive and resultative passives (although not subsumed into it completely). This influential distinction has been developed by Anagnostopoulou (2003), Alexiadou & Anagnostopoulou (2008), Gehrke (2011, 2012, 2013), Bruening (2014), and Alexiadou, Gehrke & Schäfer (to appear), among others. In fact, other PPrts have been proposed, either as different types or as varieties of these two main classes. Proposals include Sleeman (2011, 2014)'s eventive prenominal participles, and McIntyre (2013)'s eventive-verb-related stative PPrts, among others.
- 3) PPrts are predicates and, as such, one expects their distribution to be conditioned by distinctions on lexical aspect, whether traditional or not. As regards Spanish, *Aktionsarten* distinctions on the grammar of PPrts have been analyzed in Bosque (1999), Marín (2000, 2004a,b), Marín & Pino (2000), García Fernández (1995, 2006), and Di Tullio (2008), among others.
- 4) There seems to be some broad consensus among formal grammarians on the idea that varieties of PPrts derive from the verbal layers (related to aspect, voice, the event itself or its result) that the syntax displays in a hierarchical structure. On this issue see Embick (2004); Gehrke (2012, 2013), Sleeman (2011, 2014), Bruening (2014), McIntyre (2013) and references therein. Even so, much controversy exists on what specific layers are involved in each reading of a PPrt, and how exactly these projections are disposed. For example, the idea that adjectival passives lexicalize voice heads is defended in McIntyre (2013), Bruening (2014) and Alexiadou, Gehrke & Schäfer (to appear), but rejected in

previous analyses. The question of what specific varieties of PPrtS are directly derived from verbal roots, as opposed to series of projections in a hierarchized syntactic structure, is also controversial.

- 5) PPrtS are passive forms,¹ and these can be seen as results from operations on argument structure (case absorption, *th*-role externalization) in the line of classical GB analyses stemming from Jaeggli (1986), or in more complex syntactic structures involving voice projections (VoiceP) to which PPrtS displace (Collins 2005, Gehrke & Grillo 2009). Aspect projections are likely to be located above those headed by voice. Since Romance PPrtS are inflected for gender and number, projections associated to *phi*-features should also be located at some point in the structure, presumably at the top.
- 6) Absolute constructions headed by PPrtS present a large number of syntactic and semantic restrictions (the former, related to the specific left periphery positions they occupy; the second, mostly associated to aspectual factors). These aspects have been studied with great detail for Spanish in recent years. See Hernanz (1991), Fernández Leborans (1995), López (1994), Mendikoetxea (1999a), Marín (1996), Martín (2006), Catalá (2007), Pérez Jiménez (2008), and Suñer (2013), as well as the references therein.

This paper is about just one of the possible topics emanating from the distinctions in 1) to 3), namely the way in which lexical and grammatical aspects interact to provide the interpretation of PPrtS. I will thus make no attempt to go into the rest of the issues in my incomplete list above, even if some, several or most of them could be addressed in relation to the specific topics I will deal with in this paper.

Questions that look too simple are not necessarily inappropriate. Here is one: what exactly does *past* mean in the expression *past participle*? It certainly does not express that some eventuality is located in a temporal point prior to Speech Time, since past participles may be compatible with all tenses. We may argue that *past* in *past participle* is an aspectual, rather than temporal, notion. If we have in mind lexical aspect, this might make sense for telic events; but something should be added in order to cover atelic predicates, since nothing has come to an end in expressions such as, say, *A desired future*. If we take *past* to be an aspectual notion from the perspective of grammatical aspect (sometimes called *viewpoint aspect*), just like (im)perfective tenses are, we might postulate a “hidden HAVE”: a desired future is a future that someone has desired, rather than a future that someone desired in the past and does not desire anymore. But a desired feature may also be a feature that people desire today, or even any time. We can, then, legitimately ask about the specific semantic contribution of the PPrt inflection to the meaning of the word *desired*.

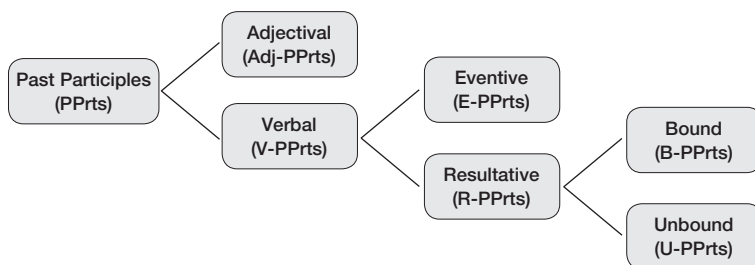
Whatever answer we give to this question, one may naturally expect PPrtS’s temporal orientations to be conditioned, in one way or another, by aspectual classes

1. In fact, they are often called PASSIVE PARTICIPLES in Romance languages, instead of PAST PARTICIPLES. Needless to say, they integrate both features hierarchically (*past* being, arguably, higher than *passive*).

of predicates. In my attempt to deal with these factors, I will leave aside PPrt's combinations with most auxiliary verbs (with the exception of *estar* in section 6, for reasons that will become clear in a moment). I will thus confine myself to “bare PPrt's” as postnominal modifiers. I will also concentrate on inflected PPrt's (that is, PPrt's with gender and number), because PPrt's in compound tenses, which bear no inflection, are subject to other well-known morphological irregularities² and apply to all verbs. Consequently, these PPrt's are not conditioned by the interpretive differences and the lexical and syntactic restrictions that will concern us here.

One may show his or her roadmap at the beginning of the journey, or perhaps at the end. I prefer to display mine at the beginning, especially so since my roadmap does not quite coincide with others, more frequently consulted. The classification of Spanish PPrt's that I will be using is as follows:

(1) A classification of Spanish Past Participles



Non-divided PPrt's in (1) may admit further divisions, but these fall beyond the scope of this paper. My main concern here will be the last part of the classification, that is, the division of R-PPrt's in B-PPrt's and U-PPrt's, which—I will show—has a number of both syntactic and interpretive consequences. This is a lexical division; more specifically, it hinges on aspectual properties of the verbs these participles are derived from. On the contrary, the first branching in the picture is categorial, since Adj-PPrt's, I will argue, are adjectives and V-PPrt's are verbs. The central classification, E-PPrt's vs. R-PPrt's, is basically Kratzer (2000)'s and Embick (2004)'s, but it will be placed here at a different point in the picture, again for categorial reasons: English resultative passives are taken to be adjectival by most authors, but I will argue that Spanish R-PPrt's (derived from transitive verbs) are verbal, rather than adjectival categories. This is fully compatible with the idea that Adj-PPrt's may be R-PPrt's as well (possible divisions among Adj-PPrt's will not be considered here).

Let me remark that the meaning of PPrt's involves the interaction of a number of different ingredients. The first factor is voice, since PPrt's are derived from transitive and unaccusative verbs through some externalization process. The second is

2. Mostly related to contracted PPrt's. For example, there is some disagreement on the grammaticality of *Han electo a Juan* ‘They have elected John’, as opposed to *Han elegido a Juan* ‘They have elected John’, but there is no disagreement on the fact that both options are acceptable in *Juan ha sido {electo / elegido}* ‘John has been elected’.

lexical aspect, and particularly telicity distinctions on the PPrt's morphological bases. The third factor is the information necessary to relate the eventive-resultative distinction to the two other factors. There is little doubt that eventive interpretations of PPrt's are related to voice, but the connection between the notion of resultativeness and that of lexical aspect is more intricate. A part of the intricacy comes from the fact that PPrt's involve grammatical aspect, not just lexical. Another part follows from the notion of 'result', a polysemic word in current theoretical grammar.

2. Obtaining results

Embick (2004)'s resultative passives express states resulting from events. This is one of the possible interpretations of (2):

- (2) The door was opened.

In this reading, (2) means that a certain door is in the state of having become open. In the eventive interpretation, (2) is a passive sentence corresponding to some active counterpart (possibly, *Someone opened the door*). As it is well-known, *be* passives are not ambiguous between eventive and resultative readings in other languages, since different auxiliaries are chosen: for example, German is said to choose *werden* for eventive passives and *sein* for resultatives; Spanish would choose *ser* for eventive passives and *estar* for resultatives, etc. As regards Spanish, it is controversial whether some pure stative verbs take *ser* 'be' passives (De Miguel 1999; Mendikoetxea 1999b; Marín 2000), but candidates decrease if one bears in mind that stativity is conditioned by viewpoint aspect, genericity and other variables.³ Being aware of these possible exceptions, I will maintain the usual association of *ser*-passives and eventive passives.

I prefer to apply the term *passive* to PPrt's rather than sentences, taking for granted that PPrt's lexicalize series of syntactic projections. Besides copulative structures, V-PPrt's appear in other syntactic structures which may be sensitive

3. Perfective tenses of stative verbs typically give rise to inceptive interpretations (then, eventive), as in (ia). It is imperfective tenses, then, that seem to induce stative readings in these cases:

- (i) a. La noticia fue conocida ayer. [*Conocida* 'learned, received, found out']
'News were known yesterday'
- b. Su obra era bien conocida por los especialistas. [*Conocida* 'known']
'His/her work was well-known by experts'

Other stative predicates likely to be candidates to *ser* passives include *apreciar* 'appreciate' as in (ii):

- (ii) La novela rosa fue apreciada por la burguesía española en el siglo XIX.
'Romance novels were appreciated by Spanish bourgeoisie in the XIX century'.

But notice that, even if no overt action is involved in (ii), the verb *apreciar* 'appreciate' allows for imperatives (*Aprecien ustedes, por favor, la belleza del cuadro* 'Please appreciate the beauty of the picture') and progressives, and may also be a complement of *persuadir* 'persuade' or *convince* 'convince', among other classical tests for eventive predicates. In any case, the remaining true exceptions, such as *temer* 'fear' or *querer* 'love, want' require further investigation.

or insensitive to the E-R distinction. These include PPrtS as nominal modifiers in so-called *reduced relatives*:

- (3) Una rama arrancada de un árbol.
 ‘A branch ripped off a tree’

One might perhaps say that the E-R distinction is undetermined in (3), but some arguments seem to suggest that we face an ambiguous structure: R-PPrtS are avoided when the grammar provides a lexical item for the adjective in the lower state of causative structures, as in the case of *lleno* ‘full’, *seco* ‘dry’, etc. Verbal PPrtS are possible in these cases, but these are E-PPrtS, not R-PPrtS. Again, I will limit myself to PPrtS as nominal modifiers here (see section 6 for other contexts):

- (4) a. Una piscina llenada. (E-PPrt / *R-PPrt)
 ‘A swimming pull filled up’
 b. La ropa secada. (E-PPrt / *R-PPrt)
 ‘The clothes dried’

This is so because, as generally assumed, E-PPrtS lexicalize events, together with the thematic changes that voice triggers in participants (in fact, no PPrtS are needed for passives in languages with inflectional morphology for voice), whereas R-PPrtS denote the state reached by these actions, a term for which the language might have coined another lexical item.

PPrtS of stative verbs can be postnominal modifiers, but not as R-PPrtS, since they do not result from actions or processes:

- (5) a. La gente odiada.
 ‘Hated people’
 b. Novedades temidas.
 ‘Dreaded news’
 c. Las cualidades poseídas por los objetos que percibimos.
 ‘The qualities owned by the objects we perceive’

They can be thought of as *ser*-PPrtS (or E-PPrtS, in the extended sense of the term intended here; recall fn. 3). The pattern in (5) is rather restrictive, since it cannot be extended to other lexical classes of stative verbs. For example, contact transitive verbs denoting states reject R-PPrtS, as opposed to their active counterparts. That is, the ambiguity found in (6a), which extends to the English verb *touch*, is not extended to (6b), which contains an E-PPrt (unless *tocada* means ‘manipulated’):

- (6) a. Juan tocaba la pared.
 ‘Juan was in contact with the wall’
 ‘Juan placed his hands on the wall’
 b. La pared tocada por Juan. (E-PPrtS / *R-PPrt)
 ‘The wall Juan placed his hands on’

One must bear in mind that when we say that a PPrt is resultative, we are calling on one of the possible interpretations of the notion ‘result’. The noun *result* in the term *RESULT VERBS*, as used by Levin (2010), Levin & Rappaport-Hovav (2013), and Rappaport & Levin (2002, 2010), denotes the outcome of an action culminating in a change of state. These authors are very explicit in excluding what they call *manner verbs* from result verbs; that is, transitive predicates such as *hit*, *kick*, *pour*, *shake*, *shovel*, *slap*, *wipe* and others which, they argue, do not denote change of states (one may say *I wiped the table, but it is still dirty*). From this point of view, the participle *shaken* in (7) expresses perfectiveness, but denotes no result:

- (7) a. A shaken rug.
b. The rug was shaken, but not cleaned.

Applying Embick’s distinction to (7), we will have a resultative passive built out of a non-result verb, that is, a verb denoting an action which does not end up in a change of state. Since R-PPrts denote states, something seems necessary to clarify in which specific sense a R-PPrt is resultative.⁴

Kratzer (2000) convincingly argued that the meaning of participles in resultative passives is close to that of resultative perfects. These are perfects which describe effects of (mostly recent) past situations, as in *I have lost my wallet*.⁵ I will endorse this interpretation, and I will apply it to Spanish PPrt, but let me first point out that it hinges on another reading of the notion ‘result’, since resultative perfects do not imply state changes, but rather natural outcomes of previous situations. In fact, in Mittwoch (2008) it is argued that the term *resultative perfect* is more complex than previously thought. She proposes that this concept admits a strong interpretation, conditioned by lexical factors, and a weak reading, subject to conventional implicatures.

In any case, it seems to me that Kratzer’s proposal on PPrt as lexical items involving perfect information and voice information constitutes an interesting way forward to account for the meaning of PPrt. At the same time, the temporal-aspectual factor (that is, the presence of “hidden HAVE”) intersects with *Aktionsart* information. Let me explain why. Consider the following minimal contrast, based on the R-PPrts of two transitive verbs in Spanish:

4. See Borik & Reihart (2004) on related aspects of the telicity vs. perfectivity distinction. I will follow Embick (2004) in not applying Kratzer (2000)’s distinction between *target states* (transitory reversible states) and *resultant states*. I will thus associate R-PPrts to resultant states. Target state PPrt might be considered a subtype of Adj-PPrt. Needless to say, possible results of unergative verbs (as in *Mary has cried*) are not linguistically relevant. On PPrt denoting non-reversible states, see below.
5. The literature on resultative perfects and related issues is too extensive to be mentioned here. Main references include Klein (1992), Michaelis (1994), Mittwoch (1988, 1995, 2008), Iatridou, Anagnostopoulou and Izvorski (2001), Katz (2003), Alexiadou, Rathert & von Stechow (2003), Pancheva & von Stechow (2004), among many others.

- (8) a. Un niño castigado.
 ‘A {punished/grounded} child’
 b. Un edificio vigilado.
 ‘A guarded building’

There is a clear semantic difference between these expressions: in an out of the blue scenario, (8a) is about a child who has been punished, but (8b) is not about a building which has been guarded; it is rather about a building which is being guarded. In these paraphrases we are taking Speech Time to be the proper Evaluation Time. If we shift this temporal point to the past, the interpretive difference becomes even clearer:

- (9) a. Me acerqué a un niño castigado.
 ‘I went over to a punished child’
 b. Me acerqué a un edificio vigilado.
 ‘I went over to a guarded building’

Sentence (9a) says that I went over to some child who had been punished at some point before my going over to him, and also that the state of being punished held or remained at that specific temporal point. On the contrary, (9b) does not mean that I went over to some building which someone guarded in the past, before I went over to it. It rather means that I approached a building which was being guarded at the time of my approaching it. Certainly, the state of “being guarded” might have started earlier, but this is irrelevant for the interpretation of (9b).

Notice that the paraphrase given for (9a) locates the punishment before the approaching, while in (9b) the two actions involved (that is, watching and approaching) are taken to be simultaneous.⁶ There is little doubt that these differences follow from lexical aspect, namely the telicity of *castigar* ‘punish’ vs. the atelicity of *vigilar* ‘guard’, but the grammar allows us to add temporal information able to anchor the PPrt’s implicit tense to an overt temporal expression. In fact, temporal adverbs locating events tend to reject R-PPrts, and favor E-PPrts:

- (10) a. Vi [un edificio fuertemente vigilado hace años, no ahora].
 ‘I saw a building heavily guarded years ago, not now’
 b. Un artículo publicado ayer en la prensa de la tarde.
 ‘An article published yesterday in the evening press’

In the absence of this temporal information, there is a marked tendency to interpret PPrts as explained. Could we extend the temporal orientation implied by PPrts to the future? Since the perfective information hidden in the PPrt is anchored in Speech Time by default, the expected answer is “no”, as in (11a). But the context

6. To be more precise, a punctual event is included in the interval provided by the atelic predicates.

may provide the relevant tense information necessary for the anchoring process to be possible. This happens in (11b), where some virtual action is induced by a prospective tense:

- (11) a. *Un edificio vigilado mañana.
 ‘A building guarded tomorrow’
 b. Una explicación ofrecida mañana no serviría para nada.
 ‘An explanation given tomorrow would be useless’

Needless to say, the temporal interpretation of R-PPrts depend on contextual differences such as these, but also on lexical (i.e. aspectual) distinctions, as (8) suggest. In certain cases, the asymmetry in (8) extends to the nominals derived from these verbs. Notice that the noun *punishment* is ambiguous, and applies to the two eventualities relevant in (8a). This noun may refer to the state following the act of punishing, as in the *The punishment lasted for one week*, but it may also designate the very act of punishing, as in *The punishment occurred at school*. The Spanish noun *castigo* ‘punishment’ shares this property. On the other hand, a distinction of this sort cannot be applied to nouns such as *guard*, *vigilance*, or its Spanish counterpart *vigilancia*.

The semantic difference in the interpretation of PPrtS such as those in (8) has been noted in descriptive studies on Spanish, often *in passim* and specifically referring to copulative sentences with the auxiliary *estar* (sometimes called *state passive* or *stative passive*). In these works, it is made clear that the meaning of PPrtS is related to the simultaneousness (Spanish *simultaneidad*) or non-simultaneousness of the eventualities they express, determined in relation to some other tense: Bello (1847: § 439), GRAE (1962: § 460, 464; 1973: § 3.12.10), Roca Pons (1958: 226 and ff.), Fernández Ramírez (1986, chapter 7). For more recent discussion, see Yllera (1999), García Fernández (2006) and Di Tullio (2008). These differences were appropriately related to lexical aspect in classical grammars. More exactly, the simultaneous interpretation was correctly associated with atelic predicates (often called *imperfective verbs*, as in Fernández Ramírez 1986: 13, or *permanent verbs* in that tradition). The reference to some earlier time implied by PPrtS such as *castigado* in (8a) was restricted —correctly, again— to telic predicates, often called *perfective verbs*, as well as *desinent verbs* (esp. *verbos desinentes*) in that tradition. See, for example, GRAE (1931: § 460; 1973: § 3.12.10).

The variable often overlooked in the grammatical tradition is the simple fact that, as (8) shows, auxiliary verbs are not indispensable to convey the semantic differences on implicit tense interpretations in PPrtS: these are interpretive differences conveyed by the PPrtS themselves. I will argue that *castigado* is a bound PPrt (B-PPrt), and *vigilado* is an unbound PPrt (U-PPrt). That is, B-PPrtS are R-PPrtS of telic predicates. As it is obvious, I cannot choose the label ‘telic PPrtS’ because R-PPrtS denote states, hence atelic eventualities. In fact, both B-PPrtS and U-PPrtS take duration adjuncts, as expected:

- (12) a. Un niño castigado durante toda la semana.
 ‘A boy grounded for the whole week’
 b. Un edificio vigilado durante meses.
 ‘A building guarded for months’

Both are also compatible with the verb *seguir* ‘keep, follow’, which, according to Marín (2000), selects for unbounded eventualities:

- (13) a. El niño seguía castigado.
 ‘The child remained grounded.’
 b. El edificio seguía vigilado.
 ‘The building remained being guarded’

As we have seen, R-PPrts induce temporal interpretations conditioned by aspectual factors. They are not limited to state change PPrt, since retrospective interpretations are bound to perfectivity, not to result predicates:

- (14) Un balón golpeado con mucha fuerza.
 ‘A ball kicked with great strength’

The B-PPrts *castigado* can thus be seen as the lexicalization of at least three elements:

- 1) A verbal form with phi-features (arguably, located at NumberP and GenderP).
- 2) A telic PPrt. As such, it licenses a hidden HAVE (arguably, in AspP). This is the crucial component which gives rise to the retrospective reading described above.
- 3) A passive form, since it corresponds to a transitive verb. This licenses a hidden BE (AuxVP) or perhaps a VoiceP projection, in more modern approaches.

I am not particularly interested in comparing the specific ways in which the externalization process of the internal argument (required by voice information) can be carried out in a formal analysis.⁷ However this is achieved, a complementary anchoring process of HAVE will apply, either to Speech Time or to some other Reference Time. Even so, the possibility of having free (i.e. non-anchored) embodied perfects, somehow similar to non-controlled PROs, is an interesting option. In fact, overt *have* seems to be unanchored in sentences such as *Not to have ever smoked a cigarette is almost unimaginable*.

7. Sleeman (2011) adopts Kayne (1994)’s antisymmetric structures in relative clauses, and proposes a raising movement of the verb’s internal argument to a CP specifier. Externalization might also be achieved in reduced relatives if the PPrt projection is headed by a null category (PRO) identified by predication and moved out from the lower complement position through the relevant aspect and phi projections. Other options exist.

How about U-PPrts, such as *vigilado* ‘guarded’? These PPrtS induce simultaneous interpretations. Are we then supposed to say that they contain no “hidden HAVE”? In that case, how do we get their meaning? Someone might perhaps argue that U-PPrts are verbal forms containing VOICE, but devoid of PERFECTIVITY. One reason to reject this analysis is the simple fact that it does not provide the simultaneous interpretation in U-PPrts; another reason is the disassociation of PPrtS and embodied perfects. Finally, if only VOICE were present in these PPrtS, we would expect the eventive reading to be their only possible interpretation, contrary to fact.

I will, thus, dismiss this option and I will argue that both B-PPrtS and U-PPrtS contain a hidden HAVE, so that the difference with B-PPrtS hinges on the interpretation of HAVE. The (somehow paradoxical) idea that the perfect allows for imperfective interpretations is common in the abundant literature on this tense, both in English and Spanish. Usual examples include sentences such as *John has worked here since 1980* or *Mary has always lived in this city*. This interpretation of the perfect, often called CONTINUOUS,⁸ focalizes a state, regardless of whether or not its exact beginning is merely supposed or explicitly mentioned. Interestingly, we do not need a perfect to get this reading. A U-PPrt is sufficient, as in (15a):

- (15) a. Un criminal perseguido por la policía.
 ‘A criminal chased by the police’
- b. Un coche averiado en muchas ocasiones no es una buena inversión.
 ‘A car many times broken down is not a good investment’

Somehow paradoxically again, experiential perfects do not have to be perfects, at least overt perfects. The temporal information on frequency provided in (15b) licenses this reading.⁹ We may, thus, conclude that differences in the temporal interpretation on R-PPrtS follow from the way the perfects they encapsulate are interpreted. A last step is necessary to avoid circularity: the conditions which define varieties of perfects crucially depend on *Aktionsart* variables (that is, resultative interpretation are obtained from telic predicates and continuous interpretation require atelic predicates). The natural conclusion is, simply, that R-PPrtS involve perfects. The rest follows from the lexical conditions that perfects need in their different interpretations.

8. In a number of restricted cases, continuous perfects are subject to dialectal variation in Spanish, since the ongoing reading is necessarily obtained in certain varieties, while it seems to be optional in others. On this geographical variation see Lope Blanch (1972), Moreno de Alba (1978), Mackenzie (1995), Laca (2009) and Henderson (2010), among others. On similar effects in Portuguese, see Schmitt (2001). On these and other close relevant factors in the interpretation of Spanish perfects, see also García Fernández (1995), Squartini (1998) and the papers in Carrasco Gutiérrez (2008).

9. Thanks to L. García Fernández for pointing out to me the possibility of extending hidden HAVE in PPrtS to experiential perfects. On the relevance of temporal adjuncts to induce experiential perfects, see Michaelis (1994), Katz (2003) and Mittwoch (2008), among others.

3. Main properties of resultative participles

I will assume the standard analysis according to which PPrtS are derived from verbs which provide overt internal arguments (whether nominal or sentential). This includes transitives and unaccusatives, and excludes unergatives. I will also endorse the widely accepted view according to which most Spanish pronominal verbs are unaccusatives: Mendikoetxea (1999a,b), Sánchez López (2002), Mackenzie (2006), Di Tullio (2008), and much related work. This means that the pattern illustrated by (8) applies to both transitive and unaccusative verbs.¹⁰ Here are some examples of the transitive group or R-PPrtS:

- (16) a. B-PPrtS DERIVED FROM TRANSITIVE VERBS: *un niño castigado* ‘a punished child’; *ladrones atrapados por la policía* ‘thieves caught by the police’; *aviones derribados por el enemigo* ‘aircrafts shot down by the enemy’; *un trabajo terminado* ‘a finished work’.
- b. U-PPrtS DERIVED FROM TRANSITIVE VERBS: *un edificio vigilado* ‘a guarded building’; *una ciudad rodeada de montañas* ‘a city surrounded by mountains’; *un libro acompañado de un CD* ‘a book coming with a CD’; *un apartamento habitado por recién casados* ‘an apartment inhabited by new-weds’.

In (17) I provide some examples of R-PPrtS of unaccusative verbs, again in both paradigms:

- (17) a. B-PPrtS DERIVED FROM UNACCUSATIVE VERBS: *un barco hundido* ‘a sunked ship’; *un joven enamorado* ‘a young man in love’; *una pareja separada* ‘a separated couple’.
- b. U-PPrtS DERIVED FROM UNACCUSATIVE VERBS: *acusaciones basadas en hechos* ‘accusations based on facts’; *gente empeñada en molestar* ‘people determined to disturb others’; *un capitel apoyado en una columna* ‘a capital leaning against a pillar’.

As it is well-known, participles of unaccusatives verbs are not morphologically distinguished from those of transitives. A large number of potential cases of ambiguity is, then, expected; that is, cases such as *hundido* ‘sunk’, which is both the past participle of *hundir* ‘trans. sink’ and *hundirse* ‘intrans. sink’.¹¹ In this paper I will concentrate on the pattern in (16), and I will leave the extension in (17) for future work.

10. Standard examples of PPrtS of non-pronominal unaccusatives include *muerto* ‘dead’, *llegado* ‘arrived’ or *salido* ‘gone out’, as in *los pasteles salidos del horno* ‘cakes from the oven’.

11. Notice that attempts to avoid the postulation of pronominal unaccusatives in the lexicon (that is, *-rse* infinitives) are not able to explain the considerable degree of variation that one finds in Romance languages concerning the presence or absence of this morpheme. Perhaps Portuguese is the clearest example of the lexical variation existing in this regard (Souza 1999, Martins 2003, Duarte 2000), but dialectal variation is attested in Spanish as well (NGLE, § 41.14).

We have seen that both types of R-PPrts are atelic, since they denote states. Are we then supposed to find categorial differences among them? Most authors take English resultative passives to be adjectival, rather than verbal. As I have argued, A-PPrts may be also R-PPrts, but the basic distinctions in (1) imply that R-PPrts are verbal categories as well. Let me explain why.

It is worth remembering that the majority of the well-known conditions identifying adjectival participles in English (Wasow 1977, Levin & Rappaport 1986, Embick 2004, McIntyre 2013, etc.) do not apply to Romance languages. These include the prenominal position in examples such as *the broken toy* or *the painted house*; prefixation with *un-*, as in *unopened*, *unconvinced*, and incompatibility with double objects: **It remained given scant attention* (McIntyre 2013). The very fact that none of these tests can be applied to Romance languages suggests that other syntactic criteria should be adopted in order to tell apart adjectival and verbal participles.

Notice that phi features will not do the work. If we make the apparently reasonable assumption that verbal forms lack gender in Romance languages altogether (as opposed to, say, Semitic), we will be forced to sustain that participles of *be* passives in Romance are not verbal forms, a peculiar conclusion which few would endorse.

I will argue that the two paradigms in (16) are formed by verbal categories. First of all, it is hardly controversial that postnominal participles passing verbal tests in so-called *reduced relatives* must be considered verbal participles. Crucial tests include secondary predicates. Since these predicates are unavailable for adjectives, the PPrt in (18) must be verbal forms:

- (18) a. Un acusado considerado culpable.
 ‘A defendant found guilty’
 b. Un concejal elegido alcalde.
 ‘A councilman elected mayor’
 c. Una ventana hecha pedazos.
 ‘A window shattered into pieces’
 d. Estudiantes de Secundaria encontrados borrachos en los botellones de fin semana.
 ‘Secondary school students found drunk at weekend booze parties’

They also include participles taking infinitival complements in causative sentences, as in (19a); in some verbal periphrases, as in (19b), and in VP set phrases, as in (19c):

- (19) a. “El lío de las pruebas hechas desaparecer” (*El País*, 30/01/2012)
 ‘The mess of the proofs that were made disappear’
 b. “Renfe tendrá que pagar a Alsthom por los trenes dejados de comprar” (*El País*, 6/06/1992)
 ‘Renfe will have to pay Alsthom for the unbought trains’
 c. Garbanzos puestos a remojo.
 ‘Chickpeas left to soak’

Agentive *by*-phrases are more controversial tests for verbal participles, since they are shared by nominalizations, *-able* adjectives, etc. They are accepted by post-nominal participles as well, and specifically by those in our two initial paradigms:

- (20) a. Un niño castigado por su maestra.
 ‘A child punished by her teacher’
 b. Un edificio vigilado por la policía.
 ‘A building guarded by the police’

So-called agentive adverbs are admitted in both paradigms as well:

- (21) a. Un niño injustamente castigado adrede.
 ‘A child unjustly punished on purpose’
 b. Un edificio concienzudamente vigilado.
 ‘A building thoroughly guarded’

A standard test for English adjectival participles is the possibility of admitting the verb *seem* in predicate structures (Levin & Rappaport 1986, Embick 2004, Sleeman 2011). Notice that the application of this test to Spanish would lead us to conclude that *diseñado* ‘designed’ is an adjectival participle in (22), even if it is compatible with a *por* ‘by’ complement, an agentive adverb in *-mente* and a locative adjunct:

- (22) Este edificio parece diseñado cuidadosamente por un arquitecto surrealista en una noche de insomnio.
 ‘This building seems to be carefully designed by a surrealist architect in a sleepless night’

I will argue that *diseñado* is a verbal PPrt in (22). More generally, I will conclude that participles in both paradigms in (16) are verbal, rather than adjectival forms:¹² They are derived from transitive verbs, they are interpreted according to

12. Needless to say, the term *adjectival participle* would be uncontroversial in these cases if by *adjectival* we mean *predicational*. This is a sense close to that in which PPs modifying nominals are called sometimes *adjectival*, and those modifying verbs are called *adverbial*. I just want to make it clear that I am using the term *adjectival* from a strictly categorial point of view here, which means that verbal participles are verbs, and adjectival participles are adjectives, even if derived from verbs. Well-known cases of so-called *hybrid formations* are attested. The one in (i) is a common example, since *muy* ‘very’ seems to call for an adjective, whereas the other two PPs are supposed to modify verbs:

(i) Un político corrupto muy protegido por sus colegas en los últimos años.
 ‘A corrupt politician very much protected by his colleagues in late years’

I will take *protegido* to be a U-PPrt verbal participle corresponding to the paradigm in (16b). Although I will not deal with so-called *hybrid participles* in this paper, I would like to point out that, after one concedes that a verbal form displays gender features in Romance, acceptance of the fact that it may also be compatible with degree modifiers typically targeting adjectives does not seem to be a radical move. On participles with diminutive and superlative affixes, see Bosque (1999), Marín (2000) and Di Tullio (2008).

the meaning of these verbs and they are not in the lexicon. Moreover, they do not come up in dictionaries, and we cannot blame lexicographers for their absence. Adjectival participles do appear in dictionaries (see Martín García 2008 for differences in their lexicographic analysis). They might be derived from verbs through a lexical process of conversion, but these processes are known to give rise to only partial regularities.¹³

Let me concentrate on telicity, the main feature distinguishing the two main classes of verbs giving rise to R-PPrts. Some transitive verbs are well-known to pass standard tests for both telicity and atelicity. These are verbs such as *proteger* ‘protect’ or *visitar* ‘visit’, among others:

(23) *Proteger un lugar peligroso* {en / durante} media hora.
‘to protect a dangerous place {in / for} half an hour’

(24) *Visitar un museo* {en / durante} una hora.
‘to visit a museum {in / for} an hour’

13. On conversion processes to derive Spanish Adj-PPrts from V-PPrts, see Kornfeld (2005), Di Tullio (2008), and NGLE (§ 27.9-27.11), among others. A large number of adjectival past participles are interpreted as states (sometimes, even properties) derived from causative verbs and entirely devoid of eventive content. This interpretation corresponds to Embick (2004)’s *stative passives*, as in *The window was open*, except for the fact that stative passives do not seem to be passives. This conversion process makes paraphrases of verbal and adjectival participles rather systematic in a number of cases, including the following:

Participle	Meaning as a verbal participle	Meaning as an adjectival participle
<i>aislado</i>	‘isolated’	‘alone’
<i>alargado</i>	‘lengthened’	‘long’
<i>animado</i>	‘encouraged’	‘lively’
<i>callado</i>	‘silenced’	‘quiet’
<i>complicado</i>	‘complicated’	‘difficult’
<i>divertido</i>	‘amused’	‘funny’
<i>educado</i>	‘educated’	‘cultured, learned’
<i>elevado</i>	‘raised, upgraded’	‘high’
<i>equivocado</i>	‘confused, taken wrong’	‘wrong’
<i>limitado</i>	‘limited’	‘short’
<i>ocupado</i>	‘occupied’	‘busy’
<i>reducido</i>	‘reduced’	‘small’
<i>resumido</i>	‘resumed’	‘short’

Unfortunately, this pattern cannot be extended to other adjectival participles, including *abandonado* ‘careless’, *acertado* ‘correct’, *apagado* ‘dull, lifeless’, and many more. Another conversion process (again, productive, but lexically restricted) is necessary for so-called *active PPrt*s, such as *confiado* ‘confident’, *organizado* ‘organized, efficient’, etc. On these Adj-PPrts see Varela (1992, 2006), Borgonovo (1999), Feliú Arquíola (2008), and Di Tullio (2008), among others.

The natural prediction is that these verbs may fit in the two paradigms in (16). The telic readings of these PPrtS will be associated to the non-simultaneous interpretation; that is, to the existence of some prior action resulting in the subsequent state that R-PPrtS lexicalize:

- (25) a. Un lugar peligroso protegido por la policía en media hora.
 ‘A dangerous place protected by the police in half an hour’
 b. Un museo visitado en solo una hora.
 ‘A museum being visited in just one hour’

In parallel with this pattern, the atelic readings of these verbs are associated to the simultaneous interpretation:

- (26) a. Un lugar peligroso protegido por la policía desde hace tiempo.
 ‘A dangerous place protected by the police for quite a while’
 b. Un museo visitado a todas horas durante semanas.
 ‘A museum visited at all times for weeks’

Again, the presence of an explicit Evaluation Time makes this interpretation more natural. If the DP in (26b) were the complement of the verb *vi* ‘I saw’, the simultaneous interpretations would link the implicit HAVE in the PPrt to the past tense in *vi*, thus giving rise to a typical imperfect tense pattern.

Other grammatical criteria for (a)telicity are known. Only transitive and unaccusative telic verbs are able to appear as infinitives following the preposition *sin* ‘without’ if this periphrasis is interpreted as a negation of PPrtS (Bosque 1990, Bosque & Gutiérrez-Rexach 2009):

- (27) a. Vasos sin llenar. [TELIC, TRANSITIVE]
 ‘Unfilled glasses’
 b. Gente sin contratar.¹⁴ [TELIC, TRANSITIVE]
 ‘Non-hired people’
 (28) a. *Gente sin esperar. [ATELIC, TRANSITIVE]
 ‘Non-awaited people’
 c. *Enemigos sin odiar. [ATELIC, TRANSITIVE]
 ‘Non-hated enemies’

14. That is, *sin contratar* approximately means ‘not hired’ in (27b). If this interpretation is not intended, the infinitive does not have to be transitive:

(i) “Hay tanta gente sin trabajar que la gente no se queja demasiado” (*El Herald*, 14/10/2013)
 ‘So many people remain unemployed that people do not complain too much’

- (29) a. Mercancía sin llegar a su destino. [TELIC, UNACCUSATIVE]
 ‘Merchandise not arrived at its destination’
 b. *Niños sin gritar al salir del colegio. [ATELIC, UNERGATIVE]
 ‘Children not screaming after school’

Transitive atelic verbs able to be coerced into telic predicates will then fit this pattern. The prediction is met:

- (30) a. Edificios sin proteger. [TELIC, TRANSITIVE]
 ‘Non-protected buildings’
 b. Museos sin visitar. [TELIC, TRANSITIVE]
 ‘Non-visited museums’

This behavior extends, for the most part, to *a medio* ‘half’ as in *torres a medio construir* ‘half-built towers’.

Another potential test for (a)telicity is provided by the periphrasis “*estar* + PPrt”, which has been said to be restricted to telic predicates (Marín 2000, Jiménez & Marín 2002):

- (31) a. *El camión está empujado por los mecánicos. [Jiménez & Marín (2002)]
 b. *La pared está mirada. [Marín (2000)]

Since the periphrasis seems to be adequate for both resultative and non-resultive PPrtS, the prediction is that *castigado* will pass the test, and also that *vigilado* will do so if interpreted as an atelic predicate coerced into a telic one:

- (32) a. El niño está castigado.
 ‘The child is punished’
 b. El edificio está vigilado.
 ‘The building is guarded’

But the prediction is not met, since it provides a wrong interpretation for (32b): one according to which this expression is about some vigilance process which has reached an end, followed by a subsequent state. This is not true. The PPrt *vigilado* in (32b) expresses an unbounded state denoted by the PPrt of the atelic verb *vigilar*. The natural conclusion is that PPrtS selected by the auxiliary *estar* are not restricted to telic predicates. I will develop this idea in section 6.

4. Bound past participles

In the previous section I have shown that the members of our two paradigms of R-PPrtS (B-PPrtS and U-PPrtS) share a number of features: they are verbal forms, they are syntactically derived from transitive verbs, and they denote atelic eventual-

ities. We have also seen that the division has consequences for temporal interpretation and hinges on aspectual grounds, so that some coercion processes are expected.

I will now concentrate in B-PPrts. Since in this paper I am only dealing with the paradigm in (16), B-PPrts will be PPrtS derived from telic transitive verbs. Do we need some other feature to obtain R-PPrts out of these verbs? The answer seems to be positive, since transitive achievements tend to reject R-PPrts:

- (33) Las especies marinas descubiertas por Darwin.¹⁵ (E-PPrt / *R-PPrt)
 ‘Marine species discovered by Darwin’

Although this might suggest that B-PPrts are interpreted as results of accomplishments, I will suggest that the reason for the asymmetry in (33) hinges on the idea that achievements are temporarily bound eventualities. As pointed out in relation to (11), adjuncts of temporal location favor E-PPrts.

Telic transitive verbs giving rise to R-PPrts may be classified in three groups:

- (34) TRANSITIVE VERBS WITH B-PPRTS
- a. Causative or result verbs (that is, change of state verbs), such as *castigar* ‘punish’.
 - b. Manner verbs, in Levin & Rappaport terminology, such as *golpear* ‘hit’.
 - c. Incremental verbs, such as *leer* ‘read’.

There exist some interesting differences among members of these three classes. We have seen that a somehow paradoxical property of B-PPrts is the very fact that they are atelic verbal forms morphologically derived from telic predicates. We may thus predict that temporal adjuncts selecting for atelic predicates will reject the PPrt’s verbal bases, but will nevertheless be compatible with the PPrts themselves. Temporal prepositions of origin are good candidates to show this asymmetry:

- (35) a. *Castigaron al niño desde anoche.¹⁶
 ‘They punished the child since last night’
- b. Un niño castigado desde anoche.
 ‘A boy grounded since last night’

One might deduce from (35) that PP adjuncts of duration will give rise to a similar asymmetry. Interestingly, the prediction is met for classes (34b) and (34c), but not for class (34a). When PP adjuncts of duration modify incremental processes, they coerce them into activities inducing the so-called *incomplete* or *unfinished*

15. However, *descubierto* ‘discovered’ may, arguably, be a R-PPrt in *Te olvidas de que la penicilina ya está descubierta* ‘You seem to forget that penicillin is already discovered’. The role of the adverb *ya* ‘already, finally’ in these sentences is briefly addressed in section 6.

16. Iterative interpretations are expected, but not relevant here, as in *Me han castigado desde que estoy en este colegio*. ‘They have (repeatedly) punished me since I am in this school’.

reading (Vendler 1967, Dowty 1979, Rothstein 2004, among many others), as in *I read the novel for about an hour*. When transitive telic manner verbs (group “b”) are combined with adjuncts of duration, they become iterative or semelfactive. On the contrary, causatives (group “a”) allow durational PPs to modify the resultative state that their past participle is able to lexicalize:

- (36) Mis padres me han castigado durante el fin de semana.
 ‘My parents have grounded me for the weekend’

As it is obvious, there is no ongoing action of punishing taking place all along one weekend in (36).¹⁷ In fact, the grammaticality of (36) constitutes a strong argument for having the two eventualities required by change of state predicates as syntactic layers (a conclusion arrived at by many authors on independent grounds¹⁸), as well as a straightforward argument against the so-called *lexical integrity hypothesis*. The examples in (37), taken from the Internet, have been accepted by all the native speakers who were exposed to them. All correspond to causative, telic transitive verbs with B-PPrts (group (34a)):

- (37) a. “No solo olvidé ese viejo libro de poemas sino que también lo perdí durante años”
 ‘I do not only forgot that old poem book, but I also lost it for years’
 b. “Casi me congeló cuando abrieron la puerta durante un buen rato”
 ‘I almost freeze when they opened the door for a while’
 c. “Nos pareció que nos habían abandonado durante cuatro días”
 ‘I thought that they had abandoned us for four days’
 d. “Se sentó durante dos horas y media ante los senadores”
 ‘S/he sat for two and a half hours in front of the senators’
 e. “La compañía había cortado el suministro durante unas horas”.
 ‘The company had cut the supply for a few hours’

One may find exceptions to this pattern, but the factors involved make it suspicious that they constitute proper lexical classes. For example, some B-PPrts reject durational adjuncts in cases in which we know, from extralinguistic evidence, that the states they denote cannot be changed or reversed (*asesinado* ‘murdered’, *roto* ‘broken’, etc.). The relevant question is whether or not this is part of the lexical

17. On this structure, see Piñón (1999), Rothstein (2004), and Csirmaz (2012), among others. Needless to say, topic-like (sometimes called “frame”) interpretation of adverbs is disregarded. In these cases, a punctual event takes place at some unspecific point inside the interval that the duration PP provides:

(i) Durante el fin de semana, mis padres me han castigado.
 ‘Sometime along the weekend, my parents have punished me’

18. In fact, too many to be mentioned. This long list includes Jackendoff (1990), Pustejovsky (1992), Kemmer (1993), Levin & Rappaport (1995, 2005), Folli (2001), Hale & Keyser (2002), Rothstein (2004), Ramchand (2008) and many more.

information that these predicates encode: their *lexicalized meaning* in Levin & Rappaport (2013)'s sense. Notice that a positive answer would require the postulation of at least two lexical entries for *roto* depending on the abstract vs. concrete nature of the affected object, as in (38):

- (38) a. *Un vaso roto durante unas horas.
 'A glass broken for some hours'
 b. Negociaciones políticas rotas durante unas horas.
 'Political negotiation broken off for some hours'

It is no wonder that classical arguments in debates between lumpers vs. splitters lexicologists apply here. Splitters will probably argue that *break* means 'interrupt' in (38b), not in (38a). Lumpers might add that the split option would not work, since promises, rules, marriages and other things able to be broken do not quite fit in an abstract vs. concrete distinction, such as the one in (38). Instead of going into this (scarcely productive) debate, I find it more interesting to remark that participles in (38) are exactly matched by the tensed verbs they correspond to:

- (39) a. *Rompí la botella durante unas horas.
 b. "Se reconocía que se habían roto las negociaciones durante tres horas por la cláusula anteriormente mencionada" (*Diario de Navarra*, 17/8/2011)
 'It was known that negotiations have been broken for three hours because of the previously mentioned clause'

Piñón (1999) argues, contra Dowty (1979), that rejection of duration adverbs by non-reversible predicates follows from a conversational implicature.¹⁹ In fact, possible exceptions to the generalization on duration adjuncts in group (34a) are not associated to varieties of state changes, but rather to the pragmatic effects mentioned, as well as to the specific lexical structures of predicates. The neat differences between *alquilar* 'rent' and *comprar* 'buy' are a good example of the latter:

19. Piñón's proposal may be reinforced with new arguments. Syntactic access of duration adjuncts to lower states of causative verbs clearly depends on pragmatic variables. I owe the following contrast to Ana Bravo (p.c.):

- (i) a. Un funcionario del Gobierno enviado a Estrasburgo durante varios meses.
 'A government official sent to Strasbourg for several months'
 b. Una carta enviada a Estrasburgo durante varios meses.
 'A letter sent to Strasbourg for several months'

Whereas (ib) is about some letter which comes and goes (or about several copies of the same letter), this iterative reading is strange—although not entirely impossible—in (ia). This DP is about an official which goes to Strasbourg and stays there for several months. I assume that no one wants the (lexical or encyclopedic) knowledge about letters and officials to be part of the licensing conditions on adjuncts modifying lower states of transitive verbs. Most probably, the necessary information to tell anticausative and passive readings apart is partially pragmatic as well, as suggested by Sánchez López (2002: 85)'s examples *Se rompió el vaso* 'The glass was/got broken' [ANTICAUSATIVE OR PASSIVE] and *Se rompió la promesa* 'The agreement was broken' [ONLY PASSIVE]. See also Levin & Rappaport-Hovav (1995) on the same issue.

- (40) a. Un apartamento alquilado durante el verano.
 ‘An apartment rented for the summer’
 b. Un apartamento comprado durante el verano
 ‘An apartment bought during the summer’

That is, (40a) is ambiguous in a sense not available for (40b), since the PP with *durante* ‘for’ is able to modify the lower state in the case of *alquilar* ‘rent’, but not in that of *comprar* ‘buy’. Since causatives are built up from lower states, it is a specific basic property of these (namely their capacity to denote lasting or durable situation) that the verb will end up displaying.

I will conclude that, except for cases such as these, access of the *durante* PPs to the caused state is a characteristic of causative verbs with R-PPrts. As for the differences pointed out between *desde* ‘since’ and *durante* ‘for’, it is subject to linguistic variation, and ceases to exist in Portuguese (Moia 2001), as well as French and other languages. This is fully compatible with the view, accepted here, that resultant states are part of the syntactic representation of causative predicates.

Failure of duration adjuncts to access lower states of verbs in groups (34b) and (34c) is fully expected.²⁰ I would like to emphasize that excluding incremental transitive telic predicates from causatives basically means that they are not interpreted as results of state changes: reading something is not “causing it to be read” (see Moreno Cabrera 2003 for the opposite option), but being involved in a process of following something along a course. There is no contradiction between this analysis and the fact that the PPrt *leído* ‘read’ is understood as a B-PPrt: *Un libro leído* ‘a read book’ is a book that has undergone a reading process. An action has been carried out on a book, and the PPrt designates the subsequent state of this object, whether perceptible or not. As a B-PPrt, *leído* is subject to the tense interpretation analyzed above. On causatives (group “a”), the result state is part of the lexical, as well as syntactic, structure of the telic predicate. In other words: the eventive component of causative verbs does not go beyond the very notion of cause, all the other semantic information resting on the subsequent state.

There is one characteristic in the interpretation of duration adjuncts with causative verbs which, it seems to me, should be emphasized: it is the fact that duration adjuncts make it almost impossible to assign these verbs to standard eventuality

20. Phase adverbs, such as *still* and *already* and their equivalents in other languages, as well as phase auxiliaries, such as *seguir* ‘keep, follow’, are licensed on pragmatic, rather than strictly lexical, information: Löbner (1989), Garrido (1992), van der Auwera (1993), König (1997), Krifka (2000), ter Meulen (2004), among others. For this reason, it is hard to exclude sentences such as (i) on syntactic or lexical grounds:

(i) ??El libro sigue traducido.
 ‘The book remains translated’

In fact, if one invents a machine that turns translated books into copies in their original language by reversing the translation process, but the machine fails, (i) would not be impossible. If this is so, the irregularity of this sentence is not a direct consequence of the lexical class to which the verb *traducir* ‘translate’ belongs.

types. Let me briefly explain why. There is no doubt that the verb *kidnap* designates an accomplishment in (41a), but what type of eventuality does it exactly denote in (41b)?

(41) a. The aggressor kidnapped the girl in one minute.

b. A mother kidnapped her daughter for five years.

The answer could hardly be “a state”, since the VP of sentence (41b) does not designate “a state of some mother”. It cannot be an activity either, since activities are dynamic events, and there is no ongoing kidnapping process in (41b). It cannot be an accomplishment coerced into an activity either, because (41b) is not about some unfinished, incomplete or interrupted action. Finally, it cannot be an achievement, for it contains an adjunct of duration. The reason why the eventuality in (41b) does not fit in standard types is simply that it is compositional. Temporal modifiers provide usual tests for aspectual types if the former target the predicates that these adjuncts modify, not some subevent in their lexical structure. It is exactly this subevent that the adjunct PP *for five years* modifies in (41b).

The question of how lower states are to be represented at the lexical structure of causative verbs is a much debated issue for both syntactic and semantic reasons. As regards the former, I do not want to claim that lower states coincide with PPrtS (which are more complex morphological items), but they might correspond to PPs (roughly, as IN KIDNAP, IN PUNISHMENT, etc., as suggested by Hale & Kayser 2002, Mateu 2002 and others). In any case, choosing one option among the ones that present themselves at this point is not essential for the purpose of this paper.

As regards the semantic side of the issue, causative predicates denote actions resulting in changes in a few domains: those targeted by the (useful but fuzzy) notion of AFFECTEDNESS. These changes are scalar according to Rappaport & Levin (2002, 2010), although I am not sure whether they would like to include verbs such as *kidnap* in their paradigm of result verbs. In any case, the list of domains in which changes take place is known not to be extremely long. A complete detailed typology of state changes is yet to be constructed (even if Fillmore’s Frame Semantics contains very promising approaches to it; see also Beavers 2013 and references therein). Causative B-PPrtS denote changes in a few domains, such as location (*movido* ‘moved’), integrity (*roto* ‘broken’), presence or existence (*borrado* ‘erased’), place or position (*guardado* ‘kept’; *colgado* ‘hanged’; *abierto* ‘open’; *sentado* ‘seated’), possession (*comprado* ‘bought’), psychological (*asustado* ‘frightened’) of physical (*maniatado* ‘handcuffed’) states, social acceptance (*prohibido* ‘forbidden’), and a few other notions. Granted, result states are not just physical, perceptible or noticeable effects of actions, since they might involve more subtle notions.²¹ Even so, a typology of possible changes of states, or at least the relevant domains affected by them, seems to be feasible.

21. The PPrt *perdido* ‘lost’ is a good case in point, since the domain affected by the relevant change of state is not location, but rather knowledge of location or awareness.

5. Unbound past participles

As in the case of B-PPrts, several classes of U-PPrts are expected. I have already argued that U-PPrts are not derived from stative verbs. These include most Kimian states (as understood in Maiernborn 2008 and Rothmayr 2009; see also Marín 2013, as regards Spanish); that is, stative predicates which provide bound properties relative to internal states of individuals: *creer* ‘believe’, *saber* ‘know’, *preferir* ‘prefer’. These verbs are allowed in *ser*-passives (recall (5)), and may also give rise to Adj-PPrts, not to verbal R-PPrts. Other transitive state verbs denote causal relations: *implicar* ‘imply’, *conllevar* ‘carry, entail’, *suponer* ‘suppose’, etc. As expected, these verbs lack U-PPrts.

Main groups of transitive verbs with U-PPrts may be divided as follows:

(42) TRANSITIVE VERBS WITH U-PPRTS

- a. Activity verbs, such as *vigilar* ‘guard’.
- b. Extent verbs, such as *ocupar* ‘occupy’.
- c. Verbs expressing constituency and other similar physical properties, such as *formar* ‘constitute’.

The group in (42a) corresponds to transitive verbs denoting activities. Verbs in this class denote actions, and often movement as well: *buscar* ‘seek’, *perseguir* ‘chase’, *pasear* (in *pasear al perro* ‘walk the dog’), *visitar* ‘visit’, *frecuentar* ‘frequent’. I will take this class to include the few Davidsonian states that qualify as transitive verbs, such as *esperar* ‘wait’ or *contemplar* ‘contemplate’. These verbs denote actions, even if no movement is involved: they allow for imperatives and progressive forms; they can be complements of verbs such as *persuade* and pass other similar tests for events. The PPrts in (43) are, then, U-PPrts:

- (43) a. El paisaje contemplado desde el mirador.
‘The landscape looked at from the balcony’
- b. El día más largamente esperado.
‘The most hoped-for day’

Group (42b) is, perhaps, the most productive. This group has received quite a bit of attention in the literature. Basic references, from various points of view, include Langacker (1986), Talmy (1983, 1996), Matsumoto (1996), Gawron (2005, 2009) and Koontz-Garboden (2011); as regards Spanish, see Bosque (1999), Valenzuela & Rojo (2003), Horno Chéliz & Cuartero Otal (2010) and Delbecque (2014). Verbs of this group are hard to classify in eventuality typologies. Apparently, they refer to stative interpretations of eventive verbs, mostly causative. The list includes verbs such as *unir* ‘unite’, *cubrir* ‘cover’, *border* ‘border’, *rodear* ‘surround’, *ocupar* ‘occupy’, *cruzar* ‘cross’, among others. They involve spatial interpretations, in the sense of physical effects of actions totally or partially affecting the space occupied by the theme. Notice that (44) is an ambiguous sentence, since it may designate an action or a state:

- (44) La nieve cubría la pradera.
 ‘Snow covered the meadow’

In the so-called “stative interpretation” of extent verbs, this sentence denotes a situation in which the snow is located all along the meadow. BY-complements of these verbs denote agents in the active interpretations, and spaces measuring some physical object in the stative reading:

- (45) a. Un lago bordeado por una estrecha carretera.
 ‘A lake bordered by a narrow road’
 b. Un lago bordeado por un pelotón ciclista.
 ‘A lake skirted by a rider squad’
- (46) a. Un camino cerrado por una tapia.
 ‘A path closed by a wall’
 b. Un camino cerrado por la policía.
 ‘A path closed by the police’

E-PPrts of these verbs are licensed in the active reading, in which they are pure accomplishments, and rejected in the stative interpretation, as expected. On similar grounds, perfective tenses of telic predicates entail finished actions. Since extent predicates apparently involve no action, they are not compatible with them, again as expected:

- (47) a. Un pelotón ciclista {bordeó / bordeaba} el lago.
 ‘A rider squad {skirted-PRET / skirted-IMPERF} the lake’
 b. Una estrecha carretera {#bordeó²² / bordeaba} el lago.
 ‘A narrow road bordered-PRET / bordered-IMPERF} the lake’

I will now depart a little bit from this more-or-less standard picture. These verbs display a number of eventive properties, as Gawron (2005, 2009) pointed out. If I am driving in a highway and a small crack appears on the cement, I may observe that it starts growing, even if the crack does not physically change. Moreover, I can perfectly say *The crack widened in seconds*, even if no actual (temporal) widening process took ever place. It seems, then, that the paradox that extent verbs point towards is the very fact that their stative nature accounts for some of their properties, but not for others. One might certainly derive the stative reading from the eventive interpretation, but this does not seem to be a lexical process. In fact, dictionaries do not inform us of these readings. They do not contain entries such as *cover*: ‘to be located along a space’, or as *connect*:

22. Since perfective tenses are compatible with life-effect interpretations of stative predicates, *bordeó* may be appropriate here if the road does not exist anymore.

‘to lie along two things linking them’, or the like. As in the case of V-PPrts being absent from dictionaries, I do not think we should blame lexicographers for this.

Let me add some other arguments on the quasi-eventive or semi-eventive nature of these supposedly stative verbs. I have no doubts that, if one has to choose between saying that “a fence is doing something” in *A fence prevents the passage of non-residents*, and “a fence is in a certain state” in that utterance, few speakers would choose the second option. Moreover, the progressive is natural in (48a), a quite unusual property for a pure stative predicate. The verb *do* is also natural in (48b):

- (48) a. A fence is preventing drivers from accessing the new park.
 b. What the beam does is support the column.

In a similar sense, it would not be strange to argue that some action is described not just in (49a), a standard accomplishment, but also in (49b), a standard extent state configuration:

- (49) a. I connected my computer to the TV.
 b. A tunnel connected the two buildings underneath the alley.

This is the sense in which we may say that physical objects “are able to do” just a few things: connect, separate, cover, circumvent, occupy, etc. Furthermore, this active component allows us to explain why the borderline between groups “a” and “b” in (42) is fuzzy as regards some activity verbs, including *proteger* ‘protect’, *amenazar* ‘threaten’ or *empujar* ‘push’, among others. If verbs of group “a” denote actions, and verbs of group “b” denote states, we will be forced to say that the activity verbs just mentioned become state verbs in the examples in (50), even if they are not extent verbs, not a very elegant conclusion:

- (50) a. El tejado está protegido por una gruesa capa de paja.
 ‘The roof is protected by a thick layer of straw’
 b. Los caribeños están otra vez amenazados por un ciclón tropical.
 ‘Caribbeans are threatened again by a tropical cyclone’
 c. Los piñones de las ruedas traseras están empujados por muelles.
 ‘Rear wheel’s cogs are pushed by springs’

Finally, if extent verbs were to denote pure states, lexically derived from actions, their PPrtS would be stative as well. This would reduce their paradigm to the one in (5), but the reduction is not correct, since the grammatical properties of these stative verbs are quite different, as we have seen. I will suggest that extent verbs denote NON-DYNAMIC EVENTS. No movement and no progress is associated to them. No intention could be either, since no consciousness in their participants

is involved. In spite of lacking all these features, an eventive component is a basic part of their meaning.²³

Group (42c) of U-PPrts include PPrtS such as *constituido* ‘constituted’, *formado* ‘formed’, *compuesto* ‘composed’ or *integrado* ‘integrated’. They resemble extent verbs in various respects: (i) they seem to be stative PPrtS derived from equally stative verbs; (ii) they allow for non-agentive *por* ‘by’ complements, (iii) they derive from verbs which allow active and stative readings (*componer* ‘compose’, *constituir* ‘constitute’).

Extent verbs can be thought of as lexically built up out of a few basic spatial prepositions. I suggest the following: WITH (*unir* ‘unite’, *atar* ‘tie’, *conectar* ‘connect’, *acompañar* ‘accompany’), ALONG (*borderar* ‘border’, *rodear* ‘surround’, *surcar* ‘plow’), ON (*cubrir* ‘cover’, *tapar* ‘cove, block’), IN, AT (*ocupar* ‘occupy’, *habitar* ‘inhabit’). Perhaps BY can be added to integrate group (42c), as in *formar* ‘form’, *componer* ‘compose’.

I will not propose specific lexical structures for verbs with U-PPrtS in these two groups, but, as in the case of B-PPrtS, some productive generalizations are obtained, both on their aspectual nature and their semantic constitution. As regards the former, the three groups of verbs in (42) contain eventive predicates, even if non-dynamic events are only weakly eventive; as regards the latter, we may think of classes (b) and (c) as involving similar basic lexical structures, built upon a very narrow set of prepositions.

6. The auxiliary verb *estar* and the concept of result

The auxiliary verb *estar* ‘be’ has been traditionally associated to the notion of result in many explicit and implicit ways. I have focused on PPrtS in nominals all along the paper, but it seems unavoidable to say something on this everlasting issue in Spanish grammar. Let me first point out that the traditional question “Are *estar* + PPrt sentences real passives?” is hard to formulate in most approaches to formal grammar, if only because constructions are compositional expressions: A PPrt may or may not contain ASPECT, VOICE or other features, and these pieces of information will account for its syntactic and semantic properties. This applies to *ser*-passives as well, since these are just extensions of a set of V-PPrtS (arguably, E-PPrtS). Given that the question on whether or not “*estar* + PPrt” sentences are passive sentences cannot be properly formulated, I will reframe it in selectional terms: “On what specific grounds does *estar* select for a V-PPrt?”

This question was not avoided in descriptive grammars. In fact, most traditional accounts argue —whether or not implicitly following Gili Gaya (1943)’s old answer — that the V-PPrtS accepted by *estar* express the result of a finished action, thus making the analysis hinge on the notion ‘result’. Accounts along these lines make a number of both correct and incorrect predictions, some of them crucially dependent of our interpretation of this very notion. In fact, these analyses correctly

23. They might also be understood as DYNAMIC STATES if the notion “dynamic” is not related to state changes, but to forces keeping or maintaining state of affairs, as understood in Copley & Martin (to appear). Thanks to B. Laca for pointing out this possibility to me.

predict that PPrtS such as *temido* ‘feared’, *odiado* ‘hated’, *conllevado* ‘implied’, or *preferido* ‘preferred’ will reject *estar*, since they derive from verbs denoting no action. Another correct prediction is the fact that possible active readings of stative verbs will be admitted by *estar*.²⁴

Straightforward predictions end here, but there are some interesting partial predictions. Those analyses predict that verbal PPrtS denoting no result will be excluded. The accuracy of this prediction crucially depends on the interpretation of the term *result*. Marín (2000) and Jiménez & Marín (2002) take a restrictive interpretation of this notion (basically, Levin & Rappaport’s). They claim that incremental bounded events with no result, which they call *intergressive* after Egg (1995), reject *estar*. Their prediction is not correct. I retrieved the examples in (51) from the Internet, and all the native speakers I exposed them to accepted them as quite natural.²⁵ However, the interpretation of the notion ‘result’ that these authors adopt predicts them to be ungrammatical:

- (51) a. “El recital de anoche estuvo interpretado por el prestigioso Cuarteto Quiroga”
 ‘Tonight’s recital was interpreted by the prestigious quartet Q’
 b. “El puente ya estaba cruzado, y una sala llena de piscinitas con distintos peces llamó mi atención”
 ‘The bridge was finally been crossed over, and a hall full of little pools with various fish called my attention’
 c. “Lo curioso es que nunca tuvo mucho interés en hablar de la obra, solo quería asegurarse de que estaba leída por mí”
 ‘The funny thing is that s/he never was interested in talking about the play. S/he just wanted to be sure that I had it read’
 d. “De los primeros veintitrés libros, veintiuno estaban leídos por Nigel Planer, y dos por Celia Imrie”
 ‘Of the first 23 books, 21 were read by N.P., and two of them by C.I.’

24. The examples in (i) contain PPrtS corresponding to the stative interpretations of some verbs. These PPrtS are shown to be incompatible with *estar*, with some degree of variation. The active reading of the same verbs is fully compatible with this auxiliary, as shown in (ii):

- (i) a. ??El paisaje está mirado desde el balcón. [*Mirar* ‘look up’]
 ‘The landscape is looked up from the balcony’
 b. ?*El dinero está poseído por Juan. [*Poseer* ‘own’]
 ‘The money is owned by John’
 (ii) a. El asunto está mirado con objetividad en ese artículo. [*Mirar* ‘analyse, judge’]
 ‘The matter is looked up objectively in that press article’
 b. Juan está poseído por el dinero. [*Poseer* ‘posses’]
 ‘John is possessed by money’

See Di Tullio (2008) for other similar pairs. I agree with an anonymous reviewer on the fact that the pattern in (i) improves in generic environments.

25. This is compatible with the fact that this pattern might be subject to dialectal variation. An anonymous reviewer rejected the sentences in (51) after explicitly acknowledging that he or she was a native speaker of Spanish.

I will thus adopt the other interpretation of *result*, that is, the one conditioned by an implicit HAVE, in the sense explained above. My analysis of “*estar* + V-PPrt” will be based on two factors. The first one is syntactic and lexical; the second one has a pragmatic or discourse-oriented flavor.

Here is the first component. I will argue that V-PPrts selected by *estar* are R-PPrts. Remember that R-PPrts are opposed to E-PPrts, not to atelic PPrts, and also that R-PPrts denote states, even if derived from eventive predicates. Take this simple contrast:

- (52) a. El detenido fue acompañado por un policía.
 ‘The detainee was (SER) accompanied by a policeman’
 b. El detenido estuvo acompañado por un policía.
 ‘The detainee was (ESTAR) accompanied by a policeman’

Sentence (52a) includes an E-PPrt. It expresses an event, not necessarily associated to movement,²⁶ whereas (52b), which includes a R-PPrt, expresses a state: that of being accompanied by someone. This implies that the transitive verb *acompañar* ‘accompany’ denotes an atelic action (with or without movement) in both sentences.

Roca Pons (1958) early suggested that unification of the different complements of *estar* (mainly adjectives and participles) can be achieved if we assume that changes expressed by PPrt taking *estar* are “circumstantial”, thus implicitly assuming that they are expressed through stage-level predicates. Stative verbs taking *ser*-PPrts, as those in (5), are individual level predicates. They all reject *estar* and they all are incompatible with resultative interpretations, again as expected.

Both B-PPrts and U-PPrts take *estar*. This is also expected, since this is a division among R-PPrts. The examples in (51) are also predicted to be grammatical, because all contain B-PPrts. In fact, given the temporally bound interpretation of *result(ative)* assumed here, *estaban leídos* ‘were read’ in (51d) denotes the state corresponding to *habían sido leídos* ‘had been read’. In this paraphrase, HAVE provides the retrospective interpretation, and BE contributes the information on VOICE. As it is obvious, this analysis forces me to sustain that extent verbs and some other associated to them are (at least weak) eventive predicates, a point that I have argued for in section 5.²⁷

Adj-PPrts, not addressed here, may also be R-PPrts, but this does not change the categorial difference depicted in (1). Their meaning and their grammatical

26. I disregard the interpretation of *fue* as a form of the verb *ir* ‘go’. In this interpretation, irrelevant here, (52a) means ‘The detainee went there accompanied by a policeman’

27. I have also argued that verbs such as *esperar* ‘wait’ or *contemplar* ‘contemplate’ denote actions, even if they involve no movement. U-PPrts of these verbs are also possible:

- a. En el cuadro, la bahía está contemplada desde el mirador de la montaña.
 ‘In the picture, the bay is contemplated from the viewpoint in the mountain’
 b. “Esas fiestas estaban esperadas por la comunidad, así que no estoy de acuerdo en nada con esa medida” (*Reporte Confidencial*, 13/1/2014)
 ‘These festival were waited by the community. Thus, I do not agree with that measure’

properties will be different, as a consequence of this categorial distinction. For example, if we consider the PPrt *olvidado* ‘forgotten’, we will see that it gives rise to a distribution of this sort:

- (53) a. Un paraguas olvidado (V-PPrt, E-PPrt)
 ‘A forgotten umbrella’
 b. Un asunto olvidado (Adj-PPrt, R-PPrt)
 ‘A forgotten affair’

The auxiliary *estar* is appropriate in (53b), not in (53a), as expected. Paraphrases with *excused* or *pardoned* might be appropriate in (53b), not in (53a), since one expects the adjectival reading of the PPrt to be in the lexicon, as opposed to the verbal one. As argued above, nothing of this relieves us from the task of specifically deriving Adj-PPrts from V-PPrts (or from verbal roots directly) through conversion processes that may be added to the one I have very roughly sketched in footnote 13. This is an important task to be accomplished, assuming that Adj-PPrts are not to be individually marked in the lexicon.

I will now introduce the second component in the “*estar* + PPrt” periphrasis, a factor that I have not been able to find in the literature on this construction. I will not study it in depth here, but I will point out why it is relevant and how it is related to the discussions above. I will call it THE PHASAL EFFECT factor, since it is crucially associated to the so-called phasal (aspectual) adverb *ya* ‘already, yet, finally’, present in (51b). Notice that the speaker who says *El puente ya estaba cruzado* ‘The bridge was finally crossed over’ implies that he or she has accomplished an action which activates some implicit frame concerning one or more supposed or scheduled tasks, a factor no doubt related to a well-known property of the phase adverb *ya*: that of confirming expected situations. In the abundant literature on the Spanish adverb *ya*, this aspect of the interpretation of the adverb has been pointed out by many authors, with various degrees of explicitness (see Girón 1991, Koike 1996, Ocampo & Ocampo 2000, Delbecque 2006, Delbecque & Maldonado 2011).²⁸ Notice that this factor accounts for the fact that *ya* favors resultative perfects: there is no PPrt in (54a), but *ya* induces an interpretation according to which some expected stage-level situation of certain suitcases has been reached. A parallel scenario is needed for (54b) and (54c), but now it is provided by the combination of *ya* and the R-PPrt of a transitive verb. This corresponds to a standard resultative perfect interpretation.

- (54) a. Las maletas (ya) están listas.
 ‘Suitcases are finally ready’
 b. Las maletas (ya) están hechas.
 ‘Suitcases are already packed’
 c. El periódico de hoy (ya) está leído.
 ‘Today’s news paper is (already) read’

28. The reading ‘It had been crossed by someone before’ is also possible, but not relevant here.

Interestingly, the possibility of omitting *ya*, or its counterparts in other languages, is rarely mentioned in the extensive literature on this adverb. *Ya* may, in fact, be omitted in (54b) and (54c), and is not present in (51c). If we simply say R-PPrts denote stage-level states resulting from actions or processes, we will no doubt miss this extensional factor in their interpretation. The natural question is, then, how does the PPrt supply the meaning provided by the phasal adverb *ya*. I suggest that, for the most part, all this is a consequence of the way in which the “hidden HAVE” that R-PPrts incorporate is interpreted. The adverb *ya* may be omitted if we know, from extralinguistic evidence, that a certain task is expected after others. But this entailment, clearly triggered by the phasal adverb, is also associated to resultative perfects inside the (so-called) “extended-now”, as (54) suggests. The question whether or not this —acknowledged, pragmatic— factor in the interpretation of R-PPrts interacts with the lexical and syntactic conditions discussed above is left for further research.

7. Conclusions

In this paper I have presented a general classification of Spanish PPrt. I have then concentrated on verbal PPrt, and, among them, only resultative PPrt have been studied with some detail. I have argued that...

- ...the concept of ‘result’ has several grammatical interpretations, but two of them stand out as the most prominent: one is temporally bound and the other one is conditioned by lexical aspect. Adopting one or the other makes different predictions as regards the grammatical behavior of PPrt. The concept of ‘result’ relevant for R-PPrt is the former, and it derives from the interpretation of a hidden perfect. Sub-classes of R-PPrt are established on aspectual bases and give rise to notional classifications standing on a limited array of semantic notions.
- ...the eventive-resultative distinction on passives is especially productive if interpreted as a distinction on PPrt. R-PPrt are opposed to E-PPrt. Some basic, well-known semantic distinctions among perfects may be expressed without the auxiliary *haber* ‘have’ (hence, without overt perfects). This implies that this auxiliary verb is embodied in R-PPrt. Semantic differences among R-PPrt are derived from the ways in which the implicit HAVE they incorporate is interpreted.
- ...R-PPrt derived from transitive verbs are not adjectival, but verbal lexical items.
- ...The *ser/estar* auxiliary distinction on passives basically correlates with the E-PPrt / R-PPrt distinction. A large number of PPrt derived from apparently stative predicates are not persistent exceptions, since these predicates can be proved to be weakly eventive.

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An investigation on the comprehension of Persian passives in typical development and autism*

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Abstract

Autism Spectrum disorders have attracted the attention of many researchers working on communicative and pragmatic competence, but much less attention has been paid to the investigation of narrow syntax in this condition. On the other hand, in the field of acquisition, passive sentences (and related constructions) are known to be a late acquisition, and have been argued to be a case of late maturation. In this paper we report results on the comprehension of passive sentences in Persian-speaking children with typical development and with Autism Spectrum Disorders. In our findings, not all ASD children perform in the same way, rather those considered to be high-functioning perform like the typically developing, and the low-functioning have a clearly poorer performance. These results shed some light on former studies (Perovic et al. 2007, Terzi et al. 2014), with seemingly inconsistent results due to the fact that heterogeneous populations were tested.

Keywords: passives; comprehension; acquisition; Autism Spectrum Disorders; Persian.

Resum. *Una investigació sobre la comprensió de les passives del persa en casos de desenvolupament típic i d'autisme*

Els desordres d'espectre autista han interessat molts investigadors de la competència comunicativa i pragmàtica, però no s'ha parat gaire atenció a l'estudi de la sintaxi estricta d'aquesta condició. Per altra banda, en l'àmbit de l'adquisició, s'ha observat que les oracions passives (i construccions relacionades) s'adquireixen tard i s'ha proposat que són un cas de maduració tardana. En aquest

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article descrivim els resultats d'un experiment de comprensió de les oracions passives en nens parlants del persa amb desenvolupament típic i amb autisme. Les nostres investigacions mostren que no tots els nens autistes tenen el mateix comportament: mentre que els nens autistes amb elevada funcionalitat obtenen resultats similars als dels nens amb desenvolupament típic, els nens autistes amb funcionalitat baixa tenen uns resultats clarament pitjors. Aquestes dades aporten una nova perspectiva als estudis previs (Perovic et al. 2007, Terzi et al. 2014), que mostraven resultats aparentment inconsistents a causa de l'heterogeneïtat de les poblacions analitzades.

Mots clau: passives; comprensió; adquisició; autisme; persa.

Table of Contents

1. Introduction	4. Results
2. Background	5. How do these results compare with those in the literature?
3. Persian passives. Experimental design	References

1. Introduction

The acquisition of verbal passive is delayed in numerous languages; amongst them English (Maratsos, Fox, Becker and Chalkley 1985), Spanish (Pierce 1992), Dutch (Verrips 1996), Japanese (Sugisaki 1999), Greek (Terzi and Wexler 2002), Russian (Babyonyshev and Brun 2003) and Catalan (Parramon 2009). Some authors have argued that this late comprehension of passives can be attributed to their sparse presence in the input: in many languages of the world passives are uncommon in colloquial speech and thus in child-directed speech. Consequently, children get very little exposure to the construction. Such is the argument in Demuth, Moloi and Machobane (2010), who further claim that in languages with more abundant passive production, e.g. Sesotho, children comprehend passives earlier. However, this line of argument is not compelling, due to the fact that child language acquisition exhibits numerous cases of early acquisition of underrepresented structures – cases of acquisition under poverty of stimulus (see for instance the acquisition of Slavic multiple interrogatives, very rare in the input; Grebenyova 2011, Gavarró, Lewandowski and Markova 2010). Side by side with these cases, the opposite scenario emerges: constructions which are abundant in the input are late acquisitions in children – this is what Babyonyshev et al. (2001) termed late acquisition under abundance of the stimulus – see the example provided in the same paper on the Russian genitive of negation. Given these findings, compounded with some empirical problems with the research on Sesotho (see Crawford 2008), maturation has been hypothesised to be the source of the late comprehension of passives, whether maturation of A-chains (Borer and Wexler 1992), maturation of theta-transmission (Fox and Grodzinsky 1998), maturation of the properties of defective phases (Wexler 2004), or maturation of the mechanisms regulating intervention (Orfitelli 2012). Of these theoretical approaches, Borer and Wexler (1992) has

been recast in Wexler (2004), motivated by some theory-internal modifications as well as the need to generalise the analysis to related constructions (the acquisition of raising in particular). Fox and Grodzinsky's (1998) claims were based on experimental results that have never been replicated. Therefore we focus on the two most recent approaches. Wexler (2004) argues that passive delay follows from the fact that immature grammars define *v* as a phase, whether defective or not (the Universal Phase Requirement). As a consequence, movement out of defective *v* (e.g. passive *v*) is problematic in immature children. Orfitelli (2012) claims that the source of passive delay stems from intervention effects in those structures with raising of an argument across another, structurally intervening, argument. Both Wexler (2004) and Orfitelli (2012) predict that children will have problems in the comprehension of passives, and discrepancies occur in further empirical predictions of their hypotheses: with monoargumental constructions, Wexler (2004) predicts that delay can occur under specific conditions, while for Orfitelli (2012) monoargumental constructions should not give rise to intervention effects. Since in this paper we only deal with passives, our results do not bear on the debate between the Universal Phase Requirement and the intervention effect analysis. Granting that the comprehension of passives develops in children as a result of maturation, there is another empirical issue that we can start to address: at what age is maturation completed? Earlier work on passives indicated problems in comprehension until age 5 (Borer and Wexler 1992), but later work shows that adult-like behaviour is not attained until at least 6.5 (Hirsch and Wexler 2006, Hirsch 2011).

The age at which maturation of the mechanisms underlying the passive is attained may of course vary in populations subject to developmental linguistic deficits, or perhaps cognitive deficits in general. This line of research was initiated in work on passives in Down's syndrome (Perovic 2006) and continued with Autism Spectrum Disorders (Perovic, Modyanova and Wexler 2007) and William's Syndrome (Perovic and Wexler 2010). In this paper we pursue the work of Perovic and colleagues by looking at passive comprehension in Autism Spectrum Disorders in a language not investigated formerly, Persian.

The paper is organised as follows. In section 2 we characterise Autism Spectrum Disorders (ASD hereafter) and provide the little background on passives in ASD in the literature and detail the questions addressed in our paper. In section 3 we sketch the grammatical properties of Persian relevant for our study and present our experimental design. In section 4 we report the results of our experiment. We draw conclusions in section 5.

2. Background

Autism was first documented in the clinical literature in 1943 and characterised by communicative disorders (Kanner 1943). According to the 1994 definition by the American Psychology Association, autism comprises symptoms in communication, social interaction and behavioural patterns (such as stereotyped and repetitive behaviour). Since 2013 Autism Spectrum Disorders include Asperger's syndrome (APA 2013), although the literature does not attribute the individuals with

Asperger's syndrome any linguistic disorder, and we do not consider any subject with this diagnosis in our paper.

Often ASD individuals are divided into groups according to their cognitive capacities; they also present a wide spectrum of linguistic abilities: while some appear to have a profound linguistic disability and are quasi mute, others appear to develop full linguistic abilities. Given that communicative disorders are central to ASD, research has focused on the pragmatic capacity of ASD subjects (see, amongst others, Lee, Hobson and Chiat 1994, Baron-Cohen, Tager-Flusberg and Cohen 2000, Tager-Flusberg 2001). The results of this research point to problems in turn-taking, literal interpretation of idioms, irony and metaphors, in interpreting the mental states of other individuals (Theory of Mind), and in deixis.

Much less is known about the strictly linguistic competence of ASD. Some phonological deficits have been identified, in particular in the production of intonational contours, since they are often stereotyped and monotone (McCann and Peppé 2003). There are some shared characteristics of ASD and another developmental disorder, Specific Language Impairment (see Leyfer et al. 2008), although the similarities may not hold for the whole population (for example, non-word repetition is a clinical marker of SLI and is also found in some ASD children, but not all, Kjelgaard and Tager-Flusberg 2001). Recently, Perovic, Modyanova and Wexler (2013) identified difficulties in the interpretation of reflexives (in contrast to many other populations, e.g. young children and Broca's aphasics, whose problems, if any, occur with pronouns but not reflexives). This led them to conclude that ASD individuals are not simply delayed but impaired in their linguistic abilities. Two studies have considered the comprehension of passives in ASD: Perovic, Wexler and Modyanova (2007) and Terzi et al. (2014). Since these two studies are the point of reference to our own, we describe them in some detail.

Perovic et al. (2007) considered twelve English-speaking children with ASD (mean age: 11;06, age range 6–17) as well as eight children with Asperger's syndrome (AS) (mean age 13;01) and three control groups for ASD and AS children matched on age, verbal and non-verbal IQ level. The subjects were tested with a two-picture matching task; the experiment included 6 items per sentence type (1).

- | | |
|-----------------------------|----------------------------|
| (1) a. Marge kissed Lisa. | b. Homer loves Bart. |
| c. Lisa is kissed by Marge. | d. Bart is loved by Homer. |
| e. Lisa is kissed. | f. Bart is loved. |

While the children with AS were indistinguishable from the control groups, the ASD children were highly impaired, as witnessed by the results in Table 1.

Table 1. Percentage of correct comprehension of passives, English, Perovic et al. (2007)

	actional active	actional long pass	actional short pass	psych active	psych long pass	psych short pass
ASD	78%	36%	39%	67%	26%	30%
K-BIT controls	98%	88%	93%	97%	65%	67%
PPVT controls	92%	82%	88%	91%	55%	55%
TROG controls	96%	69%	79%	89%	28%	42%

Abbreviations: long pass = long passives; short pass = short passives; psych = psychological verbs. K-BIT = Kaufman Brief Intelligence Test; PPVT = Peabody Picture Vocabulary Test; TROG = Test for Reception of Grammar.

Not only their performance was low in psychological passives (e.g. *be loved*), as found in the English-speaking typically developing children (including those in their experiment), but they also performed poorly on actional passives (e.g. *be kissed*).

Terzi et al. (2014) considered passives in Greek, a language in which passive interpretation can be rendered with a reflexive verb or a passive verb, illustrated in (2a) and (2b) respectively.

- (2) a. O Giorgos skepazete.
the Giorgos cover.3SG.NON-ACT
'Giorgos is being covered.'
- b. O papus taizete.
the grandpa feed.3SG.NON-ACT
'Grandpa is being fed.'

The children tested were twenty 5 to 8 year-olds (mean age: 6;06) and twenty age controls. The ASD children were diagnosed using DSM-IV criteria (APA 1994) and ADOS (Autism Diagnostic Observation Schedule, Lord et al. 2000). Importantly, all the ASD children had non-verbal abilities of 80 or above (in the Raven's Coloured Progressive matrices), and therefore were classified as high-functioning.

Children were tested with 6 items per condition (passive verb with passive interpretation, reflexive verb with passive interpretation; we ignore other conditions also tested). The results appear in Table 2.

Table 2. Mean comprehension of passives in percentages (standard deviation in parenthesis), Greek, Terzi et al. (2014) (TD = typically developing)

	passive verbs with passive interpretation	reflexive verbs with passive interpretation
ASD children	66.6% (22.9%)	93.3% (16.6%)
TD children	70% (20%)	94.9 (8%)
adult controls	100%	100%

The statistical analysis of these results indicated that sentence type had a significant effect on comprehension, with passive verbs being less accurately understood than reflexive verbs, but there were no other effects or interactions – i.e. ASD and TD children did not perform differently. The individual analysis (in terms of number of children with ceiling performance) did not reveal any differences between the two groups of children either. Therefore, the results for Greek sharply contrast with those for English, although there is no contrast between the passive constructions of Greek and English to be attributed with the difference.

Our first goal is thus to attempt to resolve this inconsistency in the results of the two studies, by reference to another language, Persian, and also extend the empirical coverage of linguistic research in ASD. Second, we address the more general question of whether subjects with ASD are impaired in the comprehension of passives and, if so, if their performance is similar to that of immature TD children.

3. Persian passives. Experimental design

Persian (also known as Farsi) is a language of the Indo-Iranian branch of the Indo-European family. It is an SOV language with a rich verbal inflectional system. Its active/passive alternation is illustrated in (3).¹

- (3) a. Æli Mina ra did.
 Ali Mina OM saw.3SG
 ‘Ali saw Mina.’
- b. Mina tævæsote Æli did-eh šod.
 Mina by Ali seen.PTCP became.3SG
 ‘Mina was seen by Ali.’

As shown in (3a), the object of a transitive verb is marked with *ra*.² There is some debate regarding the exact nature of *ra*, as it is obligatory with proper nouns and personal and demonstrative pronouns, but does not appear with unspecific, unidentifiable objects (4), and there is a range of cases in between where *ra* is optional (in that respect, it differs from well-known cases of differential object marking, such as those of Spanish).

- (4) Mæn be foghærā pul(*-ra) mi-dæhæm.
 I to poor.PL money(*OM) DUR-give.PRES-1SG
 ‘I give money to the poor.’

1. Abbreviations: DUR = durative, EZ = ezafe, INDF = indefinite, OM = object marker, PRES = present, PTCP = participle, SG = singular.

2. *Ra* is also a topic marker; in that case, *ra* may occur with arguments other than direct objects. Notice that, then, two instances of *ra* may coexist in the same sentence, one as topic marker, one as object marker.

For a summary of the debate on the correct characterisation of *ra*, see Bohnacker and Mohammadi (2012) and references therein. (3b) illustrates the periphrastic passive of Modern Persian – Old Persian had a morphological passive, now lost. The structure in (3b) consists in an argument that has been raised from object position (and has as a consequence no *ra* object marker), followed by a past participle and the passive auxiliary *šodæn* ‘to become’. An optional agentive PP precedes the verb (*tævæsote Āli* ‘by Ali’).

Although there is some controversy about sentences such as (3b), particularly about the status of *šodæn* (see Karimi 1997, Paul 2004, amongst others), we adhere to the view in Nemati (2013) according to which (3b) is a true verbal passive. The arguments to consider it as such are (i) the demotion of the subject, (ii) the promotion of the object to subject position, and (iii) the morphological change in the verb, from an active form to a past participle, and the merge of *šodæn*, inflected for person and tense.

Šodæn can be found in other non-verbal constructions, preceded by nominals (5), when *šodæn* alternates with *kærdæn*, a light verb implying agentivity, and adjectives (6). We refer the reader to Nemati (2013) for a unified account of *šodæn*. The existence of these constructions implies that some sentences with *šodæn* are adjectival, and not derived by A-movement (in a way similar to English verbal passives, which are homophonous to adjectival passives).

- (5) a. Rais kar-e xub-i be u pišnæhad kærd.
 boss job-EZ good-INDF to him offer did.3SG
 ‘The boss offered him a good job.’
- b. Kar-e xub-i (tævæsote rais) be u pišnæhad šod.
 job-EZ good-INDF (by boss) to him offer became.3SG
 ‘He was offered a good job (by the boss).’
- (6) Miz (tævæsote Mina) tæmiz šod.
 table (by Mina) clean became.3SG
 ‘The table was cleaned (by Mina).’

An anonymous reviewer points out that passives rarely occur in child-directed speech and colloquial Persian, where impersonal constructions are largely preferred (although there are no quantitative studies to prove this claim). As indicated above, this does not make the situation in Persian different from that in other languages.

3.1. Experimental design

There is little research on Persian first language acquisition, or ASD (see, however, Zare et al. 2012, Khosravizadeh, Mahabadi and Taghva 2012). To our knowledge, no work has considered passive comprehension in Persian TD or ASD children, although Family (2009) found *šodæn* to be one of the earliest light verbs to be used in the spontaneous productions of a Persian-speaking girl whose productions were recorded from age 1;11. In order to test the comprehension of passives in Persian,

we replicated a picture-sentence matching task designed by Armon-Lotem et al. (submitted) under the auspices of COST Action A33.

The original task was used in a large-scale study with 5-year-old speakers of Catalan, Cypriot Greek, Danish, Dutch, English, German, Lithuanian, Polish, Estonian, Finnish and Hebrew. Children were tested on actives, short passives and long passives; the original experiment balanced items according to gender and half of the items corresponded to female characters, the other half to male characters; since Persian has no grammatical gender, this was ignored in our version of the experiment. Of the original 88 items in Armon-Lotem et al., half were removed due to problems of translation (verbs not having a transitive counterpart in Persian) or cultural appropriateness. The final experiment included 44 items, using a set of 11 verbs (22 active sentences, 11 short passives, 11 long passives), exemplified in (7). This experiment was first reported in Heshmati (2013).

- (7) a. Dokhtær-e koochæk madær ra miboosæd.
 girl-EZ little mom OM kiss.3SG
 'The little girl kisses mom.'
- b. Madær boosid-eh mi-šævæd.
 mom kiss-PTCP DUR-become-3SG
 'Mom is kissed.'
- c. Dokhtær-e koochæk dokhtære bozorg ra nævazeš mi-konæd.
 girl-EZ little girl big OM stroke DUR-does-3SG
 'The little girl strokes the big girl.'
- d. Dokhtær-e bozorg tævæsote dokhtære koochæk nævazeš
 girl-EZ big by girl little stroke
 mi-šævæd.
 DUR-become-3SG
 'Big girl is stroked by the little girl.'

All verbs used were actional (i.e. involving an agent and a theme in their thematic structure), and the same verbs appeared in active and passive sentences; the verbs included *moayene kærdaen* 'examine', *donbal kærdaen* 'chase', *boosidaen* 'kiss', *šane kærdaen* 'comb', *nægħaši kærdaen* 'draw' and 'paint', *hol dadaen* 'push', *bægħæl kærdaen* 'hug', *hæml kærdaen* 'carry', *nævazeš kærdaen* 'stroke', *poošandaen* 'cover', and *eslah kærdaen* 'shave'.³ Because of the properties of Persian verbal constructions, only two of these verbs are simple verbs with a morphological passive marker, one is a complex predicate with a morphological passive marker and the rest are complex predicates passivised through alternation of the light verb. Nevertheless, all of them are the result of verbal passivisation, with raising of an object to subject position – the crucial property for comparison with English and Greek to hold.

3. It should be pointed out that we didn't control for the frequency of the Persian verbs used in the experiment and that this may account for some of the results of ASD subjects.

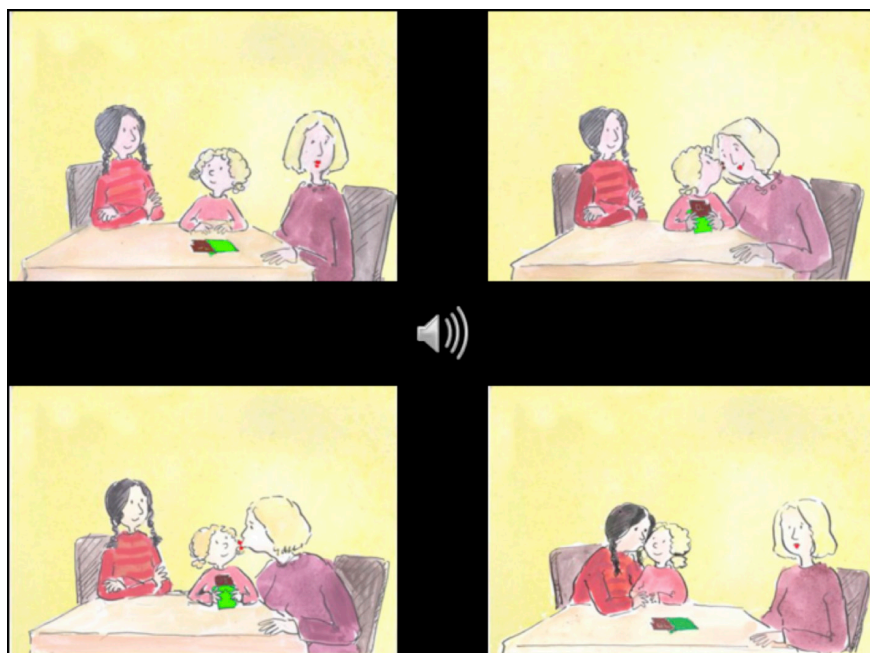


Figure 1. Target picture for (7a) is on the top right.

For each experimental item the child had to choose from a set of four pictures in a screen: one corresponding to the sentence heard, one corresponding to the reverse action (where agent and theme had been exchanged), one with the same action performed by another character and one with no action portrayed. The target pictures were balanced across positions in the screen. All pictures involved three characters, so that mention of two of them was pragmatically felicitous (see O'Brien, Grolla and Lillo-Martin 2006). Crucially, only sensitivity to the linguistic input allows the subject to identify the correct picture. The materials are illustrated in Figure 1.

The order of presentation of the 44 experimental items was randomised into two orders: 1 to 44 and the opposite, 44 to 1. A full relation of the experimental items can be found in the appendix.⁴

3.2. Subjects

Given the lack of any study on the acquisition of passives in Persian TD children, we ran our experiment with a group of 10 TD children (7 girls and 3 boys) from

4. An anonymous reviewer judged sentence 41 ill-formed without a PP complement, and expressed some doubts on sentences 28 and 32. These judgments contrast with those of the second author. We can only add that the results for these three items are not different from those for the other experimental items, and that adults performed at ceiling with all of them.

Tehran, and 10 healthy adult controls. Although, as we will see, the children were slightly older than in the cross-linguistic study of Armon-Lotem et al. (submitted) the results we obtained still allow for a comparison. The ASD children were tested in the Autism Children Charity in Tehran, Iran. Initially fourteen children were to be tested, but four were eliminated from the study due to highly disruptive behaviour; they were all at the low functioning end of the spectrum, and were non-verbal. Ten children (1 girl and 9 boys) were finally tested; they had all been diagnosed of ASD based on the DSM-IV (APA 1994). Details of all subjects, all native speakers of Persian, appear in Table 3.

The ASD children were tested on non-verbal IQ by means of the Ravens Progressive Matrices test, which is used in Iran to test non-verbal IQ level for children aged 5 to 9. The average score of normal developing children of that age is 55%. Table 4 presents the IQ scores of the ASD children who took part in our experiment; on the basis of that score they were further classified as high- or low-functioning (HFA and LFA respectively).

Table 3. Subjects

group	#	mean age	age range
TD	10	6;2	5;6–6;5
ASD	10	8;9	5;5–13;0
adult	10	27;5	

Table 4. Details of the ASD subjects

participant	ASD classification	gender	age	raw score	percentage
1	LFA	male	5	7/36	19.4%
2	LFA	male	6	2/9	22.2%
3	LFA	male	8	5/18	27%
4	LFA	female	12	2/9	22.2%
5	LFA	male	13	5/36	13.8%
6	HFA	male	6	5/12	41.6%
7	HFA	male	10	1/2	50%
8	HFA	male	12	3/4	75%
9	HFA	male	6	13/36	36%
10	HFA	male	8	4/9	44%

3.3. Procedure

Children were tested individually in a quiet place in their schools. In the case of the subjects with ASD, testing was often (but not always) done in presence of their speech pathologist. The experiment was administered using a Macintosh Powerbook computer using Microsoft Power Point to show each slide, on which a sentence had been pre-recorded. If necessary, the experimenter repeated the sentence of the recorded voice. All subjects were given careful instructions before the experiment, and the actual experiment was preceded by an introduction to the characters depicted and two trial items. After hearing the experimental item, subjects had to identify a picture out of four in the screen, and thus the answers didn't require any verbal production. Children were encouraged after each item and after completing the test were given a small present.

4. Results

The results were coded as Target, Reverse, Other agent or No action (the three of them Non-Target). The statistical analysis of the results includes the descriptive statistics and a Logistic Regression model with repeated measures for the response variable Target result with covariates type of sentence and subject group. This analysis was performed with SAS software version 9.2 (SAS System, Cary, NC, USA, 2009).

The results considered come from the responses of the 30 subjects tested (adults, TD children and ASD children). Three subjects failed to answer all questions (low-functioning subjects 4 and 5 didn't answer 5 and 14 items respectively, and one TD child failed to answer one item). The results have therefore been computed on the basis of 1300 answers.

To exclude the possibility that children's performance may have been affected by fatigue, especially with the ASD population, we considered the results taking into account the order of presentation. No tendency was appreciated as an effect of order.

Adults performed at ceiling and the results for TD children appear in Table 5.

As we can see, although TD children are not at ceiling at ages 5–6, their performance is largely adult-like. If they produce any error, it is a reversal error (i.e. they take the subject to be the agent instead of the theme); this is the same error

Table 5. Mean performance in comprehension for TD children (in percentages; standard deviation in parenthesis)

	target	reverse	other	no agent
actives	100%	0	0	0
short passives	98%(4%)	2%(4%)	0	0
long passives	91% (12%)	9%(12%)	0	0
all sentences	97%	3%	0	0

that is typically found in child miscomprehension of passives, an error interpreted in Borer and Wexler (1992), Wexler (2004) as indicating the unergative interpretation of the passive.

Let us now turn to comprehension by ASD children. The results are presented in Tables 6 and 7.

To interpret the results, a Logistic Regression was modeled for the binary response variable Target result with the covariates subject type, sentence type and the interaction between the two.

For active Sentences, the Odds Ratio between TD and Low or High Functioning ASD (LFA and HFA respectively) can't be estimated because the TD subjects have a 100% Target results for active sentences. The Odds Ratio between HFA and LFA is 60.525, $CI_{95\%}(OR)=(3.7, 996.3)$, and it is statistically significant ($t=4.56$; $p\text{-value}=0.0002$). Thus, a HFA subject has 61 times the odds of a LFA subject of having a Target result in active sentences. For short passive sentences, the Odds Ratio between LFA and TD is 0.011, $CI_{95\%}(OR)=(0, 0.2)$, and it is statistically significant ($t=-5.33$; $p\text{-value}<0.0001$). The Odds Ratio between HFA and LFA is 30.803, $CI_{95\%}(OR)=(2.2, 436.1)$, and it is statistically significant ($t=4.02$; $p\text{-value}=0.0020$). Thus, a HFA subject has 31 times the odds of producing a correct answer that a LFA subject. For short passives, the Odds Ratio between HFA and TD is 0.325, and it is not statistically significant. For long passive sentences, the Odds Ratio between LFA and TD individuals is 0.065, $CI_{95\%}(OR)=(0, 0.6)$, and it is statistically significant ($t=-3.96$; $p\text{-value}=0.0026$). The differences for long passive comprehension between HFA and LFA and between HFA and TD are no statistically significant.

Table 6. Mean performance in comprehension for low-functioning ASD children (in percentages; standard deviation in parenthesis)

	target	reverse	other	no agent
actives	56%(10%)	31%(11%)	10%(4%)	2%(3%)
short passives	40% (18%)	46%(11%)	5%(12%)	9%(10%)
long passives	51%(22%)	27%(13%)	18%(18%)	4%(8%)
all sentences	51%	34%	12%	4%

Table 7. Mean performance in comprehension for high-functioning ASD children (in percentages; standard deviation in parenthesis)

	target	reverse	other	no agent
actives	97%(4%)	1%(2%)	1%(2%)	1%(2%)
short passives	91%(20%)	9%(20%)	0	0
long passives	76%(16%)	20%(16%)	4%(8%)	0
all sentences	90%	8%	1%	0

Considering now the results by sentence type, for LFA individuals there isn't any statistically significant Odds Ratio between sentence types. For HFA the Odds Ratio between Active and Long Passive Sentences is 14.974, $CI_{95\%}(OR)=(1.6, 137.4)$, and it is statistically significant ($t=3.8$; $p\text{-value}=0.0049$). Other Odds Ratios for HFA individuals are not statistically significant. For TD individuals, the Odds Ratio between Active and Long Passive or Short Passive can't be estimated because the TD subjects have 100% target results with active sentences. The Odds Ratio between long passives and short Passives is not statistically significant.

The results for the three sentence types are graphically represented in Figure 2.

Overall the picture that emerges is one in which TD and HFA perform equally when the comparison can be performed, i.e. in short and long passives. LFA are, in contrast, different from HFA in the comprehension of actives, short and long passives. Therefore, the divide is found between TD and HFA on the one hand and LFA on the other, rather than ASD children vs. TD. Moreover, the performance of the LFA children presents a pattern that bears no resemblance to that of TD children at any age: in the first place, not only they miscomprehend passives, but also actives. Second, the error pattern (represented in Figure 3) is also different because they produce a higher number of No agent and No action errors, not attested at all in the Persian TD children and only marginally in the HFA children. Still, reverse errors remain the most common for LFA children (31% in active sentences, 46% in short passives, 27% in long passives).

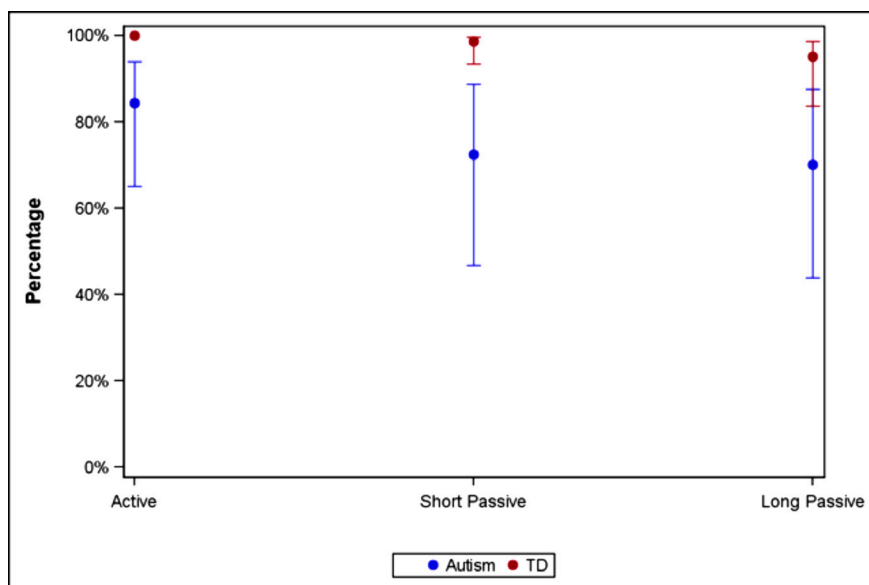


Figure 2. Percentage correct for the three populations tested.

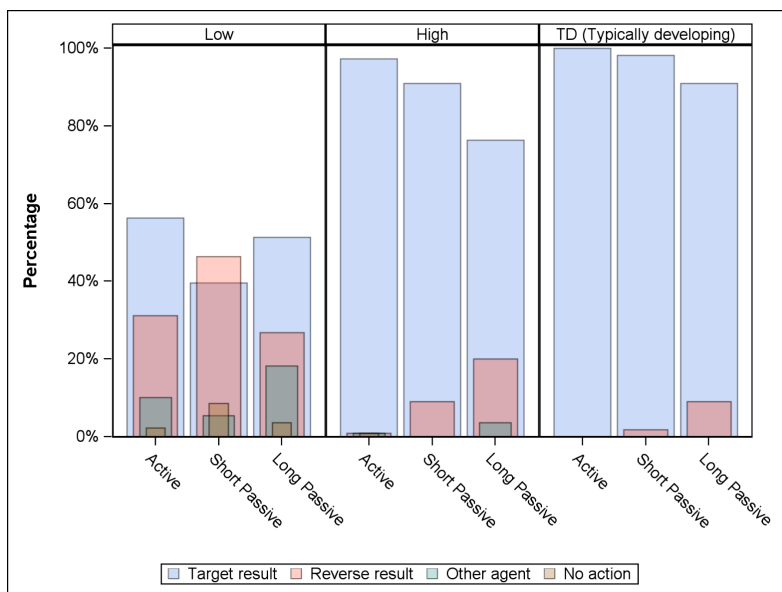


Figure 3. Results by type of answer for TD, HFA and LFA.

5. How do these results compare with those in the literature?

This in section we compare the results original to this paper with former results on (i) TD child performance in other languages and (ii) the performance of ASD children in the two languages previously investigated, English and Greek.

As mentioned earlier, there is no study of the acquisition of passives in TD Persian-speaking children. Since we used the same method and materials as Armon-Lotem et al. (submitted), comparison should be straightforward. In Armon-Lotem et al. (submitted) ten languages were tested with 5-year-olds and the results showed better performance with short passives than long passives. Mean performance was 93.42% on short passives and 90.08% on long passives, to be compared to 98% and 91% in the Persian results here. Naturally, the performance for the languages tested by Armon-Lotem et al. (submitted) differed from one language to another; in Catalan, Dutch, German, Hebrew and Polish children performed significantly better with short passives than with long passives, while in English and Danish no such difference was found between the two passives. In none of the languages in Armon-Lotem et al. (submitted) were the children at ceiling with actives (or short passives). The Persian children in our study were slightly older (the mean age in months in Armon-Lotem et al. submitted was 66 months, here it is 74 months). This difference in age may account for the ceiling performance in Persian actives and also for the accurate response to short passives. Briefly, the Persian results are in line with those in languages formerly investigated, and small differences may

be attributed to a small age difference. At age 6 the comprehension of passives by Persian-speaking children is not entirely adult-like, as we expect if maturation is reached around six years and a half (Hirsch and Wexler 2006, Hirsch 2011). We would also expect 7-year-olds to be at ceiling, and younger children to miscomprehend passives at a higher rate –with errors of the Reverse type. This remains for future research.

Let us now compare the results for the ASD children to those available in the literature. Perovic et al. (2007) found that, for English, the mean score for actives was 78%, for short passives 36% and for long passives 39% (we only take into account actional verbs, since only these have been tested in Persian). These results are poorer than those of our high-functioning individuals (97%, 91% and 76% respectively); if we compare them to those of the low-functioning individuals, Persian subjects performed worse on actives (56%) and similarly (although slightly better) on passives (40% and 51% on short and long passives respectively). The problem here is that we cannot access the low/high functioning categorisation of Perovic et al.'s subjects.⁵

For Greek, Terzi et al. (2014) only tested high functioning individuals, and those only for short passives. Mean performance was 66.6% correct, to be compared with 70% for TD children; on average these children performed worse than the Persian high functioning, but they were also younger. What is relevant here is that no difference emerged between the TD and the HFA in Greek, and none was found in Persian either. One respect in which the Greek and the Persian study vary is age: the Persian ASD subjects are older than the Greek –and for Persian we do not have results for an age-matched control group. With that proviso, our results are concordant with the Greek results, and indicate no maturational delay in the comprehension of verbal passive in high functioning ASD individuals.

There is no group of low functioning ASD children to compare ours with, except for an individual tested by Schroeder (2013); Schroeder conducted a study of ASD in Danish with the same experimental design as ours, and obtained similar results with HFA; the one LFA subject she tested performed poorly. Although this result should be taken with caution, it is indicative that HFA and LFA perform differently.

Judging by our sample, delay in the maturation of passives does not describe the group of LFA individuals, since they miscomprehend passives, but also actives. This could lead us to the same conclusion as in Perovic et al. (2007) that low functioning ASD subjects are not simply delayed, but impaired in their linguistic capacities (although Perovic and colleagues make that claim about all ASD children). Alternatively, there could be a different cognitive source for these results, related e.g. to short term memory. Non-verbal, cognitive abilities correlate with the performance of the Persian ASD children in our experiment and the reason why it should be so, under standard assumptions of the modularity of mind, remains for future research.

5. No standard deviation is provided in their results either and so we do not know if there was much variation amongst subjects.

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Appendix: Experimental items (in order of presentation)

1. Dokhtær-e bozorg dokhtær-e koochæk ra hol mi-dæhæd.
'The big girl is pushing little girl.'
2. Dokhtær-e bozorg dokhtær-e koochæk ra moayene mi-konæd.
'The big girl is examining the little girl.'
3. Dokhtær-e koochæk tævæsote madær boosid-eh mi-šævæd.
'The little girl is kissed by mom.'
4. Madær tævæsote dokhtær-e bozorg donbal mi-šævæd.
'Mom is chased by the big girl.'
5. Madær mooha-e madærbozorg ra šane mi-konæd.
'Mom is combing grandma.'
6. Dokhtær-e koochæk madærbozorg ra nævazeš mi-konæd
'The little girl is stroking grandma.'
7. Dokhtær-e bozorg tævæsote dokhtære koochæk hol dad-eh mi-šævæd.
'The big girl is pushed by the little girl.'
8. Dokhtær-e bozorg tævæsote dokhtære koochæk moayen-eh mi-šævæd.
'The big girl is examined by the little girl.'
9. Dokhtær-e koochæk madær ra mi-boosæd.
'The little girl is kissing mom.'
10. Madær dokhtær-e bozorg ra donbal mi-konæd
'Mom is chasing the big girl.'
11. Mooha-e madær tævæsote madærbozorg šane mi-šævæd.
'Mom is combed by grandma.'
12. Madær tævæsote dokhtær-e bozorg næghaši mi-šævæd
'Mom is drawn by the big girl.'
13. Dokhtær-e koochæk dokhtær-ez bozorg ra hol mi-dæhæd.
'The little girl is pushing the big girl.'
14. Dokhtær -e koochæk dokhtær-e bozorg ra moayene mi-konæd.
'The little girl is examining the big girl.'
15. Madær boosid-eh mi- šævæd.
'Mom is kissed.'
16. Dokhtære bozorg donbal mi-šævæd.
'The big girl is chased.'
17. Madærbozorg mooha-e madær ra šane mi-konæd.
'Grandma is combing mom.'
18. Dokhtær-e bozorg madær ra næghaši mi-konæd.
'The big girl is drawing mom.'
19. Madærbozorg dokhtær-e koochæk ra nævazeš mi-konæd.
'Grandma is stroking the little girl.'
20. Dokhtær-e koochæk hol dad-eh mi-šævæd.
'The little girl is pushed.'
21. Dokhtær-e koochæk moayen-eh mi-šævæd
'The little girl is examined.'
22. Madær dokhtær-e koochæk ra mi-boosad.
'Mom is kissing the little girl.'

23. Dokthar-e bozorg madær ra donbal mi-konæd.
'The big girl is chasing mom.'
24. Mooha-e madærbozorg šane mi-šævæd.
'Grandma is combed.'
25. Dokhtær-e bozorg næghaši mi-šævæd.
'The big girl is drawn.'
26. Madærbozorg nævazeš mi-šævæd.
'Grandma is stroked.'
27. Pesære koochæk pedærbozorg ra bæghal mi-konæd.
'The little boy is hugging grandpa.'
28. Pesære koochæk tavasote pedær poošand-eh mi-šævæd
'The little boy is covered by dad.'
29. Pesær-e bozorg pesær-e koochæk ra hæml mi-konæd.
'The big boy is carrying the little boy.'
30. Pedarbozorg riš-e pedær ra eslah mi-konæd.
'Grandpa is shaving dad.'
31. Pesær-e koochæk sooræt-e pedær ra næghaši mi-konæd
'The little boy is face-painted by dad.'
32. Pesær-e koochæk tavasote pedærbozorg bæghal mi-šævæd
'The little boy is hugged by grandpa.'
33. Pesære koochæk pedær ra mi-poošanad.
'The little boy is covering dad.'
34. Pesære bozorg tavasote pesære koochæk hæml mišævæd
'The big boy is carried by the little boy.'
35. Riš-e pedærbozorg tavasote pedær eslah mi-šævæd
'Grandpa is shaved by dad.'
36. Sooræt-e pesære koochæk næghaši mi-šævæd.
'The little boy is face-painting dad.'
37. Pedær poošandeh mi-šævæd
'Dad is covered.'
38. Pesære koochæk pesære bozorg ra hæml mi-konæd.
'The little boy is carrying the big boy.'
39. Pedær riš-e pedærbozorg ra eslah mi-konæd.
'Dad is shaving grandpa.'
40. Sooræt-eh pedær næghaši mi-šævæd
'Dad is face-painted.'
41. Pedær pesær-e koochæk ra mi-poošanad.
'Dad is covering the little boy.'
42. Pesær-e koochæk hæml mi-šævæd.
'The little boy is carried.'
43. Riš-eh pedær eslah mi-šævæd
'Dad is shaved.'
44. Pedær sooræt-e pesære koochæk ra næghaši mikonæd.
'Dad is face-painting the little boy.'

Changes in Psych-verbs: A reanalysis of little v

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Abstract

The present paper examines *psych*-verbs in the history of English. As is well-known, object experiencers are reanalyzed as subject experiencers in many of the modern European languages. I discuss one such change in detail, namely the change in the verb *fear* from meaning ‘to frighten, cause to fear’ to meaning ‘to fear’. The reason for the change may be the loss of the morphologically overt causative and a change in the set of light verbs. Object experiencers are constantly lost but I show there is also a continual renewal through external borrowing and internal change from physical to mental impact. A last change I discuss is the one where Subject Experiencers are reanalyzed as Agents in a V(oice)P.

Keywords: *psych*-verb; experiencer; agent; causative; reanalysis; little v.

Resum. Canvis en els verbs psicològics: una reanàlisi de v

Aquest article estudia els verbs psicològics en la història de l'anglès. Com és ben sabut, moltes de les llengües modernes reanalitzen els objectes experimentadors com a subjectes experimentadors. Analitzo un d'aquests canvis en detall: el canvi en el verb *fear* des del seu significat original d'‘espantar, fer por’ al de ‘témer’. El motiu del canvi podria ser la desaparició de la marca morfològica del causatiu i un canvi en el conjunt dels verbs lleugers. Encara que els objectes experimentadors es perden de manera constant, mostro que alhora hi ha una renovació incessant a través dels manlleus i mitjançant canvis interns des de sentits d'impacte físic a sentits d'impacte mental. Finalment, analitzo un canvi en què els subjectes experimentadors es reanalitzen com a agents en un Sintagma Veu.

Mots clau: verb psicològic; experimentador; agent; causatiu; reanàlisi, v.

Table of Contents

- | | |
|--|--|
| 1. Introduction | 4. Renewal of experiencer object verbs |
| 2. Experiencer verbs in Old English: the reanalysis of object experiencers | 5. From experiencer to agent |
| 3. The verb <i>færan/fear</i> | 6. Conclusion |
| | References |

1. Introduction

Psych-verbs express mental states and involve the inclusion of an experiencer argument. *Frighten* and *fear* are *psych*-verbs because they need an experiencer argument. In the case of *frighten*, this experiencer is an object, as shown in (1a), and in the case of *fear*, it is a subject, shown in (1b)

- (1) a. That alien frightens **him**. him=object experiencer
 b. **He** fears that alien. he=subject experiencer

Alternations such as in (1) have been very influential for theories and formulations of theta-marking. How can verbs such as *frighten* have experiencer theta-roles that function as grammatical objects in (1a) whereas verbs such as *fear* have experiencers that function as grammatical subjects in (1b)? According to the UTAH, formulated in (2), identical thematic relations should have similar structural positions.

- (2) *Uniformity of Theta Assignment Hypothesis* (UTAH)

Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure. (from Baker 1988: 46)

Belletti and Rizzi (1988) and Pesetsky (1995), to name but a few, have proposed (generative) accounts whereby the alternation in (1) obeys the UTAH in (2). Pesetsky, in particular, has argued that *that alien* is a cause in (1a) but subject matter (or theme) in (1b). If we then formulate a Thematic Hierarchy, as in (3) from Pesetsky (1995), experiencers are higher than subject matter but lower than cause.

- (3) Thematic Hierarchy

Agent > Cause > Experiencer > Theme/Subject Matter

The higher an argument is on the Thematic Hierarchy, the higher it is in the tree and the earlier it is pronounced. This then accounts for the order of arguments in (1).

An analysis using the notion of cause in (1a) makes sense in the light of Croft (1993) who shows that, in many languages (e.g. Lakhota and Classical Nahuatl), experiencer object verbs are marked with a causative affix. In this paper, I follow Arad (1998), Folli and Harley (2005), Pytkänen (2008) and others who have suggested that little *v* can have different flavors, e.g. cause or state. I chronicle what happens to little *v* diachronically where *psych*-verbs are concerned. Arad's (1998) proposal, based on Ruwet (1972) and Bouchard (1995), has perhaps been the most influential for the *psych*-verbs. Bouchard and Arad argue that any argument can be an experiencer and that the differences in types of *psych*-verbs are due to aspectual properties. I will use *v* and *V* heads for aspectual information.

There are many verbs with experiencer arguments, e.g. verbs of perception and cognition (see Bosson 1998, Haspelmath 2001, Verhoeven 2007 for a typo-

logical perspective). One of the tendencies is for languages to change towards expressing the experiencer as subject rather than as object, something we'll see in this paper as well. Object experiencers, such as in (1a), are reanalyzed as subject experiencers, such as in (1b). This change is well-known from the Old English verb *lician* 'please' (Lightfoot 1979 and Allen 1995) which starts to be used in its modern meaning of *like*. Haspelmath (2001) shows that many languages spoken in Europe (his Standard Average European) use the subject experiencer strategy and the *Atlas and Survey of Pidgin and Creole Linguistic Structure* (Michaelis et al. 2013: 264-271) confirms that with verbs *like* and *fear* the subject experiencer is the most frequent pattern.

In this paper, I add (a) more detail on the changes in the reanalysis of the verb *fear* as a subject experiencer (sections 2 and 3), (b) a discussion of the constant renewal of object experiencers through external borrowing and internal change (section 4), and (c) data on the reanalysis of subject experiencers as agents (section 5). Thus, one aim is to show that the direction of change is from object to subject experiencer and that object experiencer verbs continue to be renewed. I also provide a framework for understanding changes in argument structure in terms of changes in the vP-shell and suggest a preliminary 'explanation'.

2. Experiencer verbs in Old English: the reanalysis of object experiencers

In this section, I first provide a partial list of the first attested use of certain *psych*-verbs. How they first appear provides us insight into the changes they undergo. I then review the reanalysis of object experiencers as argued by van der Gaaf (1904), Jespersen (1909-1949), Lightfoot (1979), Fischer and van der Leek (1980), and Allen (1995).

2.1. *Psych*-verbs

Table 1 provides a partial list of Modern English *psych*-verbs as well as their first occurrence with the meaning they currently have, as gleaned from the OED. I am only including verbs with two DP arguments, not with clausal ones.

The reason for providing the list is that it shows several important developments in the history of English. (a) Many of the verbs that are now *psych*-verbs have become so recently. This indicates a lot of change. (b) A few subject experiencer verbs have remained stable, namely *dread*, *hate*, and *love*. (c) Some of the object experiencers have been reanalyzed as subject experiencers, e.g. *like*, *fear*, and *loathe* (see Table 2), but not the other way round. (d) Some of the renewals in the object experiencer verbs show causative markers (*fright-en*, *in-furiate*, *em-bitter*, and *terr-ify*). (e) Verbs that alternate, such as *grieve* and *delight*, have the object experiencer use as the earlier use and there may be an additional preposition or auxiliary for subject experiencers. This all shows a reanalysis from object experiencer to subject experiencer verb.

Table 2 summarizes the most obvious changes from object experiencer to subject experiencer. The table also shows there is overlap between the uses and I will

Table 1. Alternating *psych*-verbs (this choice is based on Croft 1993: 56; Levin 1993: 188-93; Pesetsky 1995: 18; Talmy 2001: 99)

ObjExp	first occurrence	SubExp	first occurrence
anger	1200	be angry	1360
vex	1423	detest	1533
annoy	1300	fume about	1522
disturb	1230	pity	1475
trouble	1230	regret	1450
hurt	1526		
displease	1377	dislike	1593 (briefly ObjExp)
distress	1400	despise	1297
irritate	1531	hate	OE
infuriate	1667	be furious about/at	1855
amuse	1600	love	OE
astonish	1600	marvel	1380 (earlier ObjExp)
surprise	1474	be surprised	1485
please	1350	like	1200 (earlier ObjExp)
delight	1225	delight in	1450
overjoy	1382	adore	1300
embitter	1603	resent	1595
cheer	1430	rejoice	1390
exhilarate	1540	admire	1500
worry	1807	worry with	1671
grieve	1300	grieve (over)	1640
bore	1768	be bored	1768
frighten	1666	fear	1393 (earlier ObjExp)
scare	1200	be afraid	1475
terrify	1536	dread	OE
thrill	1800	relish	1580 (earlier ObjExp)
vex	1487	loathe	1200

Table 2. Reanalysis of object experiencer as subject experiencer verbs

	ObjExp	SuExp
fear:	OE-1480	1400-present
like:	OE-1800	1200-present
relish:	1567-1794	1580-present
marvel:	1380-1500	1380-present
loathe:	OE-1600	1200-present

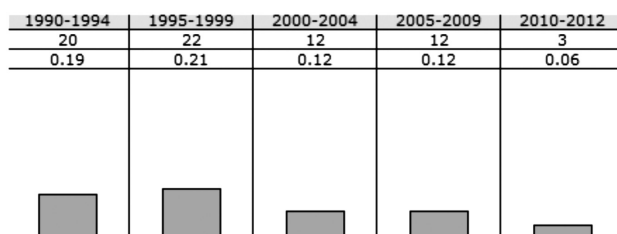


Figure 1. Decrease of *pleases* in COCA, absolute and per million.

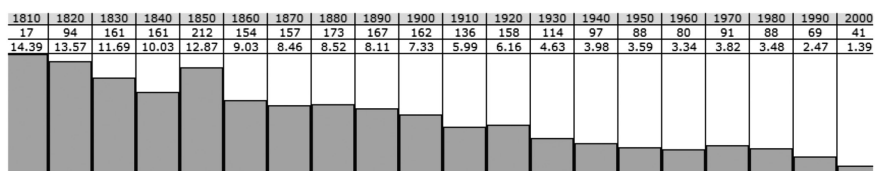


Figure 2. Decrease in use of *pleases* in COHA, absolute and per million.

show in section 3 that, in certain transitional texts, a verb may be used with an experiencer subject or experiencer object, as argued in Fischer and van der Leek (1980).

Another point of interest is that (object experiencer) verbs sometimes disappear. Table 1 shows that *please* is introduced in 1350 as an object experiencer verb. We might expect it to become a subject experiencer but that has not happened¹. At the moment, however, there is a loss of this verb, as Figure 1 shows for the last 20 years of instances of the verb *pleases* in the *Corpus of Contemporary American English* (COCA) and Figure 2 for the last 200 years in *Corpus of Historical American English* (COHA). What these figures show is that, in the period between 1990 and 1999, there are 42 instances of ‘X pleases Y’ but that the number decreases to 24 in the decade that follows. The same tendency is confirmed by looking at COHA which gives data for a 200 year period. The number provided under the absolute number is the occurrence per million words and here too the decline is obvious, from 14 per million in the period between 1810 and 1820 to a little more than 1 per million in the last decade of the 20th century.

This loss of the use of certain object experiencer verbs may be due to the same reason as the reanalysis, namely that object experiencers are hard to acquire. I discuss this point more at the end of section 3.5.

1. Although *please* can be found with subject experiencers, as in (i), this use is rare.
 - (i) I please upon the creature which I... (EEBO, George Abbot 1651)

Having provided some data to show that *psych*-verbs, in particular object experiencer ones, are quite unstable, in 2.2, I elaborate on some earlier thoughts on the reanalysis of object experiencer verbs. In the last section, I provide some reasons for their instability.

2.2. From object to subject experiencer

Psych-verbs, as earlier mentioned, express psychological states and involve an experiencer thematic role rather than an agent. This experiencer may act like the grammatical subject of the sentence but need not. In the latter case, the sentence may lack a referential subject and we use the term impersonal (Malchukov and Siewierska 2011). Impersonal verbs, *psych*-verbs included, have been the subject of discussion in much historical work, e.g. van der Gaaf (1904), Jespersen (1909-1949), Lightfoot (1979), Fischer and van der Leek (1980), Allen (1995), and Möhlig-Falke (2012) to name but a few.

Many have argued that the demise of impersonal verbs occurred due to case syncretism. However, Fischer and van der Leek (1980) argue that this cannot be so due to texts that have verbs with both meanings and Allen (1995) shows that the use of Experiencer objects continues well after the time that case was lost and that some verbs were introduced with an Experiencer Subject showing the construction was alive. The same continuation is obvious from work by Miura (2011) and others. The division in experiencer verbs that Allen (1995) adopts for Old English is the three-fold one of Elmer (1981). In that system, constructions, as in (4), with a dative experiencer and nominative theme or causer are labeled I, those, as in (5), with a nominative experiencer and genitive theme are referred to as II, and those with dative or accusative experiencer and genitive theme N. An example of the latter is given in (6).

- (4) *þa bodan us færdon* Type I
 the messengers us frightened
 NOM-Theme DAT-Exp
 'The messengers frightened us.' (OED, *Ælfric Deut* i. 28)
- (5) *He him ondræet his deað-es* Type II
 he REFL fears his death-GEN
 NOM-Exp GEN-Theme
 'He fears his death.' (*Ælfric Hom Skeat* i, 12, 87)
- (6) *oððæt him wlatode þære gewilnunge* Type N
 until him nauseated that desire
 DAT/ACC-Exp GEN-Theme
 'until he was nauseated of the desire.' (from Allen 1995: 70, *Aelfric Homilies* 21.89)

A list of the three types of verbs can be found in Table 3. Of these, *ail*, *like*, *loathe*, *yearn*, *long*, and *shame* are still in use but *like* and *loathe* have changed from

Table 3. The three types of impersonal verbs, based on Elmer (1981: 69; 72) and Allen (1995: 71; 75) and additional sources

I DAT Exp	N DAT/AC Exp	II NOM Exp
eglian ‘ail’	langian ‘long for’	sceamian ¹ ‘shame’
(ge/of)hreowan ‘distress’	lystan ‘desire’	hreowan ‘pity’
(ge)lician ‘please’	ofhreowan ‘pity’	reccan ‘care’
lapan ‘loathe’	ofpyncan ‘regret’	giernan ‘yearn’
losian ‘lose’	sceamian ‘cause/feel shame’	wilnian ‘desire’
mislician ‘displease’	(ge)spowan ‘cause/feel success at’	behofian ‘need’
oflician ‘displease’	tweonian ‘cause/feel doubt at’	
ofpyncan ‘displease’	byncan ‘seem, think’	
byncan ‘seem, think’	wlatian ‘nauseate/be nauseated’	

1. Tony Kim Dewey (p.c.) has evidence that Old English sceamian and hreowan are also of Type I but this is not important for my argument.

class I to II and *long* from N to II. *Shame* is now only used in passive participle form. *Hate* is not listed in this set but it is of type II, as (7) shows.

- (7) *Doð þæm wel þe eow ær hatedon.*
do those well that you earlier hated
‘Do well to those who formerly hated you.’
(OED, c897 Ælfred *Pastoral Care* xxxiii. 222)

Note that types I and N overlap but are not similar. Type N is experiencer initial (Allen 1995: 104) and never has a dummy *hit*. This suggests the experiencer is a subject. Type I has the experiencer first when it is a pronoun but overall experiencers are “more likely to follow ... the Theme” (Allen 1995: 109).

In the next section, my focus will be on one verb and the various changes that affect it. I agree with Allen and others that the loss of case was not the reason behind this change because these verbs continue to be used long after the case was lost. Instead, I attribute it to a change in the set of light verbs due to a loss of the morphological causative.

3. The verb *færan/fear*

In this section, I provide data that show the change that the verb *fear* undergoes from Old to Middle to Modern English. I then look at some interesting characteristics of both the disappearing object experiencer construction and of the innovative subject experiencer one.

3.1. From 'frighten' to 'fear'

From Old English until the late 14th century, the verb *færan* means 'to frighten'; see (8).

- (8) *þa bodan us færdon* =ExpObj
 the messengers us frightened
 'The messengers frightened us.' (OED, *Ælfric Deut* i. 28)

In the *Middle English Dictionary*, the entry for *feren* has both meanings 'to frighten' and 'to fear (respect)'. I provide all instances of these two meanings from the MED in (9) and (10) respectively. The second meaning is not attested before the end of the 14th century.

- (9) a. *He wile himm færenn 3iff he ma33.*
 'He wants to frighten him if he can.' (MED, c1200 Orm. Jun 1 675)
- b. *Alle these fereden* vs [WB(2): *maden* vs *aferd*].
 'all these frightened us.' (MED, a1382 WBible(1) Dc 369(1) 2 Esd.6.9)
- c. *þe lordes..bere whippes in hir hondes and so fered þe cherles, and droof hem away.*
 '... and so frightened the churls and drove them away.'
 (MED, a1387 Trev. Higd.(StJ-C H.1) 1.139)
- d. *Leue son, why hastou fered vs?*
 'Dear son why have you frightened us?' (MED, a1400 CursorTrin.12622)
- e. *þe fend moveþ þes debletis to fere Cristene [men] fro treupe.*
 'The enemy moves these devils to frighten Christian men from the truth.'
 (MED, a1425 Wycl.Serm. Bod 788 2.328)
- f. *Thus he shal yow with his wordes fere.*
 'Thus, he'll frighten you with his words.' (MED, Chaucer TC 4.1483)
- g. *Many tymes haue I feryd þe wyth gret tempestys of wyndys.*
 'Many times have I frightened you with great wind storms.'
 (MED, a1438 MKempe A (Add 61823) 51/24)
- h. *and þat þei feere hym fro vicis.*
 'and that they frightened him from vice.' (MED, c1443 Pecoock Rule 320)
- i. *For to feare hym sir Dynadan seyde hit was sir Launcelot.*
 'Because, to frighten him, Sir Dynadan said it was Sir Lancelot.'
 (MED, a1470 Malory Wks.Win-C 587/11)
- j. *In her hondys thei bare yrone speyruse, The fereful soule to feyre and enchase.*
 'In their hands, they had iron ... to frighten the fearful soul and to chase it.' (MED, a1475 VPhilibert Brog 2.1 p.33)

- (10) a. *And that schold every wys man fere.*
 ‘And that should every wise man fear.’
 (MED, a1393 Gower CA Frf 3 2.578)
- b. *Men feeren hem in al the toun Welmore than thei don of thonder.*
 ‘Men fear them in the entire town of Welmore (more) than they do thunder.’ (MED, a1393 Gower CA Frf 3 3.454)
- c. *Fele ferde for þe freke(z), lest felle hym þe worre.*
 ‘Many feared for the man lest the worst happened to him.’
 (MED, c1390 Gawain Nero A.10 1588)
- d. *Pou schalt nat fere For to be kyng of this regioun.*
 ‘You shall not be afraid to be king of this region.’
 (MED, c1425 Lydg. TB Aug A.4 1.502)
- e. *Dan Vlives..of his lyf feerd.*
 ‘Then Ulysses feared for his life.’
 (MED, c1540/a1400 Destr.Troy Htrn 388 13842)
- f. *Alle that company fere I ryth nouth.*
 ‘All that group I fear not at all.’
 (MED, a1475 Ludus C.Vsp D.8 369/394)
- g. *I fere me þat I shuld stond in drede.*
 ‘I fear that I shall stand in dread.’
 (MED, a1500 Play Sacr. Dub 652 218)

A few points are worth noting: (a) the causative paraphrase in another version of (9b) and this is not unusual, (b) the mention of a result in (9c), (9e), and (9h) and an instrument in (9f) and (9g), and (c) the use of a reflexive in (10b) and (10g). I’ll discuss all three of these details now, starting with the causative.

3.2. Object experiencers are causatives

In section 1, it was mentioned that object experiencers involve causatives structures and that they are marked with an overt causative morpheme in some languages. In this section, I show that this is true in Old English too.

A verb with the meaning ‘to frighten’ has an inherent causative meaning. According to the OED, the Old English verb *færan* ‘fear’ has its origin in a causative form **færjan*, a weak verb ‘to terrify’ that derives from the noun *fær*. García García’s (2012) list of more or less productive causatives in Old English includes several *psych*-verbs and they are all object experiencer verbs: *a-hwænan* ‘vex, afflict’, *gremman* ‘enrage’, *a-bylgan* ‘anger’, *swencan* ‘harrass’, *a-þrytan* ‘weary’, *wægan* ‘vex’, and *wyrdan* ‘annoy’.

Older Germanic languages and Old English have verbalizing *-j/-i* affixes that add a causer to the argument set. In Gothic, these are clearly visible, as shown in Table 4. Note that the *-an* suffix adds the infinitive ending, not important for the present paper.

Table 4. Causatives in Gothic (based on van Hamel 1931: 186-187; Prokosch 1939: 153; and Ottosson 2009: 35)

Verb	>	Verb
<i>urreisan</i> 'arise'		<i>urrais-j-an</i> 'to make arise'
<i>sliupan</i> 'walk silently'		<i>afslaup-j-an</i> 'to make slip away'
<i>brinnan</i> 'burn' intr.		<i>gabran-j-an</i> 'to burn something'
<i>sitan</i> 'sit'		<i>sat-j-an</i> 'to put'
<i>drigkan</i> 'drink'		<i>drak-j-an</i> 'make drink'
<i>ligan</i> 'lie'		<i>lag-j-an</i> 'lay'
<i>-redan</i> 'prepare'		<i>rod-j-an</i> 'make think'
Noun	>	Verb
<i>stains</i> 'stone'		<i>stain-j-an</i> 'to stone'
<i>doms</i> 'judgment'		<i>dom-j-an</i> 'to judge'
<i>wens</i> 'hope'		<i>wen-j-an</i> 'to hope'
Adjective	>	Verb
c. <i>laus</i> 'loose'		<i>laus-j-an</i> 'to loosen'
<i>hails</i> 'whole'		<i>hail-j-an</i> 'to heal'
<i>blinds</i> 'blind'		<i>gabliand-j-an</i> 'to blind'

Table 5. Causatives in Old English, from Ottosson (2009)

<i>drēopan</i> 'drop'	<i>drȳpan</i> 'moisten',
<i>belgan</i> 'be/become angry'	<i>ābielgan</i> 'irritate',
<i>hweorfan</i> 'turn/go/die'	<i>hwierfan</i> 'turn/destroy',
<i>meltan</i> 'melt, burn up, be digested'	<i>mieltan</i> 'melt/purge',
<i>sincan</i> 'sink'	<i>sencan</i> 'sink, submerge/drown',
<i>springan</i> 'jump/burst forth/spread'	<i>sprengan</i> 'scatter/burst',
<i>nesan</i> 'escape from/be saved'	<i>nerian</i> 'save/protect',
<i>sīgan</i> 'sink/fall/move'	<i>sæægan</i> 'cause to sink/fell/destroy',
<i>scrinan</i> 'shrink/wither'	<i>screncan</i> 'cause to shrink',
<i>feallan</i> 'fall/flow/die'	<i>fiellan</i> 'fell/defeat/destroy'.

By the time of Old English, phonological processes have made the affix mostly invisible, as shown in Table 5, and all that's left is an effect on the stem vowel (as is still the case in Modern English intransitive *fall*, *sit*, and *lie* and causative *fell*, *set*, and *lay*).

Lass (1994: 166) writes that, by Old English, the function of *-i* as causativizer is visible only in a small group of verbs, in line with Visser (1963) and Bosworth and Toller (1898). I agree with Ottosson (2009: 51), who concludes that even though the *j*-causatives were less transparent in Old English, this formation may still have been somewhat productive. After the evidence is lost more and more, verbs become increasingly labile in English (from 80 in Old English to 800 in Modern English; see McMillion 2006 and van Gelderen 2011).

Thus, by the end of Old English, the causative morphology is no longer transparent and analytic forms get to be used, e.g. the light verb *do*, as in (11). This use is present in Old English already.

- (11) a. *Þe barn sco **dide drinc** o þat wel.*
 the child she made drink of that well
 ‘She made the child drink from the well.’ (Cursor Mundi, Cotton 3071)
- b. She **dud** Þe childe drynke of Þe welle (idem, Trinity)
- c. *Ðis deuel ... **doð** men hungren & hauen ðrist.*
 ‘This devil ... makes men hunger and have thirst.’
 (MED, a1250 Bestiary (Arun 292) 428)

As the causative suffix disappears, there are a number of replacements, e.g. the *-en* suffix in Middle English (12) on verbs like *durken* ‘darken’, the zero morpheme on verbs like *blak* ‘blacken’ in (12), the late Middle English causative *en-* prefix (13a-c), and the early Modern suffixes *-ify*, as in *beautify* and *neatify*, *-ize*, as in *advertize*, and *-ate*, as in *accumulate*.

- (12) *Þe aier gun **durken** and to **blak**.*
 ‘The air began to darken and to blacken.’ (OED, Cursor Mundi, Vesp. 24414)
- (13) a. [These things] doe ... exceedingly possesse and **englad** our hearts.
 (OED, 1604 Supplic. Certaine Masse-priests §1)
- b. That Vaiano Which **engoldens and empurples** in the grounds there of my Redi. (OED 1825 Hunt Redi’s Bacchus in Poet.Wks. (1860) 386)
- c. *A womans looke his hart **enfeares**.*
 ‘A woman’s look makes his heart fearful.’ (OED, 1608 T. Hudson tr. G. de S. Du Bartas Ivdithv. 70 in J. Sylvester Deuine Weekes & Wks.)

The prefix *en-* is extremely popular for a while but many die out, e.g. *enfear* in (13c) but also *enwiden*, *enweaken*, *ensoak*, *enstuff*, and *enquicken* (s.v. *en-* in the OED).

In 3.2, I have discussed the demise of the morphological causative in Old English and the renewal of the causative through light verbs and prefixes borrowed from French. I’ll come back to these changes in 3.5.

3.3. *The result and instrument*

Now let's turn to the goal or instrument being very frequent in (9) above. Other such examples are (14), and also occur with particles, as in (15).

- (14) *Hou anticrist & his clerkis **feren** trewe prestis **fro prechyng** of cristis gospel.*
 'How the antichrist and his clerks frighten true priests from preaching Christ's gospel.' (OEDc1380 Wyclif Works Speculum de Anti~christo)
- (15) a. ***Fere away** the euyll bestes.*
 'Frighten the evil animals away.'
 (OED, 1504 Atkinson tr. Ful Treat. Imytacyon Cryste (Pynson) iii. xxvii)
- b. If there were nothing else to **feare** them **away** from this play. (OED, 1577 Northbrooke Spiritus est Vicarius Christi: Treat. Dicing 93)

Having a goal or instrument accompany a causative, such as *fear*, reinforces the change of state typical of a causative. I will come back to this point in my analysis in 3.5.

3.4. *Reflexives causing ambiguity*

There are early cases with ambiguity, as in (16), depending on whether the postverbal pronoun is seen as a reflexive or not. Thus, it is not clear whether (16a) means 'I frighten myself that ...' or 'I fear that ...' These ambiguous sentences occur mainly when the cause/subject matter is clausal and sentence-final, as in (16), but also without these, as in (17).

- (16) a. *I **fere me** ye haue made a rodde for your self.*
 'I fear/frightened myself you have made a rod for yourself.'
 (OED s.v. rod1485 Malory's Morte Darthur (Caxton) v. ii. sig. hviii^v)
- b. I **feared me** alwayes that it wolde be so.
 (OED, 1530 Palsgrave, Lesclarcissement 547/2)
- c. I **feare me** he is slaine. (OED, a1593 Marlowe Edward II (1594) sig. E3v)
- (17) a. All to son, my brother, I **fere me**, for yow.
 (Helsinki Corpus, Mankind, 162)
- b. "A, dowtyr," seydwyr Lord, "**fere þe** nowt, I take non hede what a man hath ben, but take hede what he wyl ben".
 (Helsinki Corpus, Margery Kempe, chap 21)
- c. '**feare you** not,' quoth these stout wemen.
 (Helsinki Corpus, Thomas Harman, 71)

The same text may have a causative with object experiencer as well as a reflexive with subject experiencer, as (18a) and (18b) show respectively.

- (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?’
 (MED, a1470 Malory Wks.Win-C 322/17)
- b. Sir Palomydes was the more wayker and sorer was hurte and more he loste
 of his blood than sir Lame roke..’Sir,’ seyd sir Dynadan ... ‘I **feare me** that
 sir Palomydes may nat yett travayle.’
 (MED, a1470 Malory Wks.Win-C 606/17)

By the end of the 16th century, the experiencer object with *fear* is lost, as in (19).

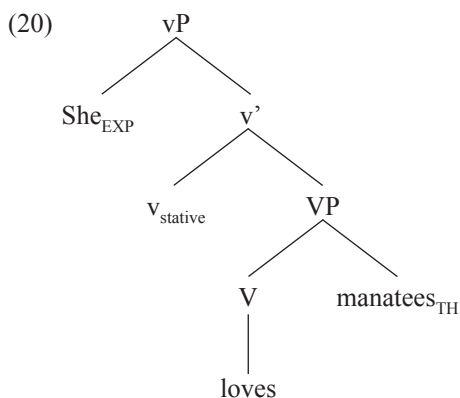
- (19) He that but **feares** the thing hee would not know, Hath ... knowledge from
 others eies, That what he **feard** is chanced. (1600 Shakespeare Henry IV.2 i.
 i. 87)

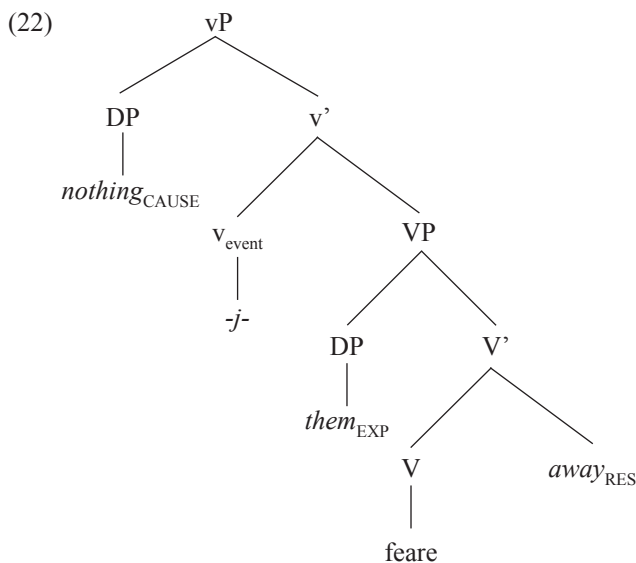
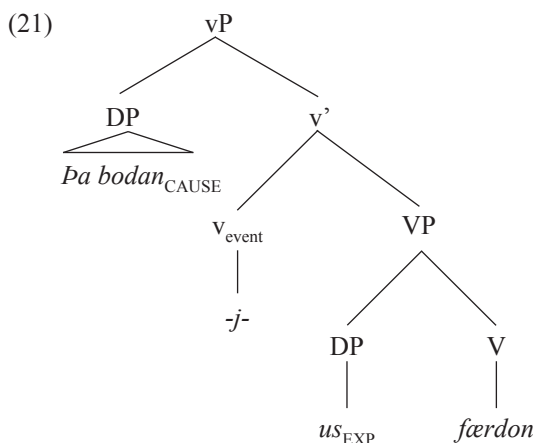
I’ll now turn to a possible account for the loss of the experiencer object.

3.5. The loss of the causative and a reanalysis of little v

I will now turn to the analysis of experiencer verbs and the reason for the change from object to subject experiencer. In short, the loss of the morphological causative, as outlined in 3.2, makes the construction less transparent and, in accordance with work by Schein (1993) and Kratzer (1996), I argue that Themes are parts of the lexical entry of the verb and that this makes experiencer objects difficult to process and that the thematic hierarchy is in conflict with an animacy hierarchy.

First, I’ll provide an analysis of the changes. Much work in recent years (e.g. Ramchand 2008), assumes three layers in the traditional VP-area, a high little v that can be aspectually marked as an eventive by an initiator bringing about a change of state (either intentionally or not) or as a stative by an experiencer, as in (20); the middle layer which houses the measured or affected argument, as in (21); and the lowest layer with a result or goal argument, as in (22).

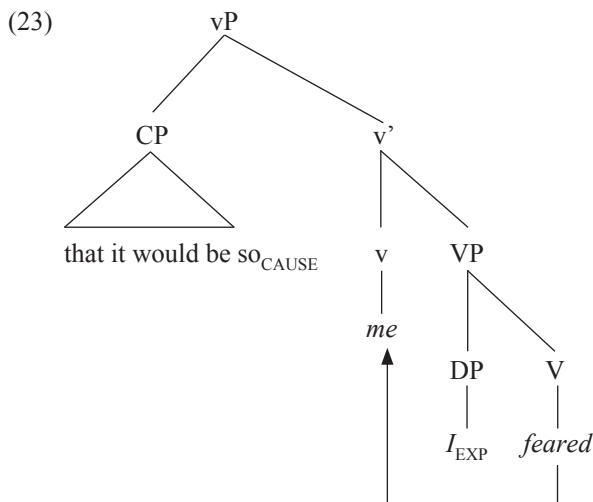




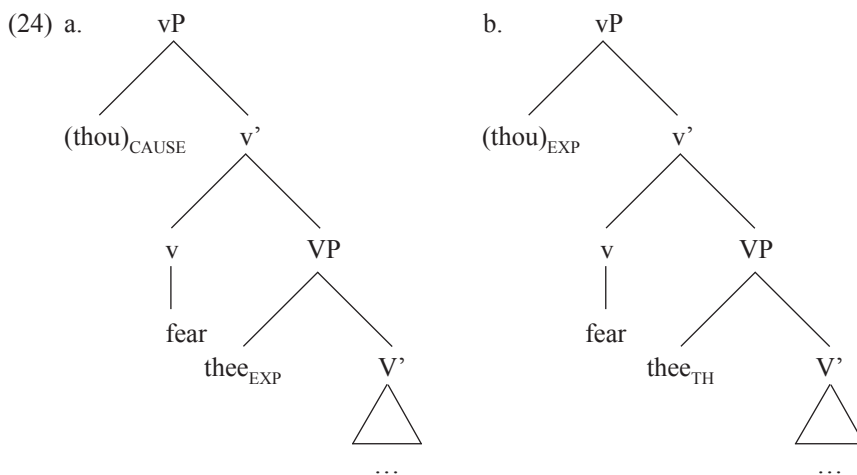
After the morphological causative weakens during Old English, other light verbs occupy that space, e.g. *do*, *make*, *put*, *-ify*, *-ate*, *-en*, and *en-*, as shown in (11), (12), and (13). There is also an increased use of the instrument in (14) and result in (15) that helps to emphasize the change of state typical of the causative that is losing its marking. The light verbs, however, are highly various as well, as e.g. Clancy (2010) has shown. Thus, *do* could mean ‘give, make, let, put’ in one early Middle English text. This multi-functionality points to a situation where the contents of *v* are unclear and reanalysis can occur.

Cross-linguistically, reflexives are often affixed to the verb and bring about changes in valency and aspect. For instance, in Romance, reflexives mark incho-

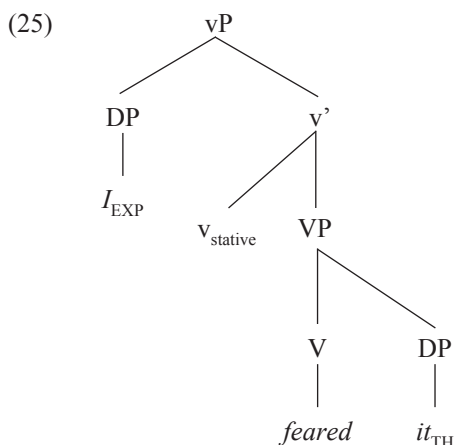
ativity and what were earlier reflexives in Scandinavian are now used as passives. I will therefore argue that reflexives are ambiguous between phrase- and head-status. The reflexive experiencer in (16b) can be analyzed as in (23) where *feared* moves to little v, now occupied by the reflexive. The v is ambiguous between stative and eventive aspect, and the new meaning triggered is the former.



Sentences, such as (17b), have a similarly ambiguous tree, as shown in (24).



The latter stage enables a reanalysis from the causal ‘frighten’ to ‘fear’, with a structure as in (25).



Having described the changes in the argument structure, possibly started by the loss of the causative, the question arises why this happens. I will suggest two reasons.

First, Ryan (2012) shows that the Theme theta-role appears in data from first language acquisition, that is before the Agent or any other theta-role. This fits with Schein (1993) and Kratzer (1996) who argue that the Theme cannot be introduced via a light verb but is relevant to the meaning of the lexical verb. This makes Themes into natural grammatical objects and Experiencer objects possibly hard to learn. This then might cause their reanalysis as subject Experiencers.

Secondly, the reason for the renewal by certain causative verbs is possibly pre-linguistic in Jackendoff's (2002: 245) sense. When animacy hierarchies are incongruous with thematic hierarchies, the child will try to reconcile the two. Thus, with causatives whose highest argument is an inanimate and whose lowest argument is an animate, e.g. 'a ball stunned me', the Theme is 'upgraded' to an Experiencer. If we assume an animacy hierarchy is important pre-linguistically, semantically, and pragmatically, the thematic hierarchy of (2) is the grammaticalization of this, i.e. an exaptation of the semantic animacy hierarchy to syntax². Once in a while, there is conflict between the two and then the latter may prevail.

4. Renewal of experiencer object verbs

Interestingly, 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. This use remains in British English where 'dogs can worry sheep' by biting their throats. Table 6 provides a few of the sources of renewal. I will focus on internal change.

2. This possibility is briefly suggested in van Gelderen (2013: 82).

Table 6. Some examples of renewal of object experienter verbs

anger, scare	1200	Old Norse
astonish	1375	unclear
frighten	1666	internal change
grieve	1330	French
please	1350	Anglo-Norman
irritate	1531	Latin
stun	1700	internal change
worry	1807	internal change

Haspelmath (2001), based partly on Cole et al (1980), suggests two changes: in the Experienter Object and changes in verbal meaning. (a) Experienter Objects first acquire subject behavior. (b) Verbs change from concrete to abstract, e.g. *fascinate* and *stun* originally mean ‘to bewitch’ and ‘to deprive of consciousness or of power of motion by a blow’, respectively. I’ll focus on (b).

In the pre-Experienter Object meaning, these verbs have Agent or Causer subjects, as (26) and (27) show, but they have developed experiential meanings, as shown in (28) and (29). The argument structure of the two verbs has changed from Agent (or Causer) and Theme to Theme (or Cause) and Experienter.

- (26) a. They kill it [a fish] by first **stunning** it with a knock with a mallet.
(OED 1662 J. Davies tr. A. Olearius *Voy & Trav. Ambassadors* 165)
- b. The ball, which had been nearly spent before it struck him, had **stunned** instead of killing him. (OED, 1837 Irving Capt. Bonneville I. 271)
- (27) Why doe Witches and old women, **fascinate** and bewitch children? (OED 1621 R. Burton *Anat Melancholy* i. ii. iii. ii. 127)
- (28) a. You shall sometimes see him gather a Crowd round him ... and **stun** the People with a senseless Story of an Injury that is done him. (OED, 1714 E. Budgell tr. Theophrastus *Moral Characters* vi. 22)
- b. I thought I knew a lot about entomophagy around the world, but this book **stunned** me. (<http://www.menzelphoto.com/books/meb.php>)
- (29) Purple eggs ... **fascinated** her (<http://live.psu.edu/story/52214>)

Other such verbs are *worry*, *thrill*, *astonish*, and *grieve*. The verb *worry* meant ‘to kill by strangling/compressing the throat’ in Old and Middle English, as in (30), with an Agent and Theme and is reanalyzed as a verb with an Agent and an object experienter. The verb *thrill* meant ‘to pierce’, as in (31), and is similarly later changed into an object experienter.

- (30) *Haral ... threwe hym to the grounde and had **wyried** hym with his hondes,*
 ‘Harald threw him to the ground and strangled him with his handes.’
 (OED, 1387 Trevisa tr. R. Higden Polychron. VII. 534)

- (31) *& scharp lance pat **thrilled** Ihesu side.*
 ‘and the sharp lance that pierced Jesus’ side.’
 (OED, c1330 Mannyng Chron. 1810: 30)

The verb *astonish* has an earlier variant *aston(i)e*, as in (32a), of which the OED says “perhaps the ending is due to Old French past participle *estonné*” but which Morris (1866: 286) says is from Old English *stunian* ‘to strike’ and (32b) seems to confirm that. There are early instances that are already ambiguous, as given in (32c).

- (32) a. *Hou it ssolde ous ssende and **astonie**.*
 ‘How it should destroy and stun us’ (OED, 1340, Ayenbite (1866) 126)
- b. *The one smote the king upon the head, the other **astonished** his shoulder.*
 ‘The one struck the kong on the head; the other struck his shoulder.’
 (OED, 1600, Holland tr. Livy Rom. Hist. xlii. xv. 1124)
- c. *Bes wordis **astonyeden** hem.*
 ‘These words astonished them.’
 (OED, c1375, Wycliffite Serm. in Sel. Wks. 1871: II. 113)

The verb *grieve* was borrowed from French with the meaning of ‘to burden, harass’, as (33) shows, and as an experiencer object use appears in (34).

- (33) a. *Clerkes ... he **greuede** manion.*
 ‘Clergymen... he harassed many a one.’
 (OED, 1297 Gloucester’s Chron. 11815)
- b. *Moche thei **greved** the hethen peple with alle theire power.*
 ‘Much they harassed the heathens with all their power.’
 (OED, a1500 Merlin (1899) xii. 186)
- (34) *Our fredom that day for euer toke þe leue, For Harald it went away, his falshed **did** vs **greue**.*
 ‘That day, our freedom forever took leave, because of Harald it went away. His falsehood grieved us.’
 (OED, c1330 Mannyng Chron. (1810) 71)

The changes are very gradual. For instance, uses of *worry* and *grieve* with the meanings of ‘strangle’ and ‘do bodily harm’, respectively, occur till the 19th century, as in (35) and (36), although figurative uses occur early on, e.g. (37).

- (35) She bit me ... She **worried** me like a tigress.
(OED, 1847 Brontë Jane Eyre II v 124)
- (36) The graceful foliage storms may reave, The noble stem they cannot **grieve**.
(OED, 1810 Scott Lady of Lake ii. 57)
- (37) *hou faste þe wolufs of helle **wirien** cristen soulis.*
'how firmly the wolves of hell worry Christian souls.'
(OED, c1380 Wyclif Wks. 1880: 24)

In short, object experiencers are indeed reanalyzed as subject experiencers and new object experiencers arise through the reanalysis of the Theme as an Experiencer. This occurs because a physically affected object can be seen as mentally affected too, as explained in Ruwet (1972), Bouchard (1995), Arad (1998).

5. From experiencer to agent

The last change to look at is one that is currently attracting some attention, namely that from stative to non-stative and from subject experiencer to agent, as in (38) to (41).

- (38) the skiers **are loving** this -- about a foot of snow for you. (COCA Spoken 2009)
- (39) I **am liking** private life a lot right now. (COCA Spoken 2009)
- (40) I've been going around, and I **am liking** what I see in the classrooms (COCA Spoken 2002)
- (41) So how's he **liking** his new single status? (COCA Magazine 2012)

Anecdotally, this construction is blamed on a fast food add and on facebook where people are urged to 'like' certain stories, as in (42).

- (42) I don't know that an anti-Gingrich or Romney or Obama group on Facebook that has a lot of people **liking** it is going to have a big impact on the campaign, but this is how people organize themselves these days online. (COCA Spoken 2012)

The COCA corpus has 1157 instances of *liking* as a verb, with most instances in fiction. Many of these are complements to auxiliaries such as *keep on*, *stop*, and *end up*, as in (43), and are still stative.

- (43) she *ended up liking* it more than maybe she would have thought.
(COCA Spoken 2012)

Looking at the auxiliary *be* followed by the verb *liking*, there is a steady set of such examples, e.g. six instances in 2011 in the spoken portion of COCA, namely those given in (44).

- (44) a. Exactly. I want -- I 'm liking Geoffrey Rush. (COCA NBC Today)
 b. That's how much women of a certain age, like us, are liking it. So let's watch. (COCA NBC_Today)
 c. He's having some breakfast. RUSS-MITCHELL: Ah, he's liking that. (COCA CBS_Early)
 d. If the Democrats are liking Medi-scare and nine percent unemployment, one percent economic expansion, and huge debt ... (COCA Fox_Baier).
 e. WILLIAMS: I'm liking it. Thanks very much. (COCA NBC RockCenter).
 f. I whip my hair back and forth. You know and so he's liking it (COCA CNN Morgan).

There are 13 similar examples of *be* with *loving*, given in (45).

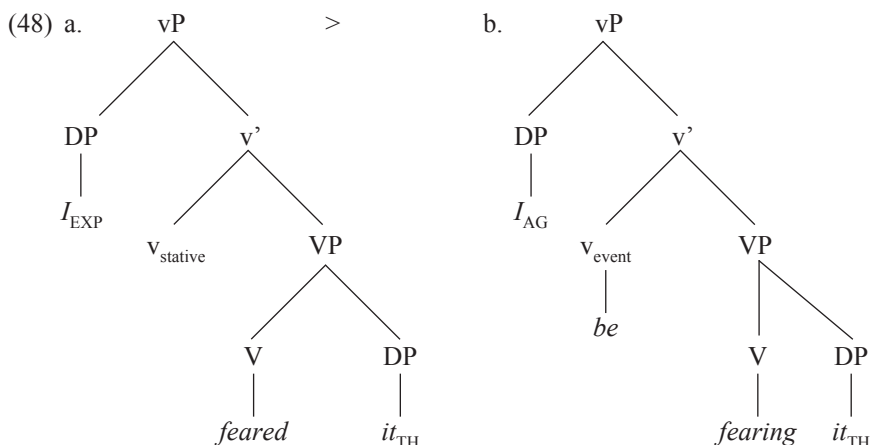
- (45) a. The Steelers are loving it. (COCA NBC Today)
 b. So we recommend, lately we've been loving broccoli rabe, which is higher in iron and calcium than regular broccoli ... (COCA NBC Today)
 c. Yes. I think we're loving it. I mean all eyes are on London at the moment and, you ... (COCA CBS Early)
 d. Yeah. It's only in New Orleans. I'm loving it. With meals like this, it's hard to imagine anyone being able (COCA CBS Early)
 e. Oh, I'm loving this. (LAUGHTER) (COCA STOSSEL)
 f. I was loving it. I mean, I was sort of in a weird place in my ... (COCA ABC 20/20)
 g. and asking them to wrestle, you know. They're loving this. (COCA CNN Behar)
 h. - actually, we --this is our first week (unintelligible), and I'm loving every minute of it. (COCA NPR ATC)
 i. No, I --but keep going, I'm loving it. CLARKSON: Oh. OK, it's coming up, the chorus, (COCA NBC Today)
 j. Carolina, sunny sky, seventy-three with the light breeze. Oh, you're loving it. Why? High pressure here ... (COCA CBS Early)
 k. I hope you like cranberry. Good. ... Yeah, I'm loving this right now. (COCA CBS Early)
 l. Even now you're loving every second of that, aren't you? Be honest. (COCA CNN Morgan)
 m. and just towards the end --it had gone very well and everyone was loving it. (COCA CNN Morgan)

Apart from *like* and *love*, are other subject experiencer verbs undergoing this change? *Fear* and *know* are, as (46) and (47) show.

- (46) a. I've been **fearing** the answers. (COCA Fiction 2007)
 b. Wall Street is **fearing** a bloodbath (COCA Magazine 2007)

- (47) And so everybody in town **was knowing** that this was happening (COCA Spoken 2009).

Frequently used diagnostics to determine if arguments are Agents or Experiencers are the use of *deliberately* with Agents, *personally* with Experiencers, and *-er* with Agents. Neither *deliberately* nor the *-er* occur with *fear* yet which means the reanalysis isn't complete. Structurally, we could argue that when Experiencers are reanalyzed as Agents, the change from (48a) to (48b) happens. There is a 'promotion' of the Experiencer due to the loss of the stative character of *fear*.



The change discussed in this section, i.e. the introduction of sentences such as (38), involves a reanalysis of the light verb from stative to non-stative aspect. With animate specifiers of vP, such reanalysis is always possible.

6. Conclusion

In this paper, I have looked at some changes in the meaning and argument structure of verbs and have attributed those to changes in the repertoire of light verbs. In sections 2 and 3, I discuss the well-known reanalysis of object experiencers as subject experiencers. I focus on the changes of the verb *fearan*, which changes from meaning 'to frighten' (object experiencer) to 'to fear' (subject experiencer) and identify some factors that give us insight into the reasons behind the reanalysis, e.g. the frequent strengthening of the old meaning by a causative light verb and

the use of a reflexive with the new meaning. These additions provide evidence of a change in the light verb inventory.

In section 4, I examine the sources of renewal for object experiencers. Some are borrowed while others arise through a reanalysis of a class of verbs where the highest theta-role is ambiguous between agent and causer. The theme is seen as experiencer and a new object experiencer arises. A last change, discussed in section 5, is the change of subject experiencer *psych*-verb to regular transitive. I suggest that language-external reasons play a role.

I have described three major changes in the argument structure of verbs in terms of light verbs. In section 3, I have also accounted for why these changes might have taken place. There are two different reasons for this preference for reanalyzing experiencer objects as subjects. One is based on the special status of the Theme and a second is based on discrepancies regarding animacy that occur as a result of grammaticalization.

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Voice phenomena

Index

- 3 **Bartra, Anna.** Voice phenomena: how many properties behind this label?
- 19 **Alexiadou, Artemis.** Active, middle, and passive: the morpho-syntax of Voice.
- 41 **Bosque, Ignacio.** On Resultative Past Participles in Spanish.
- 79 **Gavarró, Anna; Heshmati, Yalda.** An investigation on the comprehension of Persian passives in typical development and autism.
- 99 **van Gelderen, Elly.** Changes in Psych-verbs: A reanalysis of little v.