Different by-phrases with adjectival and verbal passives

Abstract

We present an analysis of Spanish corpus data which show that event-related by-phrases are qualitatively different in both types of passives with respect to the types of complements we find in them: With verbal passives we find more strongly referential nominals (e.g. proper names, pronouns), whereas with adjectival passives, we find more weakly or non-referential nominals (e.g. indefinites, bare nominals, weak and generic definites). We propose that these differences follow from an account, according to which the event in adjectival passives remains in the kind domain so that only event kind modification is possible. Furthermore, we show that there are two different kinds of by-phrases with adjectival passives: Event-related ones modify an event kind, and state-related ones modify a state token. The complements of the latter show characteristics of event-related by-phrases with verbal passives and do not differ from state-related by-phrases with verbal passives either. Finally, we discuss the theoretical possibility that event-related modifiers have to semantically incorporate into the participle, before the participle is adjectivised.

Keywords: Events, Kinds, Passive, Corpus evidence, Adjective, Modification, By-phrases, Incorporation, Weak referentiality

1 Introduction

According to the received view, the external argument of the underlying verb in adjectival passives is ‘truly absent’ (cf. Kratzer, 1994, 2000, among others), at least in languages like English and German. This also seems to hold for Spanish adjectival passives, which lack control into purpose clauses (1-a) and do not display the disjoint reference effect (1-b), i.e. a reflexive interpretation is available.
(1) a. *La rueda estaba inflada, para proseguir con el viaje.
   the tire was.LOC inflated for continue.INF with the journey
   intended: ‘The tire was inflated in order to continue the journey.’

b. El niño estaba peinado de manera impecable.
   the child was.LOC combed of manner impeccably
   ‘The child was combed impeccably.’
   (i) Someone (else) (has) combed the child.  disjoint reference
   (ii) The child (has) combed him/herself. reflexive

In both respects, verbal passives behave differently (2). Note that Spanish morphologically distinguishes between the two types of passives: in adjectival passives the past passive participle combines with an inflected form of estar (1), in verbal passives with an inflected form of ser (2), which we will gloss as ‘be.LOC’ and ‘be’, respectively.

(2) a. La rueda fue inflada, para proseguir con el viaje.
   the tire was (being) inflated for continue.INF with the journey
   ‘The tire was (being) inflated in order to continue the journey.’

b. El niño fue peinado de manera impecable.
   the child was combed of manner impeccably
   ‘The child was combed impeccably.’
   = Someone (else) (has) combed the child. only disjoint reference

Data like these are generally taken as evidence for positing that in verbal passives, the external argument is present in the syntax, even when it is not expressed in a by-phrase (cf. Baker et al., 1989; Kratzer, 1994, among many others for English and German). Furthermore, it is commonly assumed that by-phrases syntactically and semantically express the external argument in passives as well as in nominalisations (most recently in Bruening, 2013). Combining this with the assumption that there are no external arguments in adjectival passives leads to the prediction that by-phrases should never appear in adjectival passives.

The puzzle we want to explore in this paper is that there are many instances where adjectival passives do combine with by-phrases. Such data have been reported in the literature on English (McIntyre, 2013; Bruening, to appear) and German (e.g. Rapp, 1997; Kratzer, 2000; Schlücker, 2005; Maienborn, 2011; Gehrke, 2013, and literature cited therein).¹ In Spanish, phrases headed by por ‘by’

¹Hebrew and Greek data of this sort can be found in Meltzer-Asscher (2011); Doron (to appear) and Anagnostopoulou (2003); Alexiadou and Anagnostopoulou (2008); Anagnostopoulou and Samioti (to appear), respectively. However, apart from Meltzer, these authors argue for the presence of Voice in the respective adjectival participles and thus for cross-linguistic variation with respect to the presence of an external argument with adjectival participles in Greek and Hebrew (causative templates), as opposed to the absence thereof in English or German (but see Alexiadou
(henceforth by-phrases) are not impossible with adjectival passives either (3-a), and are attested in corpora (3-b,c).

(3) a. Ese cuadro está pintado por un niño.
   ‘That picture is painted by a child.’

b. La sociedad está barrida por un vendaval de igualitarismo.
   ‘The society is swept by a strong wind of egalitarianism.’

c. Los expertos advierten de los peligros de las dietas que no están supervisadas por los especialistas.
   ‘Experts warn of the dangers of diets which are not supervised by specialists.’

There are different theoretical options of how to account for the occurrence of by-phrases with adjectival passives. First, one could argue that such combinations are not real adjectival passives. For example, they could be treated as instances of verbal passives, and the only difference is the use of estar instead of ser. We think this would be an ad hoc stipulation, though, and we do not know of anyone who has proposed this kind of account. Alternatively, one could argue that such by-phrases modify the state directly, in the absence of an event (e.g. Meltzer-Asscher, 2011, for Hebrew).

The participles under discussion, then, behave on a par with genuine (i.e. non-derived) nouns that combine with by-phrases (e.g. a novel by García Marquez) or other such prepositional phrases (PPs), as in (4-a), or with genuine adjectives that take PP arguments, e.g. (4-b).

(4) a. muerte por envenenamiento
   ‘death by poisoning’

b. (huesos) doloridos por el trabajo sobre la tierra dura
   ‘painful (bones) by the work over the harsh land’

et al., 2012). In the remainder of this paper we will only focus on Spanish, which behaves like German and English.

A similar proposal for German is found in the papers by Maienborn and colleagues (e.g. Maienborn, 2011), who argue that event-related modifiers apply to the state and coerce this state description into an event description. Our account crucially departs from both Maienborn’s and Meltzer’s in assuming that an event is always present in adjectival passives, so that there is no need for event coercion or meaning postulates, which these proposals rely on, to account for event-related modification.
In this paper, we will argue that while some by-phrases are truly state-related and could thus be treated as arguments of the adjectival phrase, there are clear cases in which the particular by-phrases modify events rather than states or adjectives.

A second kind of account that is compatible with the data is to claim that the previous literature had it wrong and adjectival passives do contain external arguments. This is basically the position that Bruening (to appear) defends for English.\textsuperscript{3} There are a number of further arguments that might point in this direction. For example, Bruening argues that the lack of the disjoint reference effect is an illusion that only appears with (potentially) reflexive predicates, and he furthermore shows that there are plenty of cases where adjectival passives in English do allow for control into purpose clauses (see also Alexiadou et al., 2012, for similar data from German). Purpose clauses with Spanish adjectival passives are also attested in the corpus (5), albeit very rarely.

\textbf{(5) a.} El nuevo fármaco está diseñado para bloquear la acción de esta enzima. The new medicine is designed for block the action of this enzyme.’

\textbf{(5) b.} No están pensados para satisfacer a grupos concretos de jóvenes. They are not intended to satisfy particular youth groups.’

Hence, we could conclude that by-phrases with adjectival and verbal passives are essentially the same in that they specify the external argument that is present in both types of passives.

In this paper, however, we will show that at least in German and Spanish, there are still differences between the by-phrases we find with adjectival and verbal passives, and these differences are not expected under Bruening’s (to appear) account (see also Gehrke, 2013, for the same claim about German). We will argue that both passives have implicit external arguments, which is in line with Bruening. However, contra Bruening, we will provide empirical evidence from corpus data to show that Spanish by-phrases with adjectival passives are fundamentally different from those with verbal passives and from by-phrases with adjectives.\textsuperscript{4}

\textsuperscript{3}See Alexiadou et al. (2012) for further discussion of English and German data and McIntyre (2013) for a similar claim for English.

\textsuperscript{4}We will not have anything more to say about purpose clauses, but see Alexiadou et al. (2012) for more discussion of relevant data from German and English.
The paper is structured as follows. Section 2 shows for German and Spanish that *by*-phrases with verbal and adjectival passives differ in the type of complements they take. Section 3 presents a corpus study of Spanish *by*-phrases with verbal and adjectival passives, which supports the trend outlined in the previous section. Section 4 presents the account. Finally, section 5 concludes.

2 The point of departure

As a point of departure we take Gehrke’s (2013) discussion of *by*-phrases with German adjectival and verbal passives.

2.1 German *by*-phrases with adjectival and verbal passives

Gehrke (2013) shows that the complements of *by*-phrases (headed by *von*) in verbal passives introduce discourse referents, allow for control into purpose clauses and can be modified by (common intersective) modifiers (6) (cf. (7)-(9) in Gehrke, 2013).^5

(6) a. Das Bild wurde von einem Kind angefertigt. Es hatte rote Haare.
   ‘The drawing has been produced by a child. He/she had red hair.’

b. Das Bild wurde von einem Kind angefertigt, um seine Eltern zu erfreuen.
   ‘The drawing has been produced by a child in order to make his/her parents happy.’

c. Das Bild wurde von einem blonden Kind angefertigt.
   ‘The drawing has been produced by a blond child.’

The complements of event-related *by*-phrases with adjectival passives, however, crucially do not allow any of these (7) (cf. (7)-(9) in Gehrke, 2013).

^5Similarly to Spanish, German morphologically distinguishes between the two types of passives: in adjectival passives the past passive participles combines with an inflected form of *sein* ‘be’, in verbal passives with an inflected form of *werden* ‘become’.
(7)  a. The drawing was produced by a child. It had red hairs.
    b. The drawing was produced by a child in order to make his/her parents happy.
    c. The drawing was produced by a blond child.

There is a second type of by-phrase that can appear with adjectival passives, namely when the underlying predicate is stative and not eventive; state-related by-phrases differ from event-related by-phrases in prosody, available word order variation, and compatibility with un-prefixation (see Gehrke, 2013, and literature cited therein for further discussion). In addition, Schlücker (2005) observes that the complements of state-related by-phrases have a more ‘concrete’ character. The complements of state-related by-phrases, in fact, behave on a par with those of by-phrases with verbal passives, in that they introduce discourse referents (8-a) and can be modified (8-b) (cf. (20) in Gehrke, 2013).

(8)  a. He is impressed by a melody. He heard it yesterday on the radio.
    b. He is impressed by a melody that he heard on the radio yesterday.

Gehrke (2013) concludes from the German facts that the complements of event-related by-phrases appearing with adjectival passives are non-referential or at most weakly referential, and often have a more ‘generic’ flavour, rather than naming an actual participant of a particular event. This is also reflected by the impression that there is a tendency for weakly or non-referential nominals in these phrases, such as indefinite or bare nominals and also weak definites (in the sense of Carlson et al., 2006, see below) (a similar impression is conveyed in Schlücker, 2005).
furthermore shows that the preference for weakly referential nominals holds quite generally for event-related modifiers of adjectival passives that name a participant of the underlying event, e.g. for instruments (9).

(9) a. Der Brief ist mit roter Tinte / (einem) Bleistift geschrieben.  
    the letter is with red ink / (a) pencil written  
   ‘The letter is written with red ink / (a) pencil.’

     b. Der Ordner war mit einem Passwort gesichert.  
    the folder was with a password secured  
   ‘The folder was password-protected.’

Such complements do not introduce a discourse referent (10-a) and cannot be modified by (common intersective) modifiers (10-b) either.

(10) a. Die Karte ist/war mit einem Bleistift geschrieben. #Er war blau.  
    the card is/was with a pencil written he was blue  
   ‘The card is/was written with a pencil. #It was blue’

    b. *Die Karte ist mit einem kurzen Bleistift geschrieben.  
    the card is with a short pencil written  
   intended: ‘The card is written with a short pencil.’

In the remainder of this paper, we will informally group such nominals under the labels ‘specific’ and ‘generic’ to distinguish between the different referential character.

Building on Gehrke (2012), Gehrke (2013) argues that adjectival passives make available an event kind, rather than an event token, and that event-related modification with adjectival passives is only possible when the modifier can apply to an event kind. This account is further supported by the fact that the underlying event cannot be modified by spatial or temporal modifiers (11), i.e. it lacks spatiotemporal location (cf. (14)-(16) in Gehrke, 2012).

(11) a. Die Tür war kürzlich geöffnet.  
    the door was recently opened.
   (i) The door was recently in the state of being open.
   (ii) *NOT: The door has been opened recently.

   b. *Der Computer ist vor drei Tagen repariert.  
    the computer is before three days repaired  
   intended: ‘The computer is repaired three days ago.’

   c. #Die Reifen sind in der Garage aufgepumpt.  
    the tires are in the garage inflated  
   intended: ‘The tires are inflated in the garage.’ (= the inflating took place in the garage)
d. #Das Kind war im Badezimmer gekämmt. 
the child was in the bathroom combed

intended: ‘The child was combed in the bathroom.’ (= the combing took place in the bathroom)

In particular, Gehrke argues that an adjectival passive construction refers to the instantiation of a consequent state kind of an event kind. From this proposal it follows that this construction makes available an event kind argument as well as a state token argument, which can both be modified. The complements of state-related by-phrases with adjectival passives (can) have a more specific or concrete character and be strongly referential, precisely because they can access a state token, in contrast to event-related ones which can only modify an event kind. Hence, the complements of state-related by-phrases are expected to behave like the complements of by-phrases with verbal passives, which (can) name actual participants of a particular event.

We will return to the formal details of this account in section 4, after we have presented our corpus study of by-phrases with Spanish adjectival and verbal passives in section 3. To anticipate this section, we will briefly show that the observations about the different by-phrases with German adjectival and verbal passives carry over to Spanish.

2.2 Spanish by-phrases with adjectival and verbal passives

The following examples show that the contrast between the complements of event-related by-phrases with verbal and adjectival passives that we have identified in German carries over to Spanish. As can be seen from (12), the complements of event-related by-phrases with Spanish verbal passives introduce discourse referents, allow for control into purpose clauses and can be modified by common intersective modification, whereas those with adjectival passives do not (13).

(12) a. El cuadro fue pintado por un niño. Era pelirrojo.
the picture was painted by a child was red-haired
‘The picture was painted by a child. He had red hair.’
b. El cuadro fue pintado por un niño para agradar a sus padres.
the picture was painted by a child to please to his parents
‘The drawing was painted by a child in order to please his parents.’
c. El cuadro fue pintado por un niño pelirrojo.
the picture was painted by a child red-haired
‘The drawing was painted by a red-haired child.’

(13) a. El cuadro estaba pintado por un niño. ??Era pelirrojo.
the picture was.LOC painted by a child was red-haired
b. ??El cuadro estaba pintado por un niño para agradar a sus padres.
the picture was painted by a child to please to his parents.

c. ??El cuadro estaba pintado por un niño pelirrojo.
the picture was painted by a child red-haired

Furthermore, when the underlying predicate is stative we get by-phrases with a rather specific character, in analogy to the German data in (8). For example, (14) shows that the respective complement can be modified by a relative clause.

(14) Estaba impresionada por la melodía que tocó la orquesta en el auditorio.
was LOC impressed by the melody that played the orchestra in the auditorium.
‘She was impressed by the melody that the orchestra played in the auditorium.’

To conclude, Spanish seems to behave like German in that event-related by-phrases with adjectival passives have a more generic character, whereas those with verbal passives as well as state-related by-phrases with adjectival passives derived from stative predicates have a more specific character. In particular, the complements of event-related by-phrases with adjectival passives do not seem to refer to an actual entity in the discourse. To substantiate this impressionistic view of a qualitative difference in complements of by-phrases with adjectival and verbal passives, we decided to extract and analyse corpus data from Spanish and support it by quantitative data.

Our expectations were as follows. With event-related by-phrases of adjectival passives, we expected to find a large number of indefinite and bare nominals, i.e. nominals that lend themselves more easily to a generic interpretation and/or are less referential (see, e.g. Espinal and McNally, 2011, on an analysis of Spanish bare nominals as property- rather than entity-denoting), and few occurrences of proper names and personal pronouns, i.e. strongly referential nominals. With by-phrases of verbal passives, in turn, we expected to find the reverse contribution, and in particular many more instances of strongly referential nominals. Finally, we expected no difference between state-related by-phrases of adjectival and verbal passives. Let us then turn to the corpus data.

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6Since, in principle, both event kind and event token reference should be possible with verbal passives, there could also be an equally high number of ‘generic’ and ‘specific’ nominals, so the more important difference we expect to find is with respect to strongly referential nominals with verbal and adjectival passives.
The analysis of Spanish by-phrases presented in this section proceeds in three steps. First, we consider all instances of participial constructions formed with ser and estar that appear with by-phrases; this is presented in section 3.2. In section 3.3, we analyse by-phrases that occur with participles derived from eventive and stative predicates separately, to see whether the difference in the type of the underlying predicate plays a role. Finally, in section 3.4, these data will be compared to by-phrases modifying adjectives (in predicative position) in combination with the copulas ser and estar.

Before we turn to the quantitative analysis of the results, however, section 3.1 presents the corpus and strategies employed to obtain the data from the corpus.

3.1 Corpus and data extraction

The data for this study has been extracted from a corpus of Spanish from the 20th century, which contains more than 8 million words and comprises a wide variety of genres. The documents forming this corpus come from the Gutenberg project, as well as the Lexesp corpus (Sebastián-Gallés, 2000). All the words in this corpus are enriched with linguistic information of lemma and part of speech. The Lexesp corpus is originally annotated with lemma and part of speech, and texts from the Gutenberg project were automatically annotated with linguistic information using the open source language analyser FreeLing. Annex A contains the complete list of texts from the Gutenberg project forming part of this corpus.

We obtained frequency counts of all occurrences of ser + past participles (PP) (verbal passives) in combination with by-phrases, and estar + PP (adjectival passives) in combination with by-phrases from this corpus. In the queries used to obtain these occurrences, we allowed a number and a variety of words to appear between ser and estar and PP, and also different word orders of both elements. The frequency counts were obtained using the IMS Open Corpus Workbench and analysed with the open-source statistical software R (R-Development-Core-Team, 2010).

For comparison, we also obtained frequency counts of (genuine) adjectives combining with by-phrases. The adjectives considered in this study are of three types: (i) the 281 most frequent adjectives in the corpus, which are 1.6% of the...
total number of adjective types in the corpus,\(^{12}\) (ii) adjectives morphologically related to participles, which are called *participios truncos* ‘truncated participles’ in the Spanish literature (cf. Bosque, 1990, 1999), e.g. *enfermo* ‘sick’, *estrecho* ‘tight’, *fijo* ‘firm’,\(^{13}\) and (iii) adjectives describing a psychological state, e.g. *alegre* ‘cheerful’, *amoroso* ‘loving’, *confuso* ‘confusing’, *contento* ‘glad’.\(^{14}\)

To exclude noise that could have been transferred to the statistical analysis otherwise, all data have been examined and corrected manually. For example, we excluded cases of incorrect part of speech tagging, where some token was labelled as an adjective or a participle but in fact was a different category. In addition, we excluded cases of prepositional phrases describing a spatial location rather than functioning as a *by*-phrase, e.g. *El edificio está destrozado por dentro* ‘the building is destroyed on the inside’, or *por* used in other types of fixed expressions.\(^{15}\)

This correction, however, does not prevent us from having data in our corpus not covered by the queries, if, for example, some word in the corpus is not tagged as a participle, despite the fact that it is one. Even if some parts of the corpus are manually corrected (at least the part of the *Lexesp corpus*), some amount of error is expected to appear in any corpus. On the other hand, for the *Gutenberg project* part of the corpus, which was enriched with linguistic information using FreeLing,

\(^{12}\)There are 17,379 different types of adjectives in the corpus -525,300 tokens-, from which the 281 most frequent types were selected, excluding those adjectives in groups (ii) and (iii).

\(^{13}\)Morphologically related participles of these adjectives are *enfermado* ‘sickened’, *estrechado* ‘tightened’ and *fijado* ‘fixed’.

\(^{14}\)Adjectives of type (iii) have a morphologically related psychological verb, e.g. *alegrar(se)* ‘to be/become happy’, *amar* ‘to love’, *confundir(se)* ‘to be/become confused’, *contentar(se)* ‘to be/become content’.

\(^{15}\)See (i), where the *por*-phrase is a fixed expression:

\(i\) a. América estaba descubierta por entero -dijo Ojeda- cuando todavía enviaban los vecinos de Tenerife expediciones a su costa ‘America was fully discovered -said Ojeda- when the inhabitants of Tenerife still sent expeditions to its coast.’

b. Se trata de esbozar un modelo generativo, donde la noción de generación debe ser interpretada por referencia a un proceso real de producción-consumo de ideologías. ‘It is about sketching a generative model, where the notion of generation must be interpreted with reference to an actual process of production-consumption of ideologies.’
we expect to have a precision in the tagging closer to state-of-the-art taggers for modern language varieties, that is around 97%, which means that approximately 3 in 100 words are assigned an incorrect morphological category (Ratnaparkhi, 1996; Brants, 2000).

Let us then turn to the data.

3.2 By-phrases with ser and estar plus participle

Table 1 summarises the overall results we obtained from the corpus, taking into account all occurrences of by-phrases with both types of passives, irrespective of the verb class of the underlying predicate.

<table>
<thead>
<tr>
<th></th>
<th>Estar + PP</th>
<th>Ser + PP</th>
<th>p-value</th>
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<tr>
<td>Totals</td>
<td>3,574</td>
<td>6,923</td>
<td></td>
</tr>
<tr>
<td>With by-phrases</td>
<td>292</td>
<td>749</td>
<td></td>
</tr>
<tr>
<td>With by-phrases (%)</td>
<td>8.2%</td>
<td>10.8%</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Pronouns (%)</td>
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<td>6.3%</td>
<td>&lt;.05*</td>
</tr>
<tr>
<td>Proper names (%)</td>
<td>4.1% (5.8%)</td>
<td>7% (10%)</td>
<td>&lt;.01**</td>
</tr>
<tr>
<td>Possessive determiners (%)</td>
<td>3.8%</td>
<td>4.7%</td>
<td>.6463</td>
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<td>Demonstrative determiners (%)</td>
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<td>Definite determiners (%)</td>
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<td>52.4%</td>
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<td>&lt;.001***</td>
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<td>Bare singulars (%)</td>
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<td>9.2%</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>Other quantificational determiners (%)</td>
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<td>.6041</td>
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<td>Infinitive (%)</td>
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<td>1.1%</td>
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</tr>
</tbody>
</table>

Table 1: By-phrases with estar + PP and ser + PP.

The data show that the combination of by-phrases with adjectival passives is not exceptional, since 8.2% (N = 292/3,574) of adjectival passives in Spanish contain by-phrases, unlike what the traditional view outlined in the beginning of this paper would predict. Nevertheless, this is almost three points less than with verbal passives (10.8%; N = 749/6,923). According to a Pearson’s chi-square goodness-of-fit test, this difference is highly significant at a 99.9% confidence level ($\chi^2 = 18.218$, 1 d.f., $p < .001$).

The middle rows in Table 1 show that there are significant differences in the type of complements we find with by-phrases in adjectival and verbal passives. These differences are highly significant ($\chi^2$ test, 1 d.f., $p < .001$) for indefinite determiners and bare plurals, significant for definite determiners and (bare and non-bare) proper names (1 d.f., $p < .01$), and significant for pronouns, according
to Fisher’s exact test ($\chi^2$ test, 1 d.f., $p < .05$). In particular, the frequency of by-phrases with pronouns, proper names and NP complements headed by definite determiners is significantly higher with ser + PP (verbal passives) than with estar + PP (adjectival passives). In contrast, the frequency of by-phrases containing bare plurals and indefinite determiners is significantly lower with ser + PP than with estar + PP. Finally, there are no significant differences for bare singulars, possessives, demonstratives, and other quantificational determiners.

### 3.2.1 Discussion

These findings partially fit the impressionistic view and our expectations presented in section 2. In particular, we expected the complements of by-phrases with adjectival passives to have a generic and/or weakly referential flavour, which is supported by the higher number of indefinite noun phrases, (some instances of) which cross-linguistically have been analysed as not denoting entities but rather properties (i.e. of type $\langle e, t \rangle$), as well as bare plurals, which have been analysed cross-linguistically as generic noun phrases (at least since Carlson, 1977). The complements of by-phrases with verbal passives, in contrast, were expected to be more specific, which is supported by the higher number of definite noun phrases and proper names in such phrases, which are commonly analysed as entity-denoting expressions.

Contra our expectations, however, we did not find a significant difference in the number of demonstratives and possessives in by-phrases with estar + PP and ser + PP. We suspect that this is due to the fact that we have not made a distinction between stative and eventive predicates yet, a suspicion that will turn out to be correct in section 3.3. We will leave aside other quantificational determiners for future research, given that the semantics of each of them has to be taken into consideration separately, and at this point we cannot generalise over them. Here, we want to focus on the other unexpected finding, namely the fact that there is no significant difference with respect to bare singular, and furthermore that there even seem to be more instances of bare singulars with verbal passives even (though this is not significant). On closer inspection of the examples involving bare singulars, we found that most of the instances of bare singular in phrases headed by por with
verbal passives are fixed or idiomatic expressions in Spanish, and many of them are translated into English not with a by-phrase but with other PPs; see e.g. (15).

(15) a. Su comparecencia del día 11 [...] fue transmitida por televisión.
   ‘His appearance on the 11th day was broadcasted on television.’

b. la quitina sintetasa requiere ser activada por tratamiento proteolítico [...] para manifestar su función.
   ‘The Chitin synthesis has to be activated by proteolytic treatment in order for it to work.’

Since in principle fixed expressions as those in (15) should occur with either verbal or adjectival passives, and since furthermore the overall occurrence of bare singulars is rather low, we do not see this as a problem for our predictions.

3.2.2 Genericity and specificity indices

As a rough quantitative measure of the ‘generic’ vs. ‘specific’ character of by-phrases appearing with adjectival and verbal passives in this study, we calculated what we call the genericity index, which measures the generic or non-referential character of the nominals in by-phrases, and the specificity index, which quantifies the referential character of these modifiers. We measured both indices on a scale from 0 (minimum) to 1 (maximum). The genericity index was obtained as the result of summing up all counts of indefinite determiners and (singular and plural) bare nouns, divided by the total number of by-phrases within each construction. The specificity measure was obtained as the result of the sum of pronouns, proper names, possessives, and demonstratives divided by the total number of by-phrases. In this first approximation, definites were not taken into account, because in Romance languages the definite article is used for both (regular) definiteness and kind reference (see Chierchia, 1998; Dayal, 2004, and literature cited therein). We will return to definite nominals shortly, though.

The results are given in Table 2.
Table 2: Genericity and specificity indices of *by*-phrases with *estar/ser* + PP.

<table>
<thead>
<tr>
<th></th>
<th><em>Estar</em> + PP</th>
<th><em>Ser</em> + PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genericity index</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Specificity index</td>
<td>0.1</td>
<td>0.2</td>
</tr>
</tbody>
</table>

As expected, the genericity index is higher for modifiers that appear with adjectival passives (0.4) than with verbal passives (0.2). The specificity index, in contrast, suggests that the respective nominals with adjectival passives have a rather low referential character (0.1), which was also expected. For verbal passives, both indices are the same and rather low, and we assume that this is so because we left out definite nominals. In any case, as we mentioned before, no difference was predicted or expected since in principle any type of noun phrase can appear in *by*-phrases with verbal passives.

### 3.2.3 Definites

Let us then have a closer look at definite nominal complements of *by*-phrases with adjectival and verbal passives. On closer inspection, it turns out that many examples of *by*-phrases with definite determiners that appear with adjectival passives are generic, as can be seen in (16).

(16) a. […] nuestra vida está gobernada por los símbolos.
   ‘Our life is governed by symbols.’

b. A mí los jugadores de este Atlético de Madrid me caen bien: están perseguidos por la desgracia[…]
   ‘I really like the players of this Atlético Madrid: They are pursued by disgrace.’

One indication that these are generic noun phrases, for example, is the fact that they are translated into English by bare nominals.

Other definite nominals in *by*-phrases with adjectival passives, in turn, can be identified as weak definites, which do not behave like regular definite noun phrases, since they lack uniqueness and/or familiarity and do not refer to a particular entity in the discourse, as in, e.g. *read the newspaper, go to the store* (cf. Carlson et al., 2006; Aguilar-Guevara and Zwarts, 2011). A further case that has been subsumed under the label of weak definites are noun phrases that refer to entities that are unique in all contexts, quasi by general world knowledge, such as
the moon, the sun (cf. Cieschinger and Bosch, 2011). One such example from our corpus is given in (17).

(17) Otras estaban quemadas por el sol, como insectos que acabasen de rozar el fuego.

‘Others were burnt by the sun, like insects that have just skimmed the fire.’

We will follow Aguilar-Guevara and Zwarts (2011) and assume that weak definites refer to uniquely identifiable (well-established) kinds or subkinds of individuals, and thus we expect that under a weak definite reading, such nominals should be possible in by-phrases with adjectival passives.

To manually check whether a given definite in a particular context is a regular definite or a weak or generic definite, we added adjectival modification and/or changed the number. If these changes rendered the respective example ungrammatical, as illustrated in (18), we decided to count such definites as non-regular definites, which we will descriptively label ‘non-referential definite NPs’ in the following.

(18) a. *Nuestra vida está regida por el símbolo.

b. *Los jugadores están perseguidos por las desgracias.

c. *Otras estaban quemadas por los soles.

The results of the analysis of definites in by-phrases are summarised in Table 3.

<table>
<thead>
<tr>
<th></th>
<th>Estar + PP</th>
<th>Ser + PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>124</td>
<td>394</td>
</tr>
<tr>
<td>Non-referential definite</td>
<td>58.9%</td>
<td>36.3%</td>
</tr>
<tr>
<td>Referential definite</td>
<td>41.1%</td>
<td>63.7%</td>
</tr>
</tbody>
</table>

Table 3: Weak vs. strong definites in by-phrases with estar/ser + PP.

In particular, we found that almost two thirds of the definite by-phrases with estar + PP are weak or generic, whereas with ser + PP this is only the case for one third. As a consequence, we revised the genericity and specificity indices presented above and obtained the new numbers in Table 4.
As the table shows, we obtained a higher measure for both the genericity (0.6) and specificity index (0.3) for adjectival passives, with still 0.3 points of difference between both measures. The revised genericity and specificity index for verbal passives suggest that these have a rather specific character (0.5), in comparison with adjectival passives. However, the genericity index of 0.4 for verbal passives suggests that they also have a certain genericity character, so that we can conclude that by-phrases combining with these constructions can be either generic or specific.

The fact that we still do not find a more striking categorical difference in the genericity vs. specificity character between by-phrases with adjectival and verbal passives might be due to the fact that the instances considered in this general analysis involve passives derived from both eventive and stative predicates. Therefore, we will now take a closer look at this distinction.

### 3.3 State- vs. event-related by-phrases

To see whether the aspectual type of the underlying predicate in adjectival and verbal passives, i.e. whether it is eventive or stative, plays a determining role in the kinds of by-phrases we find, we investigated by-phrases with eventive and stative predicates separately, and compiled respective lists of verbs. The list of eventive predicates contains activities (e.g. acariciar ‘to stroke’, buscar ‘to search’), accomplishments (e.g. arrasar ‘to raze’, arreglar ‘to fix’, atravesar ‘to cross’), and achievements (e.g. abrir ‘to open’, acertar ‘to hit’, adquirir ‘to acquire’, alcanzar ‘to achieve’), which represent the classical aspectual classes of eventive predicates (Vendler, 1957; Dowty, 1979) (see also de Miguel, 1999; Marín, 2001, for Spanish). In total this list contains 150 eventive predicates. The list of stative predicates (with a total number of 165 verbs) includes individual-level predicates such as adorar ‘to adore’, amar ‘to love’, and atraer ‘to appertain’, as well as object experiencer psychological predicates, such as asustar ‘to frighten’ or aburrir ‘to bore’, which have been argued to be stative (Arad, 1999; Pylkkänen, 1999; Marín and McNally, 2011; Marín, 2011, among others).

The results are given in Tables 5 and Table 6, which summarise the frequencies of by-phrases with adjectival and verbal passives where the underlying predicate is eventive and stative, respectively. In the remainder of this paper, we will label
these *by*-phrases event-related and state-related, respectively.

<table>
<thead>
<tr>
<th></th>
<th><em>Estar</em> + PP-eventive</th>
<th><em>Ser</em> + PP-eventive</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>515</td>
<td>854</td>
<td></td>
</tr>
<tr>
<td>With <em>by</em>-phrases (%)</td>
<td>5.4%</td>
<td>15.9%</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Pronouns (%)</td>
<td>3.6%</td>
<td>7.4%</td>
<td>.7538</td>
</tr>
<tr>
<td>Proper names (%)</td>
<td>7.1% (3.6%)</td>
<td>4.4% (9.6%)</td>
<td>.7698</td>
</tr>
<tr>
<td>Possessive determiners (%)</td>
<td>-</td>
<td>5.9%</td>
<td>-</td>
</tr>
<tr>
<td>Demonstrative determiners (%)</td>
<td>-</td>
<td>2.9%</td>
<td>-</td>
</tr>
<tr>
<td>Definite determiners (%)</td>
<td>32.1%</td>
<td>57.4%</td>
<td>&lt;.05*</td>
</tr>
<tr>
<td>Indefinite determiners (%)</td>
<td>25%</td>
<td>6.6%</td>
<td>&lt;.01**</td>
</tr>
<tr>
<td>Bare singulars (%)</td>
<td>3.6%</td>
<td>0.7%</td>
<td>.3132</td>
</tr>
<tr>
<td>Bare plurals (%)</td>
<td>25%</td>
<td>8.1%</td>
<td>&lt;.01**</td>
</tr>
<tr>
<td>Other quantificational determiners (%)</td>
<td>3.6%</td>
<td>5.1%</td>
<td>1</td>
</tr>
<tr>
<td>Infinitive (%)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Genericity index</td>
<td>0.8</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Specificity index</td>
<td>0.2</td>
<td>0.6</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Event-related *by*-phrases with *estar* and *ser* + PP.

As can be seen from Table 5, event-related *by*-phrases behave in a similar way as we observed in Table 1 in the previous section. In particular, we again find a higher frequency of such *by*-phrases with *ser* + PP (verbal passives) as opposed to *estar* + PP (adjectival passives). Furthermore, there is a higher frequency of indefinites and bare plurals in such *by*-phrases with adjectival passives. In contrast, event-related *by*-phrases with verbal passives contain a higher number of definites, pronouns, and proper names. In addition, we observe a further difference that we had already expected to find in the previous section but did not, namely that there is a higher number of possessives and demonstratives with verbal passives; in fact, no such cases were found with adjectival passives. The last column indicates that these differences are statistically significant (according to Fisher’s exact test) for event-related *by*-phrases combining with these passives in general, as well as for definites, indefinites, and bare plurals, but not for pronouns and proper names.\footnote{This contrasts with the general results in Table 1, where there were significant differences for pronouns and proper names.}

Finally, the last rows of Table 5 indicate that event-related *by*-phrases have a high genericity index and a low specificity index for adjectival passives, whereas we find the reverse for verbal passives, and this time this contrast is much bigger than the one we found in the previous section.
The numbers in Table 6 display which types of state-related *by*-phrases that appear with verbal and adjectival passives.

<table>
<thead>
<tr>
<th></th>
<th>Estar + PP-stative</th>
<th>Ser + PP-stative</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>319</td>
<td>419</td>
<td></td>
</tr>
<tr>
<td>With <em>by</em>-phrases</td>
<td>53</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>With <em>by</em>-phrases (%)</td>
<td>16.6%</td>
<td>13.8%</td>
<td>.3007</td>
</tr>
<tr>
<td>Pronouns (%)</td>
<td>1.9</td>
<td>15.5%</td>
<td>&lt;.01**</td>
</tr>
<tr>
<td>Proper names (%)</td>
<td>3.8 (1.9%)</td>
<td>3.4% (8.6%)</td>
<td>.3259</td>
</tr>
<tr>
<td>Possessive determiners (%)</td>
<td>7.5</td>
<td>12.1%</td>
<td>.6324</td>
</tr>
<tr>
<td>Demonstrative determiners (%)</td>
<td>3.8</td>
<td>1.7%</td>
<td>.605</td>
</tr>
<tr>
<td>Definite determiners (%)</td>
<td>67.9%</td>
<td>51.7%</td>
<td>.1212</td>
</tr>
<tr>
<td>Indefinite determiners (%)</td>
<td>5.7</td>
<td>5.2%</td>
<td>1</td>
</tr>
<tr>
<td>Bare singulars (%)</td>
<td>1.9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bare plurals (%)</td>
<td>-</td>
<td>5.2%</td>
<td>.2447</td>
</tr>
<tr>
<td>Other quantificational determiners (%)</td>
<td>1.9</td>
<td>5.2%</td>
<td>.6197</td>
</tr>
<tr>
<td>Infinitive (%)</td>
<td>5.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Genericity index</td>
<td>0.3</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Specificity index</td>
<td>0.6</td>
<td>0.6</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: State-related *by*-phrases with *estar* and *ser* + PP.

What we observe from this table is that there is a striking contrast between state-related and event-related *by*-phrases with adjectival passives, which is what we expected to find. In particular, state-related *by*-phrases with adjectival passives appear to be of the same type as both state- and event-related *by*-phrases with verbal passives, and all three differ from event-related *by*-phrases with adjectival passives. There are no significant differences between state-related *by*-phrases with verbal and adjectival passives for any of the categories, except for pronouns (p < .01, according to Fisher’s exact test). Furthermore, the genericity and specificity indices (the last two rows in Table 6) are the same for both.\(^{19}\)

In the next subsection, we turn to *by*-phrases with genuine (i.e. non-derived) adjectives.

\(^{19}\)In order to calculate these indices, we again took into account the different readings of definite determiners as described in the previous section. In particular, there were 13 cases of weakly referential or generic definites in state-related *by*-phrases of adjectival passives as opposed to 11 with verbal passives, as well as 23 occurrences of referential *by*-phrases with adjectival passives as opposed to 17 with verbal passives. In the case of eventive predicates we did the same analysis and found that 6 cases are weakly referential or generic with adjectival passives as opposed to 23 with verbal passives, as well as 3 cases of referential event-related *by*-phrases with adjectival passives as opposed to 54 with verbal passives.
3.4 *By-phrases with adjectives*

To contrast the findings of the previous sections we also examined occurrences of *by*-phrases with predicative genuine adjectives. The results are summarised in Table 7. In this table the second and third columns contain the p-values obtained when comparing the number of *by*-phrases with predicative adjectives with those appearing with *estar* + PP (adjectival passives; second column, A) and with *ser* + PP (verbal passives; third column, B).

<table>
<thead>
<tr>
<th></th>
<th>Adjective p-value (A)</th>
<th>p-value (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>251,560</td>
<td></td>
</tr>
<tr>
<td>Total with <em>by</em>-phrases</td>
<td>254</td>
<td></td>
</tr>
<tr>
<td>With <em>by</em>-phrases (%)</td>
<td>0.1</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Pronouns (%)</td>
<td>5.1</td>
<td>.3229</td>
</tr>
<tr>
<td>Proper names (%)</td>
<td>0.4 (1.6)</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Possessive determiners (%)</td>
<td>17.7</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Demonstrative determiners (%)</td>
<td>4.6</td>
<td>&lt; .05*</td>
</tr>
<tr>
<td>Definite determiners (%)</td>
<td>45.7</td>
<td>.07496</td>
</tr>
<tr>
<td>Indefinite determiners (%)</td>
<td>5.9</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Bare singulars</td>
<td>6.3</td>
<td>&lt; .01**</td>
</tr>
<tr>
<td>Bare plurals (%)</td>
<td>20.8</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Other quantificational determiners (%)</td>
<td>1.6</td>
<td>&lt; .01**</td>
</tr>
<tr>
<td>Infinitive (%)</td>
<td>10.6</td>
<td>&lt; .001***</td>
</tr>
</tbody>
</table>

Table 7: *By*-phrases with adjectives.

There are a lot fewer combinations of *by*-phrases with adjectives than with both verbal and adjectival passives (0.1%; N = 254/251,560). This difference is highly significant at a 99.9% confidence level both between adjectives and verbal passives, as well as between adjectives and adjectival passives (χ² test, 1 d.f., p < .001). In general then, there are very few instances of *by*-phrases with genuine adjectives, so that it might even be questionable whether it makes sense to compare such phrases with those with adjectival and verbal passives with respect to the complements we find with them. Nevertheless, we see that the differences in the types of complements we find with adjectives as opposed to both verbal and adjectival passives are statistically significant in most cases, except for with pronouns, definite and indefinite determiners.

Under closer inspection of the actual occurrences of such phrases headed by *por* with adjectives, it turns out that in other languages, such as English, a different preposition is used in the same contexts, which might even call into question whether we are dealing with a *by*-phrase in these cases: cf. (19).
(19) a. Porque él estaba loco por Pepita, realmente loco, querido doctor!
   ‘Because he was crazy for Pepita, really crazy, dear doctor!’

b. Muchos de estos libros son especialmente interesantes por uno u otro motivo.
   ‘Many of these books are especially interesting for one reason or another.’

Overall, then, we believe that the significantly lower number of by-phrases with adjectives as opposed to adjectival passives shows that these are very different, and that this is an indication that by-phrases with adjectival passives should not be analysed as modifying the state (adjective) directly (contra Maienborn, 2007, 2009; Meltzer-Asscher, 2011).

3.5 Interim conclusion

In sum, the corpus data analysis supports our claims outlined in section 2. In particular, there are many more by-phrases with adjectival passives than with by-phrases with genuine adjectives, and they are also qualitatively different. This supports the claim that the by-phrases do not modify the adjective directly. Furthermore, in addition to a quantitative difference, there is a qualitative difference between adjectival and verbal passives with respect to the complements we find in event-related by-phrases. This was indicated by a higher genericity index with adjectival passives (a large number of indefinites and bare nominals) as opposed to a higher specificity index with verbal passives (a large number of strongly referential noun phrases). Finally, there was no difference between state-related by-phrases with adjectival and verbal passives, which appear to be of the same quality as event-related ones with verbal passives.

Let us then turn to the account.

4 The account

The discussion of the German data in section 2 and the corpus data analysis of the respective Spanish data in section 3 established several things. First, event-related by-phrases with adjectival passives are crucially different from event-related by-phrases with verbal passives: the external argument with the former is not syn-
tactically active, given the lack of control into purpose clauses and the lack of the disjoint reference effect.

We follow the common assumption that external arguments are syntactically licensed by a functional projection (VoiceP) (in the sense of Kratzer, 1996), and that VoiceP is absent in German and Spanish adjectival passives (see also Kratzer, 2000; Anagnostopoulou, 2003, for the same claim for German). To account for the presence of some by-phrases with adjectival passives, we build on Schäfer’s (2012) general distinction between formal licensers (e.g. Voice, licensing external arguments) and thematic licensers (e.g. resultative / bi–eventive structures licensing causers), and thus assume the structural dissociation of the introduction of external arguments (Spec, VoiceP) and causative semantics (e.g. v_{CAUS}) (see also Alexiadou et al., 2006; Pylkkänen, 2008). In particular, we follow Gehrke’s (2013) proposal that by-phrases in German adjectival passives are licensed by the causative (or agentive) semantics associated with the underlying verb and extend this to by-phrases in Spanish.

Second, the complements of event-related by-phrases with adjectival passives do not introduce discourse referents and cannot be modified; hence, they are non-referential (or at most weakly referential). This difference in the kind of event-related by-phrases available to adjectival passives as opposed to verbal passives is further supported by the nature of the complements in these phrases: With adjectival passives, we mostly get indefinite and bare nominals, as well as definite noun phrases with a generic or weak definite interpretation, whereas with verbal passives we find a higher number of strongly referential noun phrases, such as regular definite noun phrases, pronouns, and proper names. We take this as further support for the analysis proposed in Gehrke (2012, 2013) according to which adjectival passives involve event kinds rather than event tokens, and we will come back to this shortly.

Third, the complements of state-related by-phrases with adjectival passives behave on a par with (state- and event-related) by-phrases of verbal passives, in being strongly referential. We take this fact to support the idea that adjectival passives can combine with two qualitatively different kinds of by-phrases: event-related ones modify the event kind (as supposed to those with verbal passives, which can modify an event token), and state-related ones which modify a state token, which is only possible with stative predicates. The syntactic difference between state- and event-related by-phrases has already been accounted for in Gehrke (2013); here we assume that this syntactic account can be extended to the Spanish cases as well, but since we want to focus on the semantics the interested reader is referred to that paper for more details and further syntactic differences between these two kinds of by-phrases (on which see also Rapp, 1996; Schlücker, 2005).

We will then turn to the semantic account.
4.1 The semantics of adjectival passives

There is one more important point that we have not really discussed here and which we therefore have to simply take it for granted (see Gehrke, to appear, for more details), and this has to do with the input requirements of adjectival passives. In particular, we assume that the input to an adjectival passive has to be a verb or verb phrase that refers to a change of state along a unique scalar dimension. Following Rappaport Hovav and Levin (2010), this will be captured in terms of BECOME.20

Following Gehrke (to appear), then, we assume that the derivation of an adjectival passive like the one in (20) is as in (21).

(20) La puerta está cerrada.

the door is.LOC closed

(21) a. Lexical semantics of cerrar- (type \(\langle e, \langle \langle s, \langle ev, t \rangle \rangle \rangle \rangle \rangle \)): 
\[ \lambda y \lambda x \lambda s \lambda e [\text{close}(e) \land \text{BECOME}(s)(e) \land \text{closed}(y, s) \land \text{Initiator}(x, e)] \]
b. Prt\(^0\) -d-: \(\lambda \phi \lambda y \lambda s \lambda e \exists x [\phi(e)(s)(x)(y)]\)
c. A\(^0\): \(\lambda \phi \lambda y \lambda s \exists e_k, x_k [\phi(e_k)(s)(x_k)(y)]\)
d. cerrado: 
\[ \lambda y \lambda s \exists e_k, x_k [\text{close}(e_k) \land \text{BECOME}(s)(e_k) \land \text{closed}(y, s) \land \text{Initiator}(x_k, e_k)] \]
e. AP la puerta cerrada: 
\[ \lambda s \exists e_k, x_k [\text{close}(e_k) \land \text{BECOME}(s)(e_k) \land \text{closed}(\text{the door}, s) \land \text{Initiator}(x_k, e_k)] \]

The lexical semantics of a result verb, in this case cerrar ‘(to) close’, is given in (21-a): there is a state \(s\) that comes into existence as a result of an event \(e\), with the holder of the state (the theme or experiencer) being \(y\) and the Initiator (agent or cause) of the event being \(x\).22 Passive participle formation in (21-b) existentially quantifies over the external (Initiator) argument.

20 From a diachronic point of view, this type of predicates has been shown to play a fundamental role in the origins and development of adjectival passives; see Sánchez Marco (2012, ch. 5).
21 Rather than purely temporally, BECOME here should be understood in more general terms, as introducing an opposition between two state kinds, i.e. degrees (see Anderson and Morzycki, to appear), on any kind of scale. This characterisation is rather informal but could be formalised along the lines of Kennedy and McNally (2005); Kennedy and Levin (2008); Kennedy (2012). In particular, the relevant property ascribed to the theme should be seen as a specific degree on a given scale, which is associated with the degree a theme normally has at the end of an event involving scalar change (temporal or spatial); this degree is the standard of comparison associated with the respective measure of change function (the scalar maximum if the input scale has such a maximum element, otherwise contextually fixed).
22 There are two options to interpret the variables \(s, e, x\) here. Either we assume that they range over both kinds (of events or entities) and tokens (of events or entities), or we make the stronger claim that VPs and NPs are predicates of event and nominal kinds, which get instantiated only when additional functional structure is added (e.g. Asp or Num) (see Zamparelli, 1995, for the nominal domain). We will follow the latter assumption, but for now refrain from subscripting the
Following Lieber (1980), it is generally assumed that the participle is turned into an adjective by zero-affixation (e.g. Kratzer, 1994; Maienborn, 2007), and this is represented in (21-c). The verb’s event variable $e$ is existentially bound as a kind when the participle is adjectivised, i.e. when the category is changed or specified (depending on the precise implementation). This allows a uniform analysis of past passive participles, whether they are used in verbal or adjectival passives.\(^{23}\)

Hence, at the stage of participle formation (21-b) both verbal and adjectival passive participles are still identical. What makes adjectival passives different from verbal passives is the adjectivisation of the participle. At this point, it is also determined that the implicit agent/cause of the event stays in the kind domain (represented as $x_k$). The semantics of the adjectival head and the output of adjectivisation are given in (21-c) and (21-d), respectively. The internal argument of the underlying verb, in turn, is the subject of the AP and thus has to be externalised at some point. McIntyre (2013) and Bruening (to appear) propose different versions of $\lambda$-abstraction of the verb’s object at the point of adjectivisation/stativisation, and in principle either will do for our purposes. We will gloss over the details here and assume that the output of adjectivisation after externalisation of the verb’s internal argument is as in (21-e).

From this analysis it follows that an adjectival passive refers to the instantiation of a result (consequent or inchoative) state kind of an event kind. The state is instantiated at some later stage and temporally located, so that temporal modifiers can access the state’s temporal index: some operator binds the state variable and asserts that the state takes place at an instant, which is part of an interval (see, e.g., Kamp, 1979; Higginbotham, 1985; Truswell, 2011, among others). Since the verbal structure associated with the event is not embedded under further verbal projections such as Aspect and Tense but adjectivised instead, the scale structure underlying the event kind is not associated with temporality.

\(^{23}\)Note that McIntyre (2013) and Bruening (to appear) collapse the tasks that we distribute over Prt (passivisation, existential quantification over the external argument) and Adj (stativisation, externalisation of the internal argument) into one passive Voice head, which they label Prt and Adj, respectively. The dissociation of passivisation and adjectivisation is motivated by the idea that at the point of participle formation both verbal and adjectival participles are alike, and more importantly, by the need for an attachment site for event-related modification before adjectivisation, which renders the event unaccessible for further modification (see Gehrke, 2013, for further discussion).
4.2 Event-related modification of adjectival passives

Event-related modifiers have to apply before adjectivisation, since they modify an event, not a state, and since the event is closed off and not accessible anymore after adjectivisation. From this it follows that adjectivisation can also target phrases (following Kratzer, 1994, 2000), and the relevant phrase in this case is a PrtP. Event-related modifiers, then, adjoin to PrtP. Restrictions on such modification follow from the fact that only kind-related modification is possible.

In addition, Gehrke (to appear) shows that in general there is a semantic similarity of nominals in all kinds of event-related modifiers of adjectival passives to other weakly or non-referential nominals, which is also supported by our findings from the corpus data analysis. In particular, there is a similarity with nominals that have been analysed as (pseudo-)incorporated (e.g. Massam, 2001; Farkas and de Swart, 2003; Dayal, 2011; Espinal and McNally, 2011, for Niuean, Hungarian, Hindi, Catalan/Spanish), which are commonly bare nominals analysed as property- rather than entity-denoting and as modifying the VP into which they semantically incorporate. Furthermore, we have already seen that many definite NPs show traits of weak definites (e.g. Carlson et al., 2006; Aguilar-Guevara and Zwarts, 2011). Both types of nominals do not allow token modification, are discourse opaque (i.e. cannot be referred back to by pronominal anaphora), and together with the verb they appear with name some kind of established event (sub)kind, e.g. of newspaper-reading, stamp-collecting, beach-going. In section 2 we saw that the nominals in event-related by-phrases with German and Spanish adjectival passives have the same properties, and in a ways we get instantiations of result states of established event kinds, such as childish drawings (drawn by a child) or pencil-writings (written with a pencil).

Based on these observations, Gehrke (to appear) proposes that it might be feasible to analyse event-related modifiers (e.g. (22)) as semantically incorporating into the participle (23) (building on Dayal, 2011), before the participle is adjectivised (24).

(22) Mund und Nase waren mit Klebeband verschlossen. ‘Mouth and nose were closed with tape.’

(23) (verbal) closed_{INC-Prt}:
\[ \lambda P \lambda y \lambda s \lambda e \exists x [P\text{-}close(e) \land \text{CAUSE}(s)(e) \land P\text{-}closed(y, s) \land \text{Initiator}(x, e) \land \forall e [P\text{-}close(e) \iff \text{close}(e) \land \exists z [P(z) \land \text{WITH}/\text{BY}(z, e)]]] \]

(24) (adjectival) closed_{INC-Prt}:
\[ \lambda y \lambda s \exists e_k, x_k [P\text{-}close(e_k) \land \text{CAUSE}(s)(e_k) \land P\text{-}closed(y, s) \land \text{Initiator}(x_k, e_k) \land \forall e_k [P\text{-}close(e_k) \iff \text{close}(e_k) \land P = \text{tape} \land \text{WITH}(\text{tape}, e_k)]]] \]
This proposal fits the overall account outlined above, according to which event-related modifiers are adjoined to a phrase (the PrtP), and this whole phrase is the input to adjectivisation. We could see semantic incorporation, then, as a requirement on event-related modifiers in order for adjectivisation to take place.

5 Conclusion

In this paper, we have shown that, contra the standard assumption, by-phrases are possible and equally attested with both adjectival and verbal passives. Hence, both kinds of passives involve implicit external arguments. However, we have also seen that (event-related) by-phrases are qualitatively different in both types of passives in the types of complements we find in them. We proposed that in both, the external argument is bound at the point of participle formation, but that in adjectival passives, the external argument remains in the kind domain, because an event-related by-phrase modifies an event kind. In verbal passives, on the other hand, an event-related by-phrase can modify an event token, and this accounts for the differences in the kinds of complements we found in such phrases. Furthermore, we have shown that there are two different kinds of by-phrases with adjectival passives: Event-related ones modify an event kind, and state-related ones modify a state token. The complements of the latter show characteristics of event-related by-phrases with verbal passives and do not differ from state-related by-phrases with verbal passives either. Finally, we discussed the theoretical possibility that event-related modifiers have to semantically incorporate into the participle, before the participle is adjectivised.

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