Different *by*-phrases with adjectival and verbal passives: Evidence from Spanish corpus data[☆]

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Abstract

We present a Spanish corpus data study that shows that event-related *by*-phrases in the two types of passives are qualitatively different with respect to the types of complements they take: with verbal passives we find more strongly referential nominals (e.g. proper names, pronouns, demonstratives, regular definites), whereas with adjectival passives, we mainly find weakly or non-referential nominals (e.g. indefinites, bare nominals, weak and generic definites). These differences comply with an account, according to which the event in adjectival passives remains in the kind domain, restricting event modification to kind modification. Furthermore, the data show that there are no qualitative differences in the complements we find in state-related *by*-phrases of either passive, which have the same properties as those in event-related ones with verbal passives. We take this fact to support the claim that there are two different kinds of *by*-phrases with adjectival passives: event-related ones which modify an event kind (the VP/PrtP before adjectivisation), and state-related ones which modify a state token (the AP).
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1. Introduction

According to the traditional view, adjectival passives lack external arguments (cf. Levin and Rappaport, 1986; Kratzer, 1994, 2000, among others). Various arguments have been put forward in support of this view, such as lack of control into purpose clauses or the so-called disjoint reference effect. Kratzer (2000), for instance, discusses the German examples in (1) to make this point. Whereas the verbal passive in (1-a) only allows for a non-reflexive reading under which the children were washed by some implicit agent (disjoint reference) (cf. Baker et al., 1989), the adjectival passive in (1-b) also allows for a reflexive reading.

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(1) a.   Die   Kinder   sind gewaschen   worden.
          the   children are   washed   become.PART
          'The children have been washed.'
     b.   Die   Kinder   sind gewaschen.
          the   children are   washed
          'The chilren are washed.'

German is particularly suited for investigating the differences between adjectival and verbal passives because, unlike English, it formally distinguishes between the two types of passives: in verbal passives the past passive participle combines with *werden* 'become', in adjectival passives with *sein* 'be' cf. (1).

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. Under the assumption that external arguments are introduced by a functional verbal projection VoiceP, Kratzer (1994, 2000) argues that (German) adjectival participles lack Voice. Anagnostopoulou (2003), in turn, proposes that there is cross-linguistic variation in this respect: while German adjectival participles lack Voice, some Greek participles (resultant state participles[2] in *-menos*) contain Voice, based on the availability of all kinds of *by*-phrases and manner modifiers with the latter.

Recently, this traditional view has been challenged, and it has been argued that also adjectival participles in German (Alexiadou et al., 2014) and English (McIntyre, 2013; Bruening, 2014) can contain Voice. Alexiadou et al., for instance, show that German adjectival participles can involve transitivising causative morphology, which they take as morphological evidence for a Voice layer. All three papers argue that the lack of the disjoint reference effect (i.e. the possibility of a reflexive construal) is not found with all adjectival participles. As Alexiadou et al. note, the usual verbs to demonstrate that adjectival participles allow for a reflexive interpretation are naturally reflexive verbs, such as body dress verbs (e.g. *dress*) and grooming verbs (e.g. *comb, wash, shave*) (cf. Kemmer, 1993), i.e. verbs that tend to be used reflexively, even if they also have a transitive use. It is not found with adjectival participles of all kinds of transitive verbs though, which is what lack of Voice inside those participles would predict, and they provide the example in (2) to make this point.

(2) Der   Einbrecher war   getötet.
     the   burglar   was   killed
     'The burglar was killed.'   ≠ 'The burglar committed suicide.'

Further evidence for the presence of Voice in English (McIntyre, 2013; Bruening, 2014) and German (Alexiadou et al., 2014) adjectival participles constitutes the availability of event-related modifiers that rely on the presence of an agent or cause of the event, such as manner adverbs, instruments (PPs headed by *with*), and in particular *by*-phrases, the topic of this paper.

Unlike the literature on English adjectival passives, the literature on German adjectival passives has long acknowledged the fact that phrases headed by *von* 'by' (henceforth *by*-phrases) are not uncommon (e.g. Rapp, 1997; Kratzer, 2000; Schlücker, 2005; Maienborn, 2011; Gehrke, 2013).[3] Rapp, for instance, provides the examples in (3).

(3) a.   Das   Bild   ist   von einem Kind   angefertigt.
          the   picture is   by   a   child   produced
          'The picture is produced by a child.'
     b.   Das   Haus   ist   von Studenten bewohnt.
          the   house is   by   students   in-lived
          'The house is inhabited by students.'

Hence, we conclude from data like these that adjectival participles can contain an external argument. Under syntactic accounts that treat external arguments as always being introduced by Voice, then, such as the references cited above, we have to assume that Voice can be present also in adjectival participles, contra the standard assumption.

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[2] Kratzer (2000) makes a semantic distinction between target state and resultant state participles, based on their (in)compatibility with *immer noch* 'still'. In this paper we will abstract away from this distinction, but see Rapp (1996), Maienborn (2007a), Gese (2013), Gehrke (to appear) for different pragmatic takes on the distinction, and Gehrke (2012) and Müller-Reichau and Irmer (2014) for critical discussion of the *still*-modification diagnostics. The semantics we assume for adjectival participles (see section 2) is similar to Kratzer's (2000) semantics for target state participles, with the addition of event kinds to the ontology.

[3] Before McIntyre (2013) and Bruening (2014), most authors discussing adjectival passives in English acknowledged that sometimes *by*-phrases are possible but usually argued them away (cf., e.g. the discussion of *untouched by human hands* in Levin and Rappaport, 1986).

What is not directly accounted for by such syntactic accounts of adjectival participles is that the availability of *by*-phrases (as well as other event-related modifiers) is highly restricted. This has been repeatedly noted in the literature on German (4), and it also holds for English (cf. Alexiadou et al., 2014, and literature cited therein).

(4) a. Der Mülleimer   ist (*von meiner Nichte) geleert. (Rapp, 1996)
         the rubbish bin is   by   my   niece   emptied
         intended: 'The rubbish bin is emptied by my niece.'
     b. Die Tür ist (*von ihm) geöffnet. (Maienborn, 2011)
         the door is   by   him   opened
         intended: 'The door is opened by him.'

(5) shows that such *by*-phrases are perfectly fine with verbal passives.

(5) a. Der Mülleimer   wird   (von meiner Nichte) geleert.
         the rubbish bin becomes   by   my   niece   emptied
         'The rubbish bin is being emptied by my niece.'
     b. Die Tür wird   (von ihm) geöffnet.
         the door becomes   by   him   opened
         'The door is being opened by him.'

In this paper we provide empirical evidence from corpus data to show that also Spanish *by*-phrases with adjectival passives are qualitatively (as well as quantitatively) different from those with verbal passives.

There are at least two possible ways how the syntactic accounts above can respond to data like these. The first would be to still maintain that the syntactic structure of both verbal and adjectival participles contains Voice, and to propose that the restrictions on *by*-phrases with adjectival participles receive a semantic explanation and/or are due to the syntactic environment within which VoiceP is embedded. This is the route taken by Alexiadou et al. (2014), who amend a syntactic account of adjectival participles similar to McIntyre's (2013) and Bruening's (2014) with the kind of semantics that we will assume in this paper (see section 2). In particular, unlike verbal participles, the participles in adjectival passives do not get further embedded under verbal functional structure but are adjectivised instead. As we will argue in the following section, this leads to the event remaining in the kind domain and not getting instantiated. Restrictions on event modification, then, derive from restrictions on event kind modification.

Alternatively, one could make a distinction between two kinds of *by*-phrases on different theoretical grounds. Those introduced by Voice could be (syntactic) arguments whereas there are also *by*-phrases (those with adjectival passives) that are adjuncts modifying the VP (cf., e.g. Dowty, 2003, for similar discussion). Alternatively, or additionally, one could distinguish between semantic and syntactic arguments or between variables associated with semantic arguments of the verb qua its lexical semantics, and variables for nouns that also introduce discourse referents (as in, e.g. Farkas and de Swart, 2003). In either case, we would not assume that semantic arguments (of the verb) have to be introduced by Voice in syntax. Similarly, one could also follow 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). Thus, *by*-phrases with adjectival participles could also be licensed by the causative (or agentive) semantics associated with the underlying verb, rather than by Voice, in which case they could be treated as VP-modifiers (cf. Gehrke, 2013, for such a proposal for German).

In the remainder of the paper, we mainly focus on the *semantics* of adjectival participles, and we leave the general question of whether or not external arguments have to be introduced by Voice aside, since nothing in this paper hinges on the precise syntactic account of external arguments. It is important to note, however, that even if the purely syntactic accounts are on the right track in positing VoiceP inside adjectival participles, we still need to amend these proposals with a semantics that accounts for the restrictions on the availability of *by*-phrases (and other event-related modifiers) with adjectival participles, and we refer the interested reader to Alexiadou et al. (2014) for one such proposal.

The paper is structured as follows. Section 2 presents the theoretical point of departure, based on the observation for German that event-related *by*-phrases with verbal and adjectival passives differ in the type of complements they take. Section 3 introduces the Spanish corpus and the methods used to extract and analyse *by*-phrases with verbal and adjectival passives. Section 4 presents the general results for all kinds of verbal predicates, whereas section 5 looks at the results for state- vs. event-related *by*-phrases separately. Finally, section 6 concludes.

2. The theoretical point of departure

To account for the restrictions on event-related modification with German adjectival participles, Gehrke (2011, and subsequent work) proposes that while verbal passives can involve reference to an event token, the event underlying adjectival passives never gets instantiated but remains in the kind domain, as a result of the adjectivisation of the participle. Restrictions on event-related modification are argued to follow from general restrictions on kind modification. In the following, we will shortly spell out the underlying assumptions of this account; for more details the interested reader is referred to the works cited.[4]

2.1. German adjectival passives and modification

Gehrke (2011, and subsequent work) extends the notion of kinds, introduced for the nominal domain by Carlson (1977) and further developed since (e.g. Zamparelli, 1995; Chierchia, 1998; Dayal, 2004), to the verbal domain. For the nominal domain, Zamparelli (1995) has argued that nominal predicates start out as predicates of kinds and get instantiated (or realised) to enable reference to an entity token when embedded under Num(ber). In analogy, Gehrke (to appear) proposes that verbal predicates enter the derivation as predicates of event kinds; the event gets instantiated only when such verbal structure is embedded under further functional structure, such as Tense/Aspect; at this level, we get reference to an event token, i.e. an event that has taken, is taking, or is going to take place in the actual world. Given that in adjectival passives, verbal predicates are not directly embedded under Tense/Aspect but instead under an adjectivising head (AP in her proposal), the underlying event associated with the verb does not get instantiated but remains in the kind domain (as a result of the category change).

Under this account, an adjectival passive construction refers to the instantiation of a consequent state kind of an event kind.[5] For example, the semantics proposed for (6-a) is given in (6-b) (ignoring the contribution of Tense).[6]

(6) a. Die Tür ist geschlossen.
     the door is closed
  b. $\exists s_0, s_k, e_k, x_k[\textbf{close}(e_k) \land \text{BECOME}(s_k)(e_k) \land R(s_0, s_k) \land \textbf{closed}(\text{THE DOOR}, s_0) \land \text{INITIATOR}(x_k, e_k)]$

The consequent (i.e. result or inchoative) state associated with the verbal predicate, in turn, is embedded under Tense/Aspect and thus (can) get instantiated at some later stage, in the same way as with states associated with adjectives more generally.

Restrictions on event-related modification are argued to follow from general restrictions on kind modification. For example, given that kinds are not instantiated they lack spatio-temporal location. From this it follows that the event cannot be modified by spatial or temporal modifiers, as evidenced, for instance, by (7).[7]

(7) a. *Der Computer ist vor drei Tagen repariert.   (von Stechow, 1998)
     the computer is before three days repaired
     intended: 'The computer is repaired three days ago.'

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[4] The kind approach to adjectival passives is also taken up by Gese (2011), who provides additional experimental support that we are dealing with event kinds, as well as by Maienborn and Geldermann (2013) and Maienborn et al. (2013), with the latter connecting this approach to the theory of tropes (Moltmann, 2006, and subsequent work).

Further and independent empirical support for positing event and state kinds in the ontology is found in Landman and Morzycki (2003), Sailer (2010), Anderson and Morzycki (to appear), among others (see Gehrke, 2011, and subsequent work, for further references and data).

For reasons of space, we cannot go into a comparison of the assumed proposal here with previous semantic accounts, such as Rapp (1997), Kratzer (2000), Maienborn (2007a), or others.

[5] Consequent state here is used as a cover term for result states (if the input is an accomplishment or an achievement) as well as inchoative states (if the input is a state) (see also footnote 10). Hence the term *event* here should be understood in a broader, Neo-Davidsonian way to also include states. See Gehrke (to appear) for further discussion and also for motivation to use BECOME in the formula in (6).

[6] The subscripts $_0$ and $_k$ respectively specify whether the entity in question (including states s and events e) refers to a token or a kind. R is Carlson's (1977) Realisation relation.

[7] This ban is on spatial PPs that locate the event itself, whereas PPs that form part of the event kind description (e.g. specifying a particular manner) are acceptable, such as those in (i).

(i) Die Pizza ist in einem Steinofen gebacken.
   the pizza is in a stone oven baked

Obviously, this example does not involve an event taking place inside a stone oven, but rather this PP specifies the manner of preparation. See also Maienborn (2003) for the distinction between VP-internal spatial modifiers of this type and VP-external ones.

b.   *Das Kind war im   Badezimmer gekämmt.
     the child was in the bathroom   combed
     intended: 'The child was combed in the bathroom.'

NPs naming participants in the event, in turn, such as those in event-related *by-* or *with-*phrases, cannot name actual event participants of an event particular (an event token), given that there is no event token to begin with. Gehrke (to appear) proposes that such phrases have to pseudo-incorporate into the participle before adjectivisation can take place.[8]

This proposal is motivated by the fact that the nominals in such PPs behave like weakly or non-referential nominals and display semantic properties of (pseudo-)incorporated nominals (cf. Dayal, 2011, and references cited therein). In particular, pseudo-incorporated nouns obligatorily take narrow scope with respect to quantificational elements in the clause, do not introduce discourse referents (e.g. they do not support pronominal anaphora), and cannot be modified by (ordinary restrictive token) modifiers.[9] That these properties hold for nominals in event-related PP modifiers is illustrated in (8).

(8) a.   Alle Briefe sind mit einem Bleistift geschrieben.
          all letters are with a   pencil   written
          = 'All letters are written with a pencil.' (possibly more than one pencil)
          ≠ 'There is a particular pencil that all letters are written with.'
     b.   Die Zeichnung ist von [einem Kind]$_i$ angefertigt. *Es$_i$ hat rote Haare.
          the drawing   is by a   child produced   it has red hairs
          intended: 'The drawing is produced by [a child]$_i$. (S)he$_i$ has red hair.'
     b.   *Die Zeichnung ist von einem blonden Kind angefertigt.
          the drawing   is by a   blond   child produced
          intended: 'The drawing is produced by a blond child.'

This account is further supported by the higher propensity for weakly or non-referential noun phrases in such PPs, such as indefinite and bare nominals (see also Schlücker, 2005), as opposed to fully referential ones. For example, changing the determiner to a (strong) definite one, like the demonstrative in (9), leads to ungrammaticality.

(9) *Der Brief ist mit diesem Bleistift geschrieben.
     the letter is with this   pencil   written
     intended: 'The letter is written with this pencil.'

None of these restrictions are found with event-related modifiers of the respective verbal participles (10).

(10) a.   Alle Briefe wurden mit einem Bleistift geschrieben.
          all letters became with a   pencil   written
          (i)   'All letters were written with a pencil.'
                (possibly more than one pencil)
          (ii) 'There was a particular pencil that all letters were written with.'
     b.   Die Zeichnung wurde von [einem Kind]$_i$ angefertigt. Es$_i$ hatte rote Haare.
          the drawing   became by a   child produced   it had   red hairs
          'The drawing has been produced by [a child]$_i$. (S)he$_i$ had red hair.'
     c.   Die Zeichnung wurde von einem blonden Kind angefertigt.
          the drawing   became by a   blond   child produced
          'The drawing has been produced by a blond child.'

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[8] A potentially similar idea underlies the proposal of Maienborn (2007a, 2011), Maienborn and Geldermann (2013), according to which event-related modifiers of adjectival participles are not regular VP modifiers but are 'integrated' into the VP. The term 'integration' is to be understood in terms of Jacobs (1993, 1999) as a special syntactic relation between a head (here: a verb) and its sister constituent (here: a PP; in Jacobs: a VP-internal argument).

[9] The restriction is on ordinary restrictive token modification; kind modification (subtyping modification), on the other hand (e.g. (i)), as well as non-restrictive relative clauses are possible (see literature cited for the distinction between kind and token modification with weakly referential nominals in general, as well as with nominals in event-related *by-*phrases of adjectival passives in particular).

(i) Der Brief ist mit roter Tinte geschrieben.
     the letter is with red   ink   written

d. Der Brief wurde mit diesem Bleistift geschrieben.
the letter became with this pencil written
'The letter has been written with this pencil.'

Building on Rapp (1996) and Schlücker (2005), Gehrke (2013) discerns a second type of *by*-phrase that can appear with adjectival passives, namely when the underlying predicate is stative and in which the *by*-phrase modifies a state, commonly naming the cause of a state. Such state-related *by*-phrases differ from event-related ones in prosody (they are not prosodically integrated into the participle but receive separate stress), available word order variation (they can appear before or after the participle in verb-end environments, whereas event-related *by*-phrases have to appear before it), and compatibility with *un*-prefixation (see literature cited for examples). Gehrke furthermore shows that the complements of state-related *by*-phrases behave on a par with those with verbal passives: they allow wide scope (11-a), introduce discourse referents (11-b), can be modified by restrictive token modifiers, e.g. restrictive relative clauses (11-c), and can be strongly referential (11-d).

(11) a. Alle Kinder sind von einer Melodie beeindruckt.
all children are by a melody impressed
(i) 'All children were impressed by a melody.' (possibly more than one melody)
(ii) 'There was a particular melody that all children were impressed by.'
b. Er ist von [einer Melodie]$_1$ beeindruckt. Er hat sie$_1$ gestern im Radio gehört.
he is by a melody impressed he has her yesterday in_the radio heard
'He is impressed by a melody. He heard it yesterday on the radio.'
c. Er ist von einer Melodie beeindruckt, die er gestern im Radio gehört hat.
he is by a melody impressed which he yesterday in_the radio heard has
'He is impressed by a melody that he heard on the radio yesterday.'
d. Er ist von dieser Melodie beeindruckt.
he is by this melody impressed
'He is impressed by this melody.'

Obviously, adjectival passives involving stative inputs such as these will get a slightly different semantic representation from the one proposed for eventive inputs in (6), but the general idea is still the same: such adjectival passives refer to the instantiation of a consequent state kind (in this case an inchoative state kind, cf. footnote 5). This state kind is opposed to another state kind, which expresses some opposite state (e.g. *impressed* vs. *unimpressed*). Thus, there is a similar opposition between states that we find with eventive predicates (e.g. *closed* vs. *non-closed* = *open(ed)*).[10]

Following Rapp (1996), who in turn follows Kratzer (1994, 2000) in assuming that event-related modifiers of adjectival participles apply before adjectivisation and thus adjectivisation involves phrases, Gehrke (2013) proposes the following, somewhat simplified syntactic representations, ignoring PrtP-internal structure and externalisation of the internal argument (on the latter see McIntyre, 2013; Bruening, 2014).

(12) a. $[_{AP} [_{A'} [_V$ geschlossen$]$ ø $]]$
b. $[_{AP} [_{VP} [_{V'} [_{PP}$ von einem Kind $]$ angefertigt $]]$ ø $]$
c. $[_{AP} [_{PP}$ von der Musik $] [_{A'} [_V t_1]$ (un)beeindruckt$_1$-ø $]]$

The tree in (12-a) represents Kratzer's (2000) lexical adjectivisation, which involves an adjectival participle without additional event-related modification, e.g. *geschlossen* 'closed'. (12-b) represents the phrasal case involving modifiers of the underlying event kind. The input is the VP and adjoined to it a VP-level modifier, e.g. *von einem Kind angefertigt* 'produced by a child'. This captures the fact that the PP is prosodically integrated into the participle and cannot appear after it. Furthermore, *un*-prefixation is not possible, since only lexical adjectivisation is compatible with *un*-. Finally, an adjectival passive with a *by*-phrase modifying a state token, such as *von der Musik (un)beeindruckt* '(un)impressed by the music', is represented in (12-c). This accounts for the fact that state-related *by*-phrases are not prosodically integrated into

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[10] Not all stative predicates are good inputs to adjectival passives (see Gehrke, to appear, and literature cited therein for further discussion) (see also footnote 5). In particular only those that lend themselves easily to an inchoative state interpretation are good inputs, which are mainly object experiencer verbs. Furthermore, so-called extent verbs which can have an event and a (stative) extent reading allow adjectival passives under both readings. We will come back to such cases in section 5.3.

Note that McIntyre (2013) discusses a type of non-resultative adjectival participle, which he labels 'situation-in-progress-participle'; judging from his examples, such participles subsume the participles derived from stative predicates or stative uses of event predicates that we are concerned with here.

the participle and that they can appear before or after the participle. In addition, the participle itself, which is the output of lexical adjectivisation, is compatible with *un-*.

Under the current proposal, then, the crucial difference between event-related and state-related modifiers with adjectival participles is that the former modify an event kind, whereas the latter (can) involve state token modification, given that it is the state that gets temporally located when the AP (the adjectivised participle) is embedded under Tense. Event-related modifiers have to apply before adjectivisation takes place, since they need to access the event, whereas state-related modifiers apply after adjectivisation and relate to (modify) the state denoted by the AP. Alternatively, we could follow Rapp (1997) directly in assuming that they are arguments of the AP, inherited from the underlying verb. In either case, they would not modify the VP. Finally, Gehrke (to appear) proposes that in order for phrasal adjectivisation of participles containing event-related modifiers to be possible such modifiers have to pseudo-incorporate into the participle, which results in the ban on strongly referential NPs in such modifiers. State-related modifiers, on the other hand, do not have to pseudo-incorporate and thus strongly referential noun phrases can be found in such modifiers.

2.2. Summary and motivation of the corpus study

In sum, event-related *by*-phrases with adjectival participles in German differ from those with verbal participles mainly in the referential status of their complements: they are non-referential (or at most weakly referential). So far we have only illustrated this with the occurrence of indefinite NPs and the ban of demonstrative NPs in such phrases, but this seems to hold more generally for other kinds of nominals as well: with adjectival passives, bare (singular and plural) nominals and (in)definite noun phrases with a generic or weak interpretation are acceptable, but strongly referential noun phrases, such as regular definites, demonstratives, pronouns, and proper names, are not. With verbal passives, on the other hand, strongly referential noun phrases in event-related modifiers are not a problem. Finally, the complements of state-related *by*-phrases with both adjectival and verbal passives seem to behave on a par with (state- and event-related) *by*-phrases of verbal passives in being strongly referential.

To further substantiate the impression that the complements are indeed qualitatively different, we conducted a corpus study that investigates the kinds of complements found in such *by*-phrases. Although the previous theoretical considerations were mainly based on German, our corpus study will be based on Spanish, for which our first impression is that it behaves like German in all relevant respects.[11] Like German, Spanish makes a formal distinction between the two types of passives, as it combines a past passive participle with *estar* in adjectival passives, and with *ser* in verbal passives (cf. Bosque, 1990, 1999; Marín, 2004); we will gloss these as 'be.LOC' and 'be', respectively. Furthermore, (13) shows that the complements of event-related *by*-phrases with Spanish verbal passives can have wide scope, introduce discourse referents, be modified by common intersective modification, and involve strong determiners, whereas those with adjectival passives cannot (14), just like the German examples discussed above.

(13) a. Todos los cuadros fueron pintados por un niño.
          all   the pictures were painted by a child
          (i) 'All the paintings were painted by a child.' (>1 child possible)
          (ii) 'There was a particular child that painted all the paintings.'
     b. El cuadro fue pintado por [un niño]$_1$. *pro*$_1$ Era pelirrojo.
          the picture was painted by a child   was red-haired
          'The picture was painted by a child. He had red hair.'
     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.'
     d. El cuadro fue pintado por este niño.
          the picture was painted by this child
          'The drawing was painted by this child.'

(14) a. Todos los cuadros estaban pintados por un niño.
          all   the pictures were.LOC painted by a child
          'All the paintings were painted by a child.' (>1 child possible)
          ≠ 'There was a particular child that painted all the painting.'

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[11] One reason why we did not choose German was that the word order in German is much freer than in Spanish and therefore it is more difficult to control for the precise data to be extracted without including too many irrelevant cases or excluding too many relevant ones.

b. El   cuadro estaba   pintado por [un niño]$_1$. *pro_1 Era pelirrojo.
    the   picture was.LOC   painted by   a   child   was red-haired
    intended: 'The picture was painted by a child. He had red hair.'

c. *El   cuadro estaba   pintado por un niño pelirrojo.
    the   picture was.LOC   painted by   a   child red-haired
    intended: 'The drawing was painted by a red-haired child.'

d. *El   cuadro estaba   pintado por este niño.
    the   picture was.LOC   painted by   this child
    intended: 'The drawing was painted by this child.'

Finally, when the underlying predicate is stative we get *by*-phrases with a rather specific character, in analogy to the German data in (11); cf. (15).

(15) a. Todos los niños   estaban impresionados por una melodía.
        all   the children were.LOC impressed   by   a   melody
        (i)   'All the children were impressed by a melody.' (>1 melody possible)
        (ii) 'There was a particular melody that all the children were impressed by.'

b. Estaba   impresionada por [una melodía]$_1$. La orquesta la$_1$ tocó   en el auditorio.
    was.LOC impressed   by   a   melody   the orchestra it   played in the auditorium
    'She was impressed by a melody. The orchestra played it in the auditorium.'

c. Estaba   impresionada por una melodía que tocó   la orquesta en el auditorio.
    was.LOC impressed   by   a   melody   that played the orchestra in the auditorium
    'She was impressed by a melody that the orchestra played in the auditorium.'

d. Estaba   impresionada por esta melodía.
    was.LOC impressed   by   this melody
    'She was impressed by this melody.'

2.3. Our expectations

Our expectations were as follows. With event-related *by*-phrases of adjectival passives, we expected to mainly find weak (in)definite and bare nominals. These are nominals that have been analysed as not denoting token entities (of type e_0), but rather either properties (of type $\langle e, t \rangle$) or kinds (of type e_k). For example, the property analysis has been put forward for (narrow scope) indefinites (e.g. van Geenhoven, 1998), bare singular nouns (e.g. Dayal, 2011; Espinal and McNally, 2011)[12] and in particular Spanish bare plurals (McNally, 2004), as well as for weak definites (Schwarz, to appear).[13] Others have proposed a kind account of bare plurals (at least since Carlson, 1977) (see also Chierchia, 1998; Dayal, 2004) and weak definites (Aguilar Guevara and Zwarts, 2011; Aguilar Guevara, 2014). What these nominals have in common is that they lend themselves more easily to a generic interpretation and/or are weakly or non-referential and can be (and most often have been) analysed in terms of (pseudo-)incorporation (see Gehrke, to appear, for further discussion). Throughout, we will use the descriptive label 'generic' for this group of nominals. On the other hand, we expected to find no occurrences of strongly referential nominals in event-related *by*-phrases of adjectival passives. Such nominals are standardly analysed as denoting an entity, here a token entity, which is a particular entity in the discourse. These nominals include strong definites, proper names, personal pronouns, possessives and demonstratives, which we will henceforth descriptively label 'specific'.

Finally, with *by*-phrases of verbal passives, we expected to find many instances of strongly referential nominals. Since, 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 most important difference we expect to find is with respect to strongly referential nominals with verbal and adjectival passives. Finally, we expected no difference between state-related *by*-phrases of adjectival and verbal passives. Let us then turn to the data.

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[12] In particular, Farkas and de Swart (2003) and de Swart and Zwarts (2009) discuss the lack of discourse reference with such nominals. See also Zwarts (2009) for an overview of different kinds of constructions that employ bare singulars, as well as Le Bruyn et al. (2011) for bare nominals in prepositional phrases.

[13] To be more precise, Schwarz analyses weak definites as regular definites that are shifted into properties to undergo (pseudo-)incorporation into the verb. This incorporation creates an event subkind under his account, which is precisely what we assume event-related modification with adjectival participles is doing. A similar account of weak definites based on event kinds, is proposed by Carlson et al. (2014), who assume that the noun and the verb form a unit (as in pseudo-incorporation) and the definite determiner marks the familiarity of the activity denoted by the VP (the verb-noun unit).

3. The corpus data

The data for this study was extracted from a corpus of Spanish from the 20th century, which contains more than 8 million words and comprises a wide variety of genres (both fiction and non-fiction). The documents forming this corpus come from the *Project Gutenberg* (2.5 million words),[14] as well as the *Lexesp corpus* (5.5 million words) (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; texts from the *Project Gutenberg* were automatically annotated with linguistic information by Sánchez Marco (2012) using the open-source language analyser FreeLing (Padró et al., 2010; Padró and Stanilovsky, 2012).[15] The *Lexesp corpus* consists of texts from the last quarter of the 20th century; texts from the *Project Gutenberg* are from the beginning of the 20th century. Originally, our corpus was compiled by combining the *Lexesp corpus* with the texts from the *Project Gutenberg*, as part of a diachronic corpus of Spanish containing texts from the 12th to the 20th century (Sánchez Marco, 2012). Appendix A contains the complete list of texts from the *Project Gutenberg* forming part of this corpus.

Prior to the analysis of the corpus data, 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 were obtained from this corpus. The frequency counts were obtained using the *IMS Open Corpus Workbench*[16] and analysed with the open-source statistical software R (R-Development-Core-Team, 2010). In the queries we allowed a number and a variety of words to appear between *ser/estar* and the participle, and also different word orders of both elements. In order to obtain accurate cases of *ser/estar* + PP + *by*-phrase, the participle had to appear directly left to the *by*-phrase, but we also allowed for some (controlled) intervening material (e.g. adverbs, cf. (40-a)).

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 a participle but in fact was of a different category. In addition, a potential problem for the automatic extraction of phrases headed by *por* is that Spanish *por* has more uses than English *by*. This is evident, for example, from the translations in (16) with a preposition introducing a reason ('for'), rather than an agent or cause of an event or state (an initiator).

(16)   Eric fue   detenido por robo.
        Eric was   arrested POR robbery
        'Eric was arrested for robbery.'

As a test to see whether such *by*-phrases introduce external arguments we checked whether their complements could appear as subjects in the active counterparts. If they could, we counted them in as *by*-phrases. The example in (16), however, does not have such an active counterpart (17).

(17)   *Robo   arrestó   Eric.
        robbery   arrested Eric

Thus, we manually excluded such cases to get only those *por*-phrases that correspond to *by*-phrases in English, i.e. phrases that name the initiator (cause or agent) of an event or state.

This correction 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 automatically annotated corpus. On the other hand, for the *Project Gutenberg* part of the corpus, which was enriched with linguistic information using FreeLing for the purposes of this work, we expect to have an accuracy in the tagging closer to state-of-the-art taggers for modern language varieties, that is over 97%, which means that approximately 3 in 100 words are assigned an incorrect morphological category (see Collins, 2002; Toutanova et al., 2003; Spoustová et al., 2009; Sogaard, 2009). Sánchez Marco et al. (2011) report an accuracy for the FreeLing Spanish tagger of 97.6% for the main part-of-speech and 94% for the whole tag, containing more morphological information (e.g. gender, number, tense, etc.). However, it is important to mention here that this evaluation was performed on a different corpus so the results are not fully comparable.

Let us then turn to the presentation and discussion of the findings, which proceed in two steps. In section 4, we consider all instances of participial constructions formed with *ser* and *estar* that appear with *by*-phrases. In section 5, we analyse

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

	Estar + PP	*Ser* + PP	*p*-Value
Total	3574	6923	
With *by*-phrases	293	748	
With *by*-phrases (%)	8.2%	10.8%	<.001***
Pronouns (%)	3.4%	8.2%	<.01**
Proper names (%)	4.1% (6.1%)	6.8% (10.7%)	<.01**
Possessive determiners (%)	3.4%	4.1%	.7235
Demonstrative determiners (%)	1%	0.9%	1
Definite determiners (%)	43.3%	54.3%	<.01**
Indefinite determiners (%)	17.4%	9.5%	<.001***
Numerals (%)	1.7%	1.1%	.5345
Bare singulars (%)	1.4%	2.5%	.3486
Bare plurals (%)	20.8%	9.6%	<.001***
Other quantificational determiners (%)	3.4%	2.9%	.692

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.

4. Study 1: Spanish *by*-phrases with adjectival and verbal passives

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.

Both types of passives occur with *by*-phrases, but we find less *by*-phrases with adjectival passives (8.2%; *N* = 293/ 3574) than with verbal passives (10.8%; *N* = 748/6923). According to a Pearson's chi-square goodness-of-fit test, this difference is highly significant at a 99.9% confidence level (χ^2 = 17.6345, 1 d.f., *p* < .001). There are some differences with some types of *by*-phrase complements. These differences are highly significant (χ^2 test, 1 d.f., *p* < .001) for indefinite determiners and bare plurals, which occur more often with adjectival passives, and significant (χ^2 test, 1 d.f., *p* < .01) for pronouns, (bare and non-bare) proper names[17] and definite determiners, which occur more often with verbal 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 possessives, demonstratives, interrogatives, numerals, bare singulars, and other quantificational determiners[18] (according to Fisher's exact test[19]).

4.1. Discussion

The fact that *by*-phrases occur with both types of passives, also in Spanish, goes against the traditional assumption that *by*-phrases cannot occur with adjectival passives. Thus, Spanish patterns with both German (as generally acknowledged in the literature on German, see section 2), and English (cf. McIntyre, 2013; Bruening, 2014), as outlined in the introduction. However, we also see that there are quantitative differences (more *by*-phrases with verbal than with adjectival passives) as well as some qualitative differences, along the lines of what we have shown in section 2. In particular, there we observed that the complements in *by*-phrases with (German) adjectival participles cannot be strongly referential; we took this as evidence for the semantic analysis of such participles as involving event kinds rather than event tokens, and of event-related modifiers with such participles as pseudo-incorporated. The coarse-grained analysis presented in Table 1 only confirms this as a trend, though, not as a general ban on strongly referential nominals, and for some determiners no trend at all was found.

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[17] For proper names, the number in parentheses indicates the percentage of (non-bare) proper names with determiners, whereas the number without parentheses is the percentage of bare proper names. Non-bare proper names in Spanish mostly refer to names of companies or organisations, e.g. *la Caja de Ahorros de Asturias* 'the Savings Bank of Asturias'. The sum of both percentages gives the total percentage of proper names with respect to the total number of *by*-phrases. This also applies to the tables in later sections.

[18] The category of other quantificational determiners includes *algún* 'some', *ambos* 'both', *cualquier* 'any' (free choice), *muchos* 'many', *ningún* 'no', and *todo* 'all', in all relevant gender and number forms.

[19] Fisher's exact test is used in situations where the samples are too small to allow the normal approximation underlying the chi-squared test (Agresti, 2002; Baroni and Evert, 2009).

Indicative of this trend is that adjectival participles appear significantly more often with indefinite noun phrases (18-a) and with bare plurals (18-b).

(18) a. Las   gentes   que viven la   historia, elementales y   duras,   están   habitadas por un
          the   peoples   that live   the   history   simple.PL   and hard.PL are.LOC   inhabited   by   a
          gran   ardor de vivir...
          great ardor of live.INF
          'People that live history, the simple and hard ones, are filled with a great ardor for life...'
      b. El   mundo está   gobernado por mujeres... a   excepción del   dinero.
          the   world is.LOC   governed   by   women   to exception of_the   money
          'The world is governed by women... with the exception of money.'

Verbal participles, in turn, combine more often with definite noun phrases (19-a) and proper names (19-b).

(19) a. Ambas   cosas   fueron impedidas por los porteros y   el   caballero que les   auxiliaba.
          both   things were   impeded   by   the doormen   and the gentleman that them   helped
          'Both things were impeded by the doormen and the gentleman that helped them.'
      b. [Semejante leyenda] Fue recogida por James Swan en 1874 ...
          such   legend   was compiled by   James Swan in 1874
          'Such legend was compiled by James Swan in 1874.'

Nevertheless, there are surprisingly many instances of definite noun phrases with adjectival participles, as well as some instances of proper names. We will come back to why this might be the case in sections 4.3 and 4.5, respectively.

Furthermore, contra our expectations, we did not find a significant difference in the number of demonstrative and possessive determiners; both are typically assumed to be definite, and thus we would expect to find them more frequently (or even exclusively) with verbal passives. However, the number of demonstratives in the corpus is (statistically) the same with both kinds of passives, and even though the possessives with verbal passives outnumber those appearing with adjectival passives, this difference is not statistically significant. Furthermore, there are no significant differences with bare singulars, which (somewhat unexpectedly) appear (insignificantly) more often with verbal passives. Since in principle all kinds of NPs can appear with verbal passives, we will not be interested in these cases however.

Finally, there are no significant differences between adjectival and verbal passives in whether or not the complements of *by*-phrases contain numerals or other quantificational determiners. Numerals intuitively specify the cardinality of a group of entities, and thus the respective nominals are expected to pattern with strongly referential ones. Hence, the fact that there are no differences is not expected either. What exactly we would expect for other quantificational determiners depends on the precise semantics attributed to each determiner. Given that an investigation of the semantics of each and every determiner would go beyond the scope of this paper, we will leave other determiners aside for now.

At this point, we could conclude that the additional semantic analysis of adjectival participles is too strong and that syntactic analyses which treat adjectival and verbal participles on a par suffice completely. However, we have not yet taken into account the distinction between stative and eventive predicates, and it will turn out in section 5 that this distinction is crucial and supports the claim that we need an additional semantic story. But before exploring this, we will present here some representative examples for each category, as well as a measure to quantify the difference between *by*-phrases combining with both types of passives.

4.2. Some unexpected examples

In this section, we see some representative examples in which adjectival participles unexpectedly combine with *by*-phrases headed by a demonstrative (20-a) and a possessive (20-b).

(20) a. Rufina estaba   aterrada   por esta situación.
          Rufina was.LOC   terrified by   this situation
          'Rufina was terrified by this situation.'
      b. ... una casa   vecina al   Campo de Marte, cuyo   quinto piso estaba   ocupado por
              a   house close   to the   Camp   of Mars   whose fifth   floor was.LOC   inhabited by
          su   esposa y   sus hijos
          his wife   and his sons
          '... a house close to the Camp of Mars, the fifth floor of which was inhabited by his wife and his sons'

Crucially, both of these examples involve stative predicates: in (20-a) we have an object experiencer verb *aterrar* 'to terrify', which we treat as a (possibly inchoative) state (see section 5), and in (20-b) we have *ocupar* 'to inhabit'.

(21), in turn, presents some representative examples of verbal participles with *by*-phrases headed by a demonstrative and a numeral (21-a), and by a possessive (21-b).

(21) a. Esta   gestión   conjunta ya   fue denunciada por este periódico   hace casi   un
          this   management joint   already was reported   by this newspaper ago almost one
          año, y   luego [...] por ocho periodistas.
          year and then   by eight journalists
          'This joint management was already reported by this newspaper almost a year ago, and then by eight
          journalists.'
      b. Uno de ellos, Mamerto Landaburo, fue asesinado   por sus hombres...
          one of them Mamerto Landaburo was assassinated by his men
          'One of them, Mamerto Landaburo, was assassinated by his men.'

Crucially, these examples involve eventive predicates as inputs to the verbal participles, namely *denunciar* 'to report' in (21-a) and *asesinar* 'to assassinate' in (21-b). Replacing the verbal passive construction (with *ser*) with an adjectival passive construction (with *estar*) renders these examples ungrammatical (22).

(22) a. *Esta gestión   conjunta estaba denunciada {por este periódico   / por ocho periodistas}.
           this management joint   was.LOC reported   by this newspaper   by eight journalists
      b. *Mamerto Landaburo estaba asesinado   por sus hombres.
           Mamerto Landaburo was.LOC assassinated by his men

In the following, we will take a closer look at definite and indefinite noun phrases.

4.3. Definites and indefinites

Recall that we found a high number of definite noun phrases in *by*-phrases with both adjectival and verbal participles (43.6% vs. 54.7%), which at first sight – from a Germanic perspective at least – might be surprising, especially for adjectival participles. However, in Romance languages the definite article is used for both (regular) definiteness and kind reference (see Chierchia, 1998; Dayal, 2004, and literature cited therein), and in particular in situations, where languages like English and German use bare nominals (bare plurals for kinds, bare singulars for abstract nouns).[20] In addition, all three languages make use of so-called weak definites, which have been analysed as kind-denoting (Aguilar Guevara and Zwarts, 2011; Aguilar Guevara, 2014) or as pseudo-incorporated properties (Schwarz, to appear; Carlson et al., 2014) (cf. footnote 13). Under either analysis, we expect weak definites to be possible in *by*-phrases with adjectival participles. Finally, all three languages use definite determiners for entities that are unique qua world knowledge (e.g. *the sun, the moon*), and never occur without such a determiner.

Let us then have a closer look at the definite nominal complements of *by*-phrases we found. There are examples of *by*-phrases with definite determiners that appear with adjectival passives, which involve generic noun phrases (23).

(23) a. [...] nuestra vida está regida   por los símbolos.
               our   life is.LOC governed by the symbols
          'Our life is governed by symbols.'
      b. A mí los jugadores de este Atlético de Madrid me caen bien: están   perseguidos
          to me the players   of this Atlético of Madrid me fall   well are.LOC.3PL pursued
          por la   desgracia [...]
          by the disgrace
          'I really like the players of this Atlético Madrid: They are pursued by disgrace.'

One indication that these are generic or kind-referring noun phrases is the fact that they are translated into English by bare plurals (in the case of count nouns) or bare singulars (in the case of mass nouns, including abstract nouns).

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[20] See also McNally (2004) for a discussion of the differences between English and Spanish in the use of bare plurals, and for arguments why Spanish bare plurals should be treated as property-denoting, whereas English bare plurals can be kind-denoting.

Other definite nominals in *by*-phrases with adjectival passives, in turn, can be identified as weak definites. These are definites that do not behave like regular definite noun phrases, since they lack uniqueness and do not refer to a particular entity in the discourse, as in e.g. *read the newspaper, go to the store* (cf. Carlson and Sussman, 2005; Carlson et al., 2014; Aguilar Guevara and Zwarts, 2011; Aguilar Guevara, 2014). Definite noun phrases with a weak definite interpretation lose this interpretation under particular circumstances, for example when they are modified by token (but not type) modifiers (24-a), when the number is changed (24-b), or when they are embedded under a different verb or preposition (24-c) (# indicates the loss of a weak reading).

(24) a.   Mary went to the {#gigantic / grocery} store.
      b.   #Mary went to the stores.
      c.   #Mary meandered to the store.

A further case that shares some properties with weak definites are noun phrases referring to entities that are unique in all contexts, quasi by general world knowledge, such as *the moon, the sun, the chancellor* (cf. Cieschinger and Bosch, 2011). Given that these singular entities are unique in all contexts, they always appear as singular definites and thus cannot be put in the plural either (similar to the weak definites in (24), which lose the weak definite interpretation in this case). One such example from our corpus is given in (25).

(25)   Otras   estaban   quemadas   por el   sol
        others   were.LOC   burnt   by   the   sun
        'Others were sunburnt.'

The fact that this expression can be translated into English by a participle that incorporates the nominal 'sun' (*sunburnt*) further illustrates that we are not dealing with a regular definite in this case.

To manually check whether a given definite in a particular context is a regular definite that introduces a discourse referent and denotes a token entity (a participant in an event particular), or a weak or generic definite (and is thus kind- or property-denoting), we added adjectival modification and/or changed the number. As already outlined in previous examples, changing the number on weak definites from singular to plural renders the weak interpretation impossible, which leads to a strong definite interpretation in the case of definites of the type in (24) (cf. (24-b)), and to ungrammaticality or anomaly in the case of entities that are unique qua world knowledge (e.g. in *the suns, the moons*). Similar results obtain if we add token modification (cf. (24-a)). Furthermore, changing the number on generic definite plurals to singular has as an effect that such a singular noun phrase is not interpreted as generic anymore, whereas with abstract nominals the change from singular to plural should result in ungrammaticality (e.g. in examples of the type in (23)). In either case, we expect the adjectival passive construction to become ungrammatical under such changes, given our assumption that strongly referential noun phrases are disallowed in *by*-phrases with adjectival participles.

(26) illustrates that such changes with the here discussed Spanish examples that contain definite noun phrases in *by*-phrases with adjectival participles lead to ungrammaticality.

(26) a.   *Nuestra vida   está   regida   por el   símbolo.
             our   life   is.LOC   governed   by   the   symbol
      b.   *Los jugadores están   perseguidos por las desgracias.
             the   players   are.LOC.3PL   pursued   by   the   disgraces
      c.   *Otras   estaban   quemadas   por los soles.
             others   were.LOC burnt   by   the   suns

Hence, if such changes rendered the respective example ungrammatical, we decided to count such definites as non-regular definites, which we will descriptively label 'non-referential definite NPs' in the following. The results of the analysis of definites in *by*-phrases are summarised in Table 2.

Table 2
Weak vs. strong definites in *by*-phrases with *estar/ser* + PP.

	Estar + PP	*Ser* + PP
Total	127	406
Non-referential definite NP	57%	35%
Referential definite NP	43%	65%

In particular, we found that almost 60% of the definite nominals in *by*-phrases with *estar* + PP are weak or generic, whereas with *ser* + PP this is only the case for a bit over one third of the total number of definites. Obviously, this still leaves the 43% of strongly referential noun phrases unaccounted for; we will return to definites in section 5.

Similarly to definites, indefinites can also show a weak or strong interpretation, and thus not all indefinites denote properties or kinds. Weak indefinites get an existential interpretation and do not have quantificational force of their own – the variable introduced by an indefinite has to be bound by another element of the structure (Kamp, 1981). Other readings of indefinites are assumed to be strong. Indefinites, at least in the Germanic languages, can have generic, partitive or specific readings (e.g. Diesing, 1992; Frey, 2001). According to our account, then, we expect to find only weak indefinites with adjectival passives.

To test this prediction, we counted the number of indefinites of either type with adjectival and verbal passives. We used similar tests to those used to diagnose the referential vs. non-referential character of definites. After manually checking all the examples from the corpus, the results from the corpus analysis (summarised in Table 3) at first sight surprisingly show that over two thirds of indefinites with adjectival passives show a strong reading, whereas only roughly one third of them are weak. We obtain similar results for indefinite NPs with verbal passives: strong indefinites appear significantly more frequently with verbal passives (79%) than weak indefinites (21%).

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

	Estar + PP	*Ser* + PP
Total	51	71
Weak indefinite NP	27%	21%
Strong indefinite NP	73%	79%

This is an unexpected result under our account. However, on closer inspection, it turns out that almost all the cases of strong indefinites in *by*-phrases with adjectival passives involve verbal predicates that are stative. A typical example is the one in (27).

(27)   Las gentes [...] están   habitadas por un gran ardor de vivir [...]
          the   people   are.LOC inhabited by a   great zeal to live
          'The people are zealous to live.'

Other cases involve stative uses of eventive predicates (in particular extent uses), and we found a few examples from the early 20th century, in which the use of *estar* instead of *ser* sounded archaic and could be seen as a remnant of an older use of *estar* in verbal passive constructions. We will discuss extent uses of eventive predicates and the fact that some examples sound more archaic, in more detail in section 5. Overall, then, strong indefinites appear in state-related *by*-phrases, and disentangling state-related and event-related *by*-phrases will be the task of that section.

In the following, we will propose a measure to determine whether the complements in *by*-phrases with adjectival participles are indeed different from those with verbal participles, before turning to section 5, in which we investigate stative and eventive predicates separately.

4.4. 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 weak indefinite determiners, (singular and plural) bare nouns, as well as non-referential definite NPs (as discussed in the previous section), divided by the total number of *by*-phrases within each construction. The specificity measure was obtained as the result of the sum of referential definite NPs, strong indefinites, pronouns, proper names, possessives, demonstratives and numerals, divided by the total number of *by*-phrases. As stated in the beginning of this section, we left out other quantificational determiners. The results are given in Table 4.

As expected, the genericity index is higher for modifiers that appear with adjectival passives (.5) than with verbal passives (.3). On the contrary, the specificity index suggests that the respective nominals with adjectival passives have a lower referential character (.4), whereas it is higher for verbal passives (.6), also as expected. According to a chi-square test, the differences between both genericity and specificity indices with both types of passives are highly significant at a 99.9% confidence level, with *p*-values under.001 for both indices.

Table 4
Genericity/specificity indices of *by*-phrases with *estar/ser* + PP.

	Estar + PP	*Ser* + PP	*p*-Value
Genericity index	.5	.3	<.001***
Specificity index	.4	.6	<.001***

So even though we have not yet taken into account the difference between adjectival participles derived from eventive vs. stative predicates, the difference between verbal and adjectival passives that the semantic account predicts is already supported by trend. In section 5, we separate eventive from stative inputs and show that it is not just a trend. First, however, we will briefly say something about proper names.

4.5. Proper names

There also seem to be relevant differences in the types of proper names appearing in *by*-phrases with *estar* and *ser* + PP. Many proper names appearing with adjectival passives in the corpus are names of organisations or collective entities rather than of actual people (a similar impression is reported for German in Schlücker, 2005); cf. the examples in (28).

(28) a.   [...] el   costo   está   amparado por el   Ministerio.
               the cost   is.LOC enshrined by   the Ministry
            'The cost is covered by the Ministry.'
      b.   Renta Inmobiliaria tiene su   sede   en España. Está   participada por Sasea y
           Renta Inmobiliaria has   its headquarters in Spain   is.LOC shared   by   Sasea and
           Meliá Internacional.
           Meliá Internacional
           'Renta Inmobiliaria has its headquarters in Spain. It is shared by Sasea and Meliá Internacional.'

Many proper names in *by*-phrases with verbal passives, on the other hand, refer to individuals (mostly people, i.e. entities in the actual discourse), as in (29).

(29) Un nuevo paso hacia   adelante fue   dado   por Joseph Priestley, en 1774, al   descubrir
      a   new   step towards forward   was   given by   Joseph Priestley   in 1774   to_the discover.INF
      un gas que hacía arder una vela   con inusitada brillantez.
      a   gas that made burn   a   candle with unusual   brightness
      'A new step forward was taken by Joseph Priestley in 1774, when he discovered a gas that made a candle burn with unusual brightness.'

This is not to say that proper names referring to invididuals are not possible; an example of such a proper name is given in (30).

(30) La labor de todos los equipos está   supervisada por el   doctor Francisco Arquillo Torres.
      the work of all   the teams   is.LOC supervised   by   the doctor Francisco Arquillo Torres.
      'The work of all teams is supervised by doctor Francisco Arquillo Torres.'

In this particular example, the proper name can be used because there is something noteworthy about the research team, namely it is supervised by Francisco Arquilo Torres, who appears to be a famous researcher in the context where this sentence is found. In general, for a proper name to be possible in a *by*-phrase with adjectival passives, the respective person has to be somewhat 'famous enough', whereas this restriction is not found with verbal passives.

Similar examples have been discussed in the literature on German (e.g. Rapp, 1996; Maienborn, 2011). Maienborn, for example, discusses the contrast in (31).

(31) a.   Das Manuskript ist von Chomsky zitiert.
               the manuscript is   by   Chomsky cited
            'The manusript is cited by Chomsky.'
      b.   ?Das Manuskript ist von Sandberger zitiert.
                the manuscript is   by   Sandberger cited

A sentence like (31-a) is acceptable (in the generativist community), whereas for (31-b) to be acceptable, Sandberger should be known to many more people than speaker and hearer, or there should be something noteworthy about the fact that Sandberger cited the manuscript. Again, this effect is not found with the verbal passive (32).

(32)   Das Manuskript ist von Sandberger zitiert worden.
       the manuscript   is   by   Sandberger cited   become.PART
       'The manusript has been cited by Sandberger.'

We tentatively assume here (following a suggestion by Olav Mueller-Reichau, p.c.) that such proper names (as participants of an event kind) are only possible if they can be reinterpreted or type shifted into a kind term of the sort 'no less an x than proper name', e.g. no less a linguist than Chomsky. Within the overall account, then, this example talks about manuscripts being *chomskyzitiert* 'Chomsky-cited' (which also sounds a lot better than *sandbergerzitiert*).[21]

Returning to Spanish, then, the numbers of proper names in *by*-phrases with Spanish adjectival passives in the corpus, divided into individuals and organisations, are given in Table 5.

Table 5
Proper names in *by*-phrases with *estar* + PP and *ser* + PP.

	Estar + PP	*Ser* + PP
Total	30	131
Individuals	36.7%	67.9%
Organisations	46.7%	6.9%
Other collective entities	16.7%	25.2%

After closer inspection it furthermore turned out that all individual proper names with *estar* + PP refer to famous people, whereas only 29% (14 out of 48) of the individuals found with verbal passives do. It remains for future work to determine whether this division should lead to a revision of the genericity and specificity indices. For now it suffices to say that proper names referring to individuals in the discourse are more likely to contribute to the specificity index, whereas it is possible to think of collective entities and organisations in *by*-phrases as contributing information about an event kind description.

Let us then turn to our second study, in which we investigated state- and event-related *by*-phrases separately.

5. Study 2: Spanish state- vs. event-related *by*-phrases

To see whether the aspectual type of the underlying predicate in adjectival and verbal passives plays a determining role in the kinds of *by*-phrases we find, we investigated *by*-phrases with eventive and stative predicates separately. In order to do this, we relied on the following lists of verbal predicates that were compiled for independent reasons by Rafael Marín and Cristina Marco (Sánchez Marco, 2012). The list of eventive predicates contains approximately 50 verbs each for 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). Thus, in total there are 149 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 *atañer* 'to appertain', as well as object experiencer psychological predicates, such as *asustar* 'to frighten' or *aburrir* 'to bore'.[22]

We follow Arad (1999), Pylkkänen (1999), Marín and McNally (2011) and Marín (2011) in treating psych predicates as states, even though we are aware that this is a highly debated issue. For example, some psych predicates can have agentive uses that make them (appear more) eventive (e.g. *Peter deliberately scared Susan.*), or they can have interpretations of a state coming into existence, which we have labelled inchoative state so far (for the notion of inchoative states see also de Swart, 1998; Marín and McNally, 2011). In particular the latter case, though, does not involve eventivity per se (e.g. there is no process component), but involves a state with an onset, which is why we still treat these predicates as states. Furthermore, adjectival passives of those psych predicates that also allow agentive uses (e.g. *Susan is scared.*)

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[21] See also McIntyre (2013) about parallels between adjectival participle modifiers and incorporated nominals of the type *Beatles-inspired, human-made* in English, and Maienborn and Geldermann (2013) for a comparison of German expressions like *von einem Experten geprüft* 'checked by an expert' and *expertengeprüft* 'expert-checked'.

[22] Note that these lists were compiled in Sánchez Marco (2012) for independent reasons and hence contain all kinds of predicates, even those that might not derive a passive construction in the first place (e.g. unergatives, such as *bailar* 'to dance', *chirriar* 'to squeak', *dormir* 'to sleep', etc.). However, this will not distort the general results, for the following reason: if there is no passive construction of such a predicate, we will also not find a *by*-phrase with such a predicate. Whether or not a given verb is a good input to an adjectival or verbal passive is orthogonal to the issues under discussion here.

are commonly closer in meaning to the stative, non-agentive (and often reflexive or unaccusative) counterparts (see Gehrke and Marco, to appear, for further discussion of passives of Spanish psych predicates), a point that is also made by Meltzer-Asscher (2011) for Hebrew.

The complete list of verbs and the battery of linguistic diagnostics to distinguish between the different classes are given in Appendix B. These diagnostics are sensitive to a number of semantic features such as agentivity, telicity or dynamicity and have been extensively discussed in the literature; see Vendler (1957) and Dowty (1979), and specifically for Spanish de Miguel (1999) and Marín (2001). For example, eventive predicates get a habitual interpretation in the present tense (33-a), need a progressive for events taking place in the present moment (33-b), and can appear with agentive modifiers (33-c), whereas stative predicates cannot appear in the progressive or with agentive modifiers (34).

(33) a. Su   hermano trabaja (*en este momento).
          his/her brother works   in   this moment
          'His/her brother works (*right now).'
      b. Su   hermano está   trabajando (en este momento).
          his/her brother is.LOC   working   in   this moment
          'His/her brother is working (right now).'
      c. UGT ha   construido un edificio   deliberadamente.
          UGT has built   a   building   deliberately
          'UGT has built a building deliberately.'

(34) a. *A Marta le   están   gustando los hombres con   barba.
          to Marta her are.LOC pleasing the men   with beard
          intended: 'Marta is liking men with beards.'
      b. *A José le   gusta el catalán deliberadamente.
          to José him pleases the Catalan deliberately
          intended: 'José likes Catalan deliberately.'

The results of our study are given in Tables 6 and 7, which summarise the frequencies of by-phrases with adjectival and verbal passives where the underlying predicate is eventive and stative, respectively.[23] The total number of both types of passives, in particular of those with by-phrases, is rather low now, given the limitation to passives of exactly those 314 verbs that were classified into states vs. events, as mentioned above. This also means that many cases are excluded that appeared in Study 1 (Table 1), since for that study we considered adjectival and verbal passives derived from all verbs, not just these 314 ones. Hence, simply adding up the numbers of Tables 6 and 7 will not give us the numbers of Table 1, but unfortunately we also cannot run the diagnostics for every single Spanish verb that appears in the corpus. Thus in general, we get very low numbers across the board.

Let us then turn to event-related by-phrases in Table 6.

Table 6
Event-related by-phrases with estar and ser + PP.

	Estar + PP-eventive	Ser + PP-eventive	p-Value
Total	515	854	
With by-phrases	25	126	
With by-phrases (%)	4.9%	14.8%	<.001***
Pronouns (%)	4%	7.9%	.6923
Proper names (%)	8% (4%)	4.8% (8.7%)	1
Possessive determiners (%)	–	4.8%	–
Demonstrative determiners (%)	–	0.8%	–
Definite determiners (%)	24%	56.3%	<.01**
Indefinite determiners (%)	24%	9.5%	.08243
Numerals (%)	4%	1.6%	.4213
Bare singulars (%)	4%	1.6%	.4213
Bare plurals (%)	28%	7.9%	<.01**
Other quantificational determiners (%)	4%	4.8%	1

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[23] Again, we included other quantificational determiners in these tables, but since we leave their analysis for future research, we will not discuss them further.

As can be seen from Table 6, there is a higher frequency of event-related *by*-phrases with verbal passives as opposed to adjectival passives, in particular three times as many, relatively speaking. Furthermore, there are relatively more indefinites and bare plurals in such *by*-phrases with adjectival passives. The number of indefinites include both strong (5 with adjectival passives and 8 with verbal passives) and weak (1 with adjectival passives and 4 with verbal passives). In contrast, event-related *by*-phrases with verbal passives contain a higher number of definites; for both types of passives, the number of definites indicated here include both strong (2 with *estar* + PP and 43 with *ser* + PP) and weak definites (4 with *estar* + PP and 28 with *ser* + PP). The last column indicates that all these differences are statistically significant (according to Fisher's exact test). However, there is no statistically significant difference with pronouns, proper names, indefinite determiners, numerals, and bare singulars, but merely a (statistically insignificant) higher number of pronouns with verbal participles, and a higher number of proper names, indefinites, numerals, and bare singulars with adjectival participles. Finally, possessive and demonstrative determiners only appear in *by*-phrases with verbal participles, but are completely absent from those with adjectival participles.

The numbers in Table 7 display the types of state-related *by*-phrases that appear with verbal and adjectival passives.

Table 7
State-related *by*-phrases with *estar* and *ser* + PP.

	Estar + PP-stative	*Ser* + PP-stative	*p*-Value
Total	319	419	
With *by*-phrases	41	43	
With *by*-phrases (%)	12.9%	10.3%	.2933
Pronouns (%)	2.4%	25.6%	<.01**
Proper names (%)	4.9% (2.4%)	4.7% (9.3%)	.484
Possessive determiners (%)	7.3%	4.7%	.6722
Demonstrative determiners (%)	4.9%	2.3%	.6114
Definite determiners (%)	70.7%	53.5%	.1204
Indefinite determiners (%)	7.3%	7%	1
Numerals (%)	–	–	–
Bare singulars (%)	–	–	–
Bare plurals (%)	–	–	–
Other quantificational determiners (%)	2.4%	2.3%	1

As can be seen from this table, state-related *by*-phrases with adjectival passives appear to be of the same type as those with verbal passives. There is no significant difference between the relative number of *by*-phrases in general, with only slightly more with adjectival than with verbal participles. Furthermore, there are no significant differences in the complements of state-related *by*-phrases for any of the categories, except for pronouns (*p* < .01, according to Fisher's exact test), which appear more often with verbal passives.[24]

5.1. Discussion

Separating the adjectival participles with eventive inputs from those with stative inputs confirms our expectation that the differences between *by*-phrases with adjectival and verbal passives observed in the previous section only by trend (recall Table 1) are now much more pronounced and become statistically significant when we look only at event-related *by*-phrases. This is particularly the case for possessives and demonstratives, which do not occur in such *by*-phrases with adjectival participles at all. However, an unexpected finding was that there were no significant differences for pronouns, proper names, indefinites, numerals, and bare singulars in event-related *by*-phrases. Furthermore, we still found strongly referential definites and indefinites in such *by*-phrases. Such data pose a serious problem for the semantic account outlined in section 2, and we will take a closer look at these data in the following subsection.

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[24] As mentioned above, we had two separate lists of individual level predicates and object experiencer predicates, for independent reasons. Analysing the results separately, we obtained similar results to those presented in Table 7. In particular, there are no significant differences in any of the categories, except for definite determiners (*p* < .001***).

Turning to state-related *by*-phrases, we see that there are some differences between adjectival and verbal participles with definite determiners and pronouns, but overall no significant differences in the number of *by*-phrases, nor with the referentiality status of the nominals (we will present the genericity and specificity indices for Study 2 in section 5.4; these will confirm that there is no qualitative difference). When we take the results of all three tables into account (1, 6, 7), we see, then, that state-related *by*-phrases with adjectival participles behave on a par with both state-related and event-related *by*-phrases with verbal participles, and all three differ from event-related ones with adjectival participles, as predicted by the semantic account outlined in section 2.

Let us then turn to the five potentially problematic types of nominals we found in event-related *by*-phrases of adjectival passives, namely strong definites and indefinites, pronouns, proper names, and numerals.

5.2. Potentially problematic examples

Let us first address definite noun phrases in event-related *by*-phrases of adjectival passives. We found 8 examples in total, out of which we counted 6 as weak/generic definites. Out of the two remaining ones, one was from the early 20th century (the part of the *Project Gutenberg*) (35).[25]

(35)　... confesó que todo estaba preparado por el señor Polichinela para deshacerse
　　　　confessed that all was.LOC prepared by the mister Polichinela for undo.INF-SE
　　　　de tu amo ...
　　　　of your master
　　　　'He/she confessed that it all was arranged by Mr. Pulcinella in order to get rid of your master.'

This example has an archaic feel to contemporary native ears, and nowadays one would use a verbal passive, as in (36).

(36)　Todo fue preparado por el señor P. para deshacerse de tu amo.
　　　　all was prepared by the mister P. for undo.INF-SE of your master
　　　　'It all has been arranged by Mr. P. in order to get rid of your master.'

Similarly, out of the 3 examples with proper names, two are from the beginning of the 20th century ((36) discussed above, which is both a definite and a proper name, and (37)).

(37)　En un antiguo arcón de madera [...] [las ropas] estaban dobladas con cuidado por Margalida.
　　　　in an old chest of wood [...] the clothes were.LOC folded with care by Margalida
　　　　'The clothes, in an old wooden chest, were carefully folded up by Margalida.'

Just like the previous example, this one would nowadays be expressed by a verbal passive (38), whereas the adjectival passive would be ungrammatical.

(38)　Las ropas fueron dobladas con cuidado por Margalida.
　　　　the clothes were folded with care by Margalida
　　　　'The clothes were/had been carefully folded up by Margalida.'

We interpret examples such as these two as verbal passive readings of Old Spanish *estar* + PP, for the following reasons. In Old Spanish *ser* + PP was used as a verbal as well as an adjectival passive, and the establishment of adjectival passives with *estar* + PP took place centuries later, between the 14th and 16th centuries (Bouzet, 1953; Mendeloff, 1964; Pountain, 1985). Furthermore, there is quantitative evidence that this change, and in particular the consolidation of *estar* + PP as the adjectival passive construction, was not concluded during these centuries, but that it continues into the 20th century (Marco and Marín, to appear).[26]

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[25] We will come back to the only remaining more contemporary example with a definite in (40-a).
[26] At this point one might ask why we included texts from *Project Gutenberg* in the first place. We did so because both corpora were already in one large corpus and furthermore at the time we started investigating this topic we were not aware that there could be any differences of this type still in the 20th century. So this point in and by itself is already interesting, which is why we kept the data in this study.

Let us then turn to the remaining potentially problematic cases that do not have an archaic feel to them. These are the proper name in (39-a), the pronoun in (39-b), the definite in (40-a), the numeral in (40-b), and 5 examples of strong indefinites, to be addressed in section 5.3.

(39) a. Marie France se anduvo, prácticamente sola, los ocultos senderos de la   desventura
          Marie France SE walked   practically   alone the hidden paths   of the misfortune
          y   de la   maldad, allí   donde todo parece estar   olvidado por Dios.
          and of the evil   there where all   seems be.LOC forgotten by God
          'Marie France walked practically alone the hidden paths of misfortune and evil, where everything seems to
          be godforsaken.'
      b. Pero estos versos no están   escritos por mí.
          but   these verses not are.LOC written   by me
          'But these verses are not written by me.'

We view both these examples as fixed expressions. (39-a) is literally the expression used in Spanish for *godforsaken*, and thus should be treated on a par with our well-established proper names or even on a par with those definites that are unique qua world knowledge (in this case qua Christian belief), as it was the case with *the sun, the moon* (as in (25)). (39-b), in turn, even though it is also from the Gutenberg part of the corpus, does not feel archaic but is a very common expression found with this particular combination of participle and *by*-phrase with a first person singular pronoun; similar expressions are *estar* + *dicho / firmado / aceptado por mí* 'said / signed / accepted by me', whereas other participles sound odd in this combination, such as *expresado* 'expressed' or *creado* 'created'.

Finally, let us turn to the examples in (40).

(40) a. No está   reconocida internacionalmente por la   oposición de Grecia.
          not is.LOC recognised internationally   by the opposition of Greece
          'He/she/it is not internationally recognised by the opposition of Greece.'
      b. El   pecho, obscuro y   limpio de vello, estaba   cruzado   por dos líneas irregulares y
          the chest   dark   and clean of hair was.LOC traversed by two lines irregular   and
          violáceas, que eran también recuerdo de sangrientos lances.
          violet   that were also   memory of bloody   predicaments
          'The dark and hairless chest was traversed by two irregular and violet lines, that were also a memory of
          bloody predicaments.'

Even though a verb like *reconocer* 'recognise' in (40-a) clearly has an achievement use (and therefore was classified as such), we believe that in this particular example it is rather used like a stative. In particular, there was not an event of recognising that is at issue here, but rather we are talking about the status itself of being (or not being) internationally recognised. The *by*-phrase as such can thus be seen as state- rather than event-related. The same observations apply to (40-b) and to the 5 examples of strong indefinites with event-related *by*-phrases, as we will see in the following section, in which we will discuss stative uses of eventive predicates in more detail.

5.3. Stative uses of eventive predicates

There is a class of predicates that have been noted in the literature to have both stative and eventive uses. These are so-called extent predicates (see, e.g. Gawron, 2009; Koontz-Garboden, 2010), such as the one in (41).

(41) a. The police surrounded the house.   EVENTIVE USE
      b. Trees surrounded the house.   STATIVE USE

Under the eventive use in (41-a), there is an event taking place in time and space, at the temporal starting point of which the police are not located around the house, whereas at its temporal ending point they are. Under the stative use in (41-b), on the other hand, there is not an event taking place in time and space, rather a state is described, in which trees form an extended (nontemporal) path in space that is located around the house. Clearly both uses involve a kind of scale, only in the first case the scale is mapped onto the spatiotemporal domain (thus leading to an event reading), whereas in the second case, it is mapped onto the spatial domain only (thus leading to a state reading).

In our distinction between states and events we have counted all extent predicates as eventive, disregarding their stative use. However, (40-b) is one potentially problematic case we found in our Study 2, in which an extent predicate

combines with a *by*-phrase that contains a strongly referential noun phrase. This is clearly a stative use of an extent predicate, evidenced by the fact that the active counterpart cannot be used in the progressive (42).

(42)	*Dos líneas irregulares y violáceas están cruzando el pecho.
	two lines irregular and violet are.LOC crossing the chest
	intended: 'Two irregular and violet lines are crossing the chest.'

Similarly, all the 5 examples of strong indefinites in event-related *by*-phrases in Study 2 are combined with extent predicates; we illustrate this with the example in (43).

(43)	Los cabellos grises estaban cubiertos en parte por una pañoleta obscura, a la que
	the hairs grey were.LOC covered in part by a neckerchief dark to the that
	el tiempo y la grasa habían dado un tinte rojizo.
	the time and the fat had given a touch reddish
	'Her grey hair was partly covered by a dark neckerchief, which had obtained a reddish touch due to fat and the passing of time.'

Therefore, these are not a problematic examples for us, since these are state-related *by*-phrases.
	Potentially more problematic cases involve those in (44) (from Study 1).

(44)	a.	Aquellas tres habitaciones estaban gobernadas por su propia extrañeza [...]
		those three rooms were governed by his/her own strangeness
		'Those three rooms were governed by her own strangeness.'
	b.	Se quejan de que el secretario general está secuestrado por su guardia pretoriana
		SE complain of that the secretary general is.LOC kidnapped by his guard praetorian
		[(de Juan Alberto Belloch)] [...]
		of Juan Alberto Belloch
		'They complain about the fact that the general secretary is kidnapped by Belloch's praetorian guard.'

Although *gobernar* 'to govern' could be seen as an eventive predicate (e.g. it is often compatible with the progressive), it can be debated whether it is one (overall or at least in this particular context).[27] For example, the active counterpart of (44-a) cannot be used in the progressive (45).

(45)	*Su propia extrañeza está gobernando aquellas tres habitaciones.
	her own strangeness is.LOC governing those three rooms
	intended: 'Her own strangeness is governing those three rooms.'

This points to the same conclusion we reached for the examples in (40), namely that we are dealing with a state-related *by*-phrase again.
	(44-b), in turn, is a metaphoric use of the eventive verb *secuestrar* 'to kidnap', which here rather means something like 'to keep away' (or 'to distract'). Verbs like *keep* are generally viewed as stative, so it is possible that metaphoric uses of eventive predicates such as these effectively turn the underlying predicate into a stative one.
	Let us then turn to the genericity and specificity indices for Study 2.

5.4. Genericity and specificity indices

	Given our observations about the more archaic nature of the *Project Gutenberg* part of the corpus, we decided to calculate the genericity and specificity indices solely for the data we extracted from the more contemporary *Lexesp corpus*. Furthermore, we counted example (39-a) among the generic examples, whereas we kept the examples in (40) among the specific ones (the other potentially problematic examples in (39-b) and (40-b) appeared in the *Gutenberg* corpus).
	Tables 8 and 9 respectively provide the indices for event-related and state-related *by*-phrases.

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[27] This only points to the difficult task of identifying what exactly a stative predicate is, which we have already encountered when we discussed psych predicates. For a discussion of the notion of state and different diagnostics that then also sometimes lead to different categorisations, see Katz (2003, 2008), Mittwoch (2005), Maienborn (2007b), Rothmayr (2009), among others.

Table 8
Genericity/specificity indices of event-related by-phrases with estar/ser + PP.

	Estar + PP	Ser + PP	p-Value
Genericity index	.7	.4	.585
Specificity index	.1	.5	<.001***

Table 9
Genericity/specificity indices of state-related by-phrases with estar/ser + PP.

	Estar + PP	Ser + PP	p-Value
Genericity index	.4	.3	.7477
Specificity index	.6	.6	.7598

The differences between these indices are statistically highly significant only for specific event-related by-phrases (according to Fisher's exact test), which occur more often with verbal than with adjectival passives. These indices overall confirm our expectations and show that the trend found in Study 1 is not just a trend but there seems to be a ban on strongly referential noun phrases in event-related by-phrases with estar + PP.

6. Conclusion

In this paper, we addressed the question whether the complements of event-related by-phrases differ from those with verbal passives, and also from those in state-related by-phrases (with either type of passive). The corpus data analysis provides a positive answer to this question. In particular, we found significantly more by-phrases with verbal than with adjectival passives (irregardless of the underlying predicate), and highly significantly more when we only focused on the event-related ones. Furthermore and more importantly, 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 the large number of weak (in)definites and bare nominals with adjectival passives, as opposed to an almost complete ban on 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.

Thus, we do find by-phrases also with adjectival passives, which might very well lead to positing a Voice layer inside adjectival participles. However, we also believe that such a syntactic account needs to be amended with a semantic account that will explain the quantitative and qualitative differences between (event-related) by-phrases with verbal and adjectival passives. We take it that the semantic analysis outlined in the beginning of this paper is supported by the corpus findings reported in this paper. According to this analysis adjectival passives involve event kinds and pseudo-incorporation of event-related by-phrases into the participle before adjectivisation can take place. Restrictions on such event-related modifiers, and in particular the ban on strongly referential noun phrases inside them, therefore follow from independently motivated restrictions on kind modification as well as on pseudo-incorporation.

Several questions remain. For one, the data sample we investigated in Study 2 was extremely small, given that we had to control for whether the underlying predicate was a state or an event. In future research, it would be useful to include a larger sample of predicates. In addition, the criteria for grouping a particular verbal predicate as a state or event might not have been fully accurate, something we have addressed at the end of the last section. Finally, we noted the possibility that some occurrences of estar plus past participle might be considered verbal rather than adjectival passives, in particular in the beginning of the 20th century. This raises the overall question whether the equations estar+participle = adjectival passive and ser+participle = verbal passive are strict rules, which is what we have implicitly been assuming throughout the paper, or whether they are mere tendencies. This issue remains to be investigated.

Appendix A. Documents of Project Gutenberg included in the corpus

Azorín, A. 1903. Trinidad Martínez Ruiz.
Baroja, P. 1919. Zalacaín el Aventurero.
Baroja, P. 1920. Las inquietudes de Shanti Andía
Benavente, J. 1918. Tres Comedias.
Blasco Ibáñez, V. 1903. La Catedral.

Blasco Ibáñez, V. 1904. *Entre naranjos.*
Blasco Ibáñez, V. 1904. *El intruso.*
Blasco Ibáñez, V. 1905. *La bodega.*
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Appendix B. Aspectual classes of verbs and battery of linguistic diagnostics to distinguish them

The diagnostics to distinguish individual-level (IL) states, stage-level (SL) states, accomplishments, achievements, and activities are summarised in Table B.10.[28]

Table B.10
Linguistic diagnostics to distinguish IL-states, SL-states, accomplishments (Acc.), achievements (Ach.) and activities (Act.).

	IL-states	SL-states	Acc.	Ach.	Act.
En X tiempo 'in X time'	no	no	yes	yes	no
Durante X tiempo 'for X time'	yes	yes	no	no	yes
Complement of *acabar* 'to finish', *terminar* 'to terminate'	no	no	yes	no	no
Progressive	no	no	yes	no	yes
Habitual interpretation in present tense	no	no	yes	yes	yes
Complement of *dejar* 'to leave'	yes	no	yes	no	yes
Agentivity tests	no	no	yes	yes	yes
Ambiguity with *casi* 'almost'	no	no	yes	no	no
Estar 'be.LOC' + gerund implies *haber* 'have' + PP	–	–	no	–	yes
Restrictions on temporal quantifiers	yes	no			
Hace 'ago', *después de* 'after'	yes	no			

[28] Note that these tests do not distinguish object experiencer psychological predicates, but more generally SL-states. A good overview of different types of Spanish psych predicates and their aspectual properties is given in Fábregas et al. (2012), but here some of the main facts. Spanish has subject experiencer verbs (e.g. *adorar* 'adore'), dative object experiencer verbs (e.g. *gustar* 'please'), and accusative object experiencer verbs (see below). In addition, many object experiencer verbs have reflexive uses, e.g. *amedrentar* 'to scare' vs. *amedrentarse* 'to get/be scared'. Hence, it is impossible to decide whether the relevant participles are derived from the reflexive or the non-reflexive form (see also Gehrke and Marco, to appear). For independent reasons, Sánchez Marco (2012) separated these two groups, but for our purposes in the main text we grouped them under the same label 'states'.

IL-states: *abundar* 'to abound', *admirar* 'to admire', *adorar* 'to adore', *agradar* 'to please', *amar* 'to love', *anhelar* 'to long for', *atañer* 'to concern', *bastar* 'to be enough', *caber* 'to be room for', *carecer* 'to lack', *comprender* 'to understand', *concernir* 'to concern', *confiar* 'to confide', *conocer* 'to know', *consistir* 'to consist of', *constar* 'to be a fact', *costar* 'to cost', *creer* 'to believe', *depender* 'to depend', *desear* 'to desire', *detestar* 'to detest', *dudar* 'to doubt', *entender* 'to know about', *entrañar* 'to entail', *envidiar* 'to envy', *equivaler* 'to be equivalent', *existir* 'to exist', *gustar* 'to like', *implicar* 'to involve', *incumbir* 'to be incumbent', *lamentar* 'to regret', *merecer* 'to deserve', *necesitar* 'to need', *odiar* 'to hate', *parecer* 'to seem', *permanecer* 'to remain', *pertenecer* 'to pertain', *poseer* 'to possess', *preferir* 'to prefer', *querer* 'to want', *repugnar* 'to repulse', *requerir* 'to require', *saber* 'to know', *sentir* 'to feel', *significar* 'to mean', *sobrar* 'to be not needed', *suponer* 'to suppose', *temer* 'to fear', *tener* 'to have', *valer* 'to be worth'.

Accusative (object experiencer) psych verbs: *abrumar* 'to wear out', *aburrir(se)* 'to bore', *acongojar(se)* 'to upset', *acosar* 'to pester', *afectar* 'to affect', *afligir(se)* 'to afflict', *agobiar(se)* 'to overwhelm', *alentar* 'to encourage', *aliviar(se)* 'to alleviate', *alterar(se)* 'to unsettle', *alucinar* 'to amaze', *amedrentar(se)* 'to scare', *amenazar* 'to threaten', *angustiar(se)* 'to distress', *animar(se)* 'to cheer up', *anonadar(se)* 'to stun', *apaciguar(se)* 'to calm', *apasionar(se)* 'to make someone crazy/ passionate (about something)', *apenar(se)* 'to sadden', *apesadumbrar(se)* 'to distress', *apiadar(se)* 'to pity', *arrepentirse* 'to regret', *asombrar(se)* 'to astonish', *asustar(se)* 'to frighten', *atemorizar(se)* 'to intimidate', *aterrar(se)* 'to terrify', *aterrorizar(se)* 'to terrorise', *atormentar(se)* 'to torment', *aturdir(se)* 'to bewilder', *avergonzar(se)* 'to shame', *azorar(se)* 'to alarm', *cabrear(se)* 'to piss off', *cohibir(se)* 'to make awkward', *compungir(se)* 'to make remorseful', *confundir(se)* 'to confuse', *conmocionar(se)* 'to affect deeply', *consolar(se)* 'to comfort', *consternar(se)* 'to fill with dismay', *contrariar(se)* 'to oppose', *decepcionar(se)* 'to disappoint', *deprimir(se)* 'to depress', *desencantar(se)* 'to disenchant', *desesperar(se)* 'to despair', *deshonrar* 'to dishonor', *desilusionar(se)* 'to disillusion', *deslumbrar(se)* 'to dazzle', *desmoralizar(se)* 'to demoralise', *desolar* 'to desolate', *despistar(se)* 'to daydream', *desquiciar(se)* 'to drive to despair', *devastar* 'to devastate', *distraer(se)* 'to distract', *embelesar(se)* 'to captivate', *emocionar(se)* 'to thrill', *empecinarse* 'to be obstinate', *enamorar(se)* 'to cause someone to fall in love', *encolerizar(se)* 'to irritate', *enfadar(se)* 'to anger', *enfurecer(se)* 'to infuriate', *enojar(se)* 'to rile', *enorgullecer(se)* 'to fill with pride', *entretener(se)* 'to entertain', *entristecer(se)* 'to sadden', *entusiasmar(se)* 'to excite', *espantar(se)* 'to scare', *estimular(se)* 'to stimulate', *exaltar(se)* 'to overexcite', *exasperar(se)* 'to exasperate', *excitar(se)* 'to excite', *extenuar(se)* 'to exhaust', *fascinar(se)* 'to fascinate', *fastidiar(se)* 'to annoy', *frustrar(se)* 'to frustrate', *honrar* 'to honor', *humillar(se)* 'to humiliate', *ilusionar(se)* 'to excite', *impacientar(se)* 'to cause someone to be impatient', *impresionar(se)* 'to impress', *indignar(se)* 'to outrage', *inspirar(se)* 'to inspire', *interesar(se)* 'to interest', *irritar(se)* 'to irritate', *maravillar(se)* 'to marvel', *molestar(se)* 'to disturb', *mosquear(se)* 'to annoy', *motivar(se)* 'to motivate', *obsesionar(se)* 'to obsess', *ofender(se)* 'to offend', *ofuscar(se)* 'to obfuscate', *oprimir* 'to oppress', *perturbar* 'to disturb', *preocupar(se)* 'to worry', *reconfortar(se)* 'to comfort', *relajar(se)* 'to relax', *satisfacer(se)* 'to please', *seducir* 'to seduce', *sorprender(se)* 'to surprise', *tranquilizar(se)* 'to appease', *trastornar(se)* 'to derange'.

Accomplishments: *arrasar* 'to devastate', *arreglar* 'to repair', *ascender* 'to ascend', *atravesar* 'to go through', *bajar* 'to go down', *borrar* 'to delete', *cantar* 'to sing', *cavar* 'to dig', *cocinar* 'to cook', *colocar* 'to place', *comer* 'to eat', *concretar* 'to specify', *construir* 'to build', *convertir* 'to transform', *crear* 'to create', *cruzar* 'to cross', *cubrir* 'to cover', *descender* 'to descend', *dibujar* 'to draw', *doblar* 'to fold', *elaborar* 'to elaborate', *encajar* 'to fit', *escalar* 'to climb', *esconder* 'to hide', *escribir* 'to write', *fabricar* 'to manufacture', *grabar* 'to record', *huir* 'to run away', *hundir* 'to sink', *interpretar* 'to interpret', *leer* 'to read', *levantar* 'to lift', *pelar* 'to peel', *pintar* 'to paint', *planchar* 'to iron', *preparar(se)* 'to prepare', *producir* 'to produce', *provocar* 'to provoke', *recitar* 'to recite', *recorrer* 'to traverse', *recuperar(se)* 'to recover', *regresar* 'to return', *reparar* 'to repair', *repasar* 'to revise', *sacar* 'to take out', *secar(se)* 'to dry', *subir* 'to upload', *tejer* 'to weave', *transcribir* 'to transcribe'.

Achievements: *abrir* 'to open', *acertar* 'to guess correctly', *adquirir* 'to acquire', *alcanzar* 'to reach', *apagar* 'to turn off', *caer* 'to fall', *capturar* 'to capture', *cerrar* 'to close', *cesar* 'to cease', *comenzar* 'to begin', *conseguir* 'to achieve', *convertir(se)* 'to convert', *dejar* 'to leave', *descubrir* 'to discover', *despertar* 'to wake up', *destruir* 'to destroy', *detectar* 'to detect', *empezar* 'to start', *encender* 'to turn on', *encontrar* 'to find', *enterar* 'to find out', *entrar* 'to enter', *estallar* 'to blow out', *finalizar* 'to finalise', *firmar* 'to sign', *franquear* 'to cross from one side to other', *ganar* 'to win', *heredar* 'to inherit', *iniciar* 'to initiate', *llegar* 'to arrive', *lograr* 'to achieve', *matar* 'to kill', *morir* 'to die', *nacer* 'to be born', *olvidar* 'to forget', *parar* 'to stop', *partir* 'to depart; to divide', *perder* 'to lose', *recibir* 'to receive', *reconocer* 'to recognise', *recordar* 'to remember', *romper* 'to break', *salir* 'to go out', *sentar(se)* 'to sit', *surgir* 'to arise', *terminar* 'to terminate', *traspasar* 'to transfer', *tropezar* 'to stumble', *venir* 'to come', *volver* 'to go back'.

Activities: *acariciar* 'to stroke', *andar* 'to walk', *bailar* 'to dance', *buscar* 'to search', *chirriar* 'to squeak', *circular* 'to circulate', *conducir* 'to drive', *conspirar* 'to conspire', *continuar* 'to continue', *coquetear* 'to flirt', *correr* 'to run', *crecer* 'to grow', *crujir* 'to rustle', *dormir* 'to sleep', *empujar* 'to push', *escuchar* 'to listen', *escupir* 'to spit', *esperar* 'to wait', *explorar* 'to explore', *fumar* 'to smoke', *golpear* 'to hit', *gritar* 'to shout', *hablar* 'to talk', *insultar* 'to insult', *jugar* 'to play', *llorar* 'to cry', *llover* 'to rain', *mear* 'to piss', *mecer* 'to rock', *mirar* 'to look at', *nadar* 'to swim', *nevar* 'to snow', *observar* 'to observe',

pasear 'to go for a walk', *pensar* 'to think', *perseguir* 'to pursue', *reír* 'to laugh', *rodar* 'to roll', *roncar* 'to snore', *rugir* 'to roar', *sonreír* 'to smile', *soñar* 'to dream', *temblar* 'to tremble', *trabajar* 'to work', *tronar* 'to thunder', *usar* 'to use', *utilizar* 'to utilise', *viajar* 'to travel', *vibrar* 'to vibrate', *volar* 'to fly'.

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