

On the formation of adjectival passives: the case of unaccusatives

Abstract

The paper argues for a new perspective on adjectival passives by discussing the conditions on the adjectival passive formation for one particular verb class which hasn't received much attention in this context up to now, viz. unaccusatives. Adopting an adjectival analysis of adjectival passives, it is shown on the basis of corpus data as well as an acceptability rating study (a) that unaccusatives are legitimate candidates for building adjectival passives and (b) that they are subject to a characteristic kind of contextual variance in this construction, that has also been observed with, e.g., activity verbs and therefore turns out to be much more systematic than previously assumed. This leads to the conclusion that the adjectival passive formation is a rather general, broadly available grammatical option that is characteristically shaped and controlled by pragmatics.

1. Introduction

In the literature on passives it is widely observed that many languages display two kinds of passives: an eventive, or verbal, passive and a so-called “stative”, or “adjectival”, passive; cf. the overview in Emonds (2006). English does not mark this difference overtly – both verbal and adjectival passives are expressed by an *-en/-ed* participle in combination with a form of *to be*. Thus, a sentence like (1) is ambiguous between an eventive and a stative reading and can be disambiguated only by the linguistic or extralinguistic context; cf. (1a) vs. (1b). The manner adverbial *quietly* and the agent phrase *by the thief* in (1a) highlight the verbal passive's eventive reading whereas the durative adverbial *for years* in (1b) selects for the adjectival passive's stative reading.

- | | | |
|-----|--|------------------------------|
| (1) | The drawer was closed. | adjectival or verbal passive |
| | a. The drawer was quietly closed by the thief. | verbal passive |
| | b. The drawer was closed for years. | adjectival passive |

That is, the same form *to be* is used both as auxiliary in the verbal passive and as copula in the adjectival passive. This makes it difficult to tease apart verbal and adjectival passives in

English. In a language like German the situation is more transparent, because verbal and adjectival passives are expressed by different means. The verbal passive is built by combining an *-en/-t* participle with the passive auxiliary *werden* ('become'); cf. (2).¹ The adjectival passive is built by using the copula *sein* ('be') instead; cf. (3).

(2) Die Schublade wurde geschlossen. verbal passive

The drawer became closed

'The drawer was closed.'

a. Die Schublade wurde leise von dem Dieb geschlossen.

The drawer became quietly by the thief closed

'The door was quietly closed by the thief.'

b. *Die Schublade wurde jahrelang geschlossen.

The drawer became for years closed

(3) Die Schublade war geschlossen. adjectival passive

The drawer was closed

'The drawer was closed.'

a. *Die Schublade war leise von dem Dieb geschlossen.

The drawer was quietly by the thief closed

b. Die Schublade war jahrelang geschlossen.

The drawer was for years closed

'The drawer was closed for years.'

Thus, a sentence like (3) can only receive an adjectival passive analysis. Due to their formal difference there is no danger of mixing up adjectival and verbal passives in German. This makes German particularly suitable for studying adjectival passives.

Several proposals have been made recently arguing (a) for the genuinely adjectival nature of so-called "adjectival passives" and exploring (b) their semantics; cf. e.g. Kratzer (1994, 2000), Rapp (1997, 1998), von Stechow (1998), Maienborn (2007). Somewhat surprisingly, the question as to which verbs actually take part in the adjectival passive

¹ The ungrammatical sentence (2b) could only be rescued by an iterative reinterpretation of the verbal expression.

formation hasn't been thoroughly dealt with up to now. Typical cases of adjectival passives discussed in the literature are based on transitive resultative verbs like *to close*, i.e. transitive verbs with a lexically specified result state. These are the verbs Kratzer's semantic analysis is designed for. Kratzer mentions briefly the case of activity verbs like *streicheln* 'to pet'. These verbs don't have a designated result state and they seem to resist adjectival passive formation. A sentence like (4) sounds odd out of the blue.

- (4) ??Die Katze ist gestreichelt.
The cat is petted

Yet, under certain contextual conditions adjectival passives may be built also with activity verbs. In particular, sentences like (4) are fine if the context supports a "job is done" interpretation (Kratzer 2000: 4). A natural setting for (4) is given in (4').

- (4') Anna hat ihre Nachbarspflichten erfüllt: Der Briefkasten ist geleert, die Blumen sind gegossen und die Katze ist gestreichelt.
Anna has her neighbor-duties fulfilled: The mail-box is emptied the flowers are watered and the cat is petted
'Anna has done her neighborly duties: the mailbox is emptied, the flowers are watered and the cat is petted.'

In the light of perfectly natural variants like (4'), the adjectival passive formation of activity verbs cannot be ruled out as ungrammatical then. The same holds true for other seemingly ill-formed cases, as, e.g., stative verbs. According to Kratzer (2000: 5) stative verbs like *wissen* 'to know' are categorically excluded from the adjectival passive formation; sentence (5) is judged as ungrammatical by Kratzer. Yet, in a contrastive setting like the one in (6), where it is at issue whether an answer has been reached on the basis of firm knowledge or by guessing, sentence (5) is perfectly fine and by no means deviant.

- (5) Die Antwort ist gewusst.
The answer is known
- (6) Ist die Antwort gewusst oder geraten?
Is the answer known or guessed

We conclude from these observations that it would be misleading if the adjectival passive formation of, inter alia, activity verbs and statives were ruled out on grammatical grounds. In our view, it is a particular challenge for any theory on adjectival passives to account properly for the impact the context has on the formation and interpretation of adjectival passives. Thus,

an adequate analysis of adjectival passives should take into account such apparent borderline cases as illustrated in (4) – (6) right from the beginning. The aim of the present paper is to contribute to a more thorough understanding of the interplay between grammar and pragmatics in the formation of adjectival passives, which we consider to be a prerequisite for approaching their semantics. We will do so by discussing the conditions on the adjectival passive formation for one particular verb class which hasn't received much attention in this context up to now, viz. unaccusatives.

The reason why unaccusatives were widely ignored particularly in the literature on German adjectival passives is the following. Unaccusatives build the perfect tense with the auxiliary *sein* 'to be' in German (whereas unergatives use *haben* 'to have').

- (7) Anna ist eingeschlafen.
Anna is in-slept
'Anna has fallen asleep.'

Thus, a sentence like (7) has a present perfect analysis for sure. But what about an adjectival passive analysis besides that? Are sentences like (7) ambiguous allowing for both a present perfect and an adjectival passive reading or do they only support a present perfect reading? Helbig (1983, 1987) and Wunderlich (1997) are explicit about that. They take (7) to express unambiguously an event in present perfect tense. The adjectival passive formation is reserved to some subset of transitive verbs (i.e. verbs that also have an eventive passive) according to them.² Unaccusatives are categorically excluded from building adjectival passives under this view. On the opposite side there are two short remarks by von Stechow (1998: 27) and Nogami (2000: 98) hinting towards the possibility of building adjectival passives at least with certain unaccusative verbs (see §4). But the issue of whether and to what extent unaccusatives take part in the adjectival passive formation still hasn't been discussed in some more detail yet.³ This is what we intend to do in the present paper. We will show that, first of all, unaccusatives are legitimate candidates for building adjectival passives, and, secondly, that they are subject to the same kind of contextual variance as illustrated above with activity verbs and statives. This will lead us to conclude that the adjectival passive formation is a rather general, broadly available grammatical option which is characteristically shaped and

² Helbig (1983, 1987) advocates a verbal analysis of the "stative passive" treating it as a second passive voice on a par with the eventive passive. Wunderlich (1997) adopts an adjectival analysis; cf. Rapp (1998), Maienborn (2007) for a critical overview of the different types of verbal and adjectival analyses for the German adjectival passive that have been proposed in the literature.

³ But cf. Bresnan (1982, 2005), who proposes that both passive as well as perfect participles may be adjectivized, the latter option being open to unaccusative verbs.

controlled by pragmatics. More specifically, the adjectival passive formation will turn out to depend not so much on genuine grammatical or lexical constraints but to rely more heavily on contextually salient conceptual knowledge. Although we won't be able to explore the semantic implications of this perspective in some more detail here (but cf. Maienborn 2007, 2008) we consider this finding to provide a crucial cornerstone for an adequate semantics of adjectival passives.

The remainder of the paper is organized as follows. In the next section, we will review the arguments that have been brought forward in favor of an adjectival analysis of adjectival passives. In section 3 the relevant diagnostics will be applied to the case of unaccusatives. Empirical evidence will be provided mainly by corpus data.⁴ Section 4 discusses the question whether the formation of adjectival passives is systematically available to all unaccusatives or only to some subgroup of them. We will present the results of an acceptability rating study that at first sight seem to support the latter option. Yet, the further discussion will yield a pragmatic explanation for the observed rating differences, which may also account for the above mentioned context effects with activity verbs and statives. Section 5 concludes the paper.

2. On the adjectival nature of adjectival passives

Earlier studies on the adjectival, or stative, passive (“Zustandspassiv”) in German were mainly concerned with the question of whether a structure like (3), repeated as (8) below, belongs to the verbal paradigm, i.e. whether it is built up by a verbal participle plus an auxiliary *sein* (‘to be’) or whether it belongs to the adjectival paradigm, i.e. whether we are dealing with an adjectivized verbal participle in combination with the copula *sein* instead; cf. the respective analyses in (8a) and (8b).⁵

⁴ Most data that will be presented in the following sections stem from corpora of written German, viz. the morphosyntactically annotated corpus TIGER 1.0 (<http://www.ims.uni-stuttgart.de/projekte/TIGER>) and the COSMAS II corpus from the IDS Mannheim (<http://www.ids-mannheim.de/cosmas2>). Only occasionally did we resort to data from the internet found with Google or relied exclusively on introspection in order to fill some corpus gaps. But note that all crucial claims in our argumentation are empirically corroborated by corpus data from COSMAS and TIGER.

⁵ Proponents of (different sorts of) verbal analyses for the adjectival passive in German are Helbig (1983, 1997), Leiss (1992) and – in parts – Lenz (1994) among others. Adjectival analyses have been advocated by Rapp (1997, 1998), Kratzer (2000) and Maienborn (2007).

(8) Die Schublade war geschlossen.

The drawer was closed

- a. Verbal analysis: Die Schublade AUX [_{VPART} geschlossen]
b. Adjectival analysis: Die Schublade COP [_{AP} [_A [_{VPART} geschlossen] \emptyset]]

The adjectival analysis given in (8b) follows Lieber (1980) in deriving the adjectival participle from its verbal counterpart via zero-affixation.

The considerations concerning the correct analysis for adjectival passives gave rise to a large collection of diagnostics which provide ample evidence for the adjectival status of the participle in (8) cf. in particular Höhle (1978), Litvinov & Nedjalkov (1988), Lenz (1994), Kratzer (1994, 2000), Rapp (1997, 1998), Maienborn (2007).⁶ Hence, current accounts all adhere to some version of the adjectival analysis sketched in (8b). In the following we will run through a representative sample of these diagnostics and illustrate the behavior of standard adjectival passives based on transitive verbs with respect to these tests for adjectiveness. These diagnostics include:

- Adjectival negation
- Adjectival gradation
- Coordination with genuine adjectives
- Adjectival word formation

ADJECTIVAL NEGATION:

Unlike its English cousin, the German negative affix *un-* only combines with adjectives (and nouns), but not with verbs. The combination of a participle with *un-* as in (9) thus clearly indicates that an adjectival conversion of the participle must have taken place.

(9) a. Oft waren diese Regeln ungeschrieben, aber sie waren trotzdem jedem klar.

Often were these rules unwritten but they were nevertheless everybody clear

‘These rules were often unwritten, but they were still clear to everyone.’

(TIGER s11406)

b. Obwohl Global Marketing als die Herausforderung der Zukunft bezeichnet wird,

Although global marketing as the challenge of-the future labeled was

sind viele Fragen ungeklärt.

are many questions unsettled

⁶ See also Wasow (1977), Emonds (2006) for respective collections of English diagnostics.

‘Although global marketing was labelled as the challenge of the future, many questions are unsettled.’ (TIGER s24067)

- c. dass ich des Orgelns unkundig bin, weshalb das Orgelwerk leider noch immer *that I playing-organ ignorant am which is why the organ piece regrettably still unkomponiert* ist.
un-composed is
‘that I cannot play the organ, and so unfortunately the organ piece is as yet unwritten.’ (Max Goldt: *Mind-Boggling*; cf. Maienborn 2007: 91)

ADJECTIVAL GRADATION:

Adjectival passives may also display comparative or superlative morphology, which again is a clear indicator that the participle must have turned into an adjective; cf. the examples in (10). Even though the relevant data are rare, i.e. adjectivized participles are semantically not particularly well-suited for adjectival gradation (and pattern with other ungradable adjectives in this respect), the mere existence of regularly formed comparative- or superlative-forms in (10) suffices to establish the adjectival status of the participles involved.

- (10) a. Tagsüber fällt es natürlich leichter, auf kleine “Sünden” zu verzichten - man ist *By day fall it naturally easier at little sins to abdicate one is einfach abgelenkter.*
just distract-COMP
‘Of course during the day it is easier to abstain from little “sins” – one is just more distracted.’ (COSMAS M00/MAR.05611)
- b. Am bedrohtesten sind die Landtage.
The menace-COMP are the parliaments
‘The most threatened are the parliaments.’ (COSMAS V98/MAI.21411)
- c. ... Autor, der viel berühmter und vor allem weitaus gelesener war als Goethe
... author who much famous-COMP and above all far read-COMP was than G.
‘... author who was much more famous and above all far more read than Goethe.’
(*Die Zeit*, 29.07.1999; cf. Maienborn 2007: 93)

COORDINATION WITH GENUINE ADJECTIVES:

Coordination is a suitable diagnostic for establishing categorial identity. Only elements of the same type can be conjoined; cf. e.g. Lang (1984). If we find adjectival passives on a par with

genuine adjectives within coordinated copula structures this is once again strong evidence for the adjectival nature of the participles; cf. the examples in (11).

- (11) a. Entlassungen seien weder geplant noch nötig.
Dismissals are neither planned nor necessary
 ‘Dismissals are neither planned nor necessary.’ (TIGER s3166)
- b. [...] all das ist blitzsauber geputzt und zur Abgabe bereit.
all that is spotlessly-clean cleaned and for delivery ready
 ‘it is all spotlessly clean and ready for delivery.’ (COSMAS A98/NOV.76554)
- c. Diese eskalierten in einer Abrechnung Pickfords mit Richard Leakey in Buchform,
 These escalated in a payoff Pickfords with Richard Leakey in book-format
 nachdem Leakey weltberühmt, Pickford jedoch entlassen war.
after Leakey world-famous, Pickford but dismissed was
 ‘These escalated in a book in which Pickford reckoned up with Richard Leakey after
 Leakey had become world-famous but Pickford fired.’
 (Die Zeit, 14.12.2000; cf. Maienborn 2007: 94)

ADJECTIVAL WORD FORMATION:

Furthermore the participles in adjectival passives take part in a typical adjectival word formation process. They build adjectival compounds with nouns or adverbs as non-heads as in (12).

- (12) a. Sonnenbeschienen wie Hauff war, saß er zwar mit 38 Lenzen als jüngstes
Sun-illuminated like Hauff was, sat he indeed with 38 years as youngest
 Kabinettsmitglied in erlauchter Runde.
 Cabinet-member in illustrious circle
 ‘As “sun-lit” (i.e. privileged) as Hauff was, at the age of 38 he was the youngest
 cabinet member in an illustrious group.’ (COSMAS H86/UA3.00526)
- b. Sie ist handbestickt, mit Hirschhornknöpfen versehen und hat alle Merkmale einer
She is hand-embroidered, with staghorn-buttons endowed and has all features of-an
 originalen Ledernen.
original leather-made
 ‘It is hand embroidered, with horn buttons and everything you would expect of
 genuine leather.’ (COSMAS O97/JAN.09541)

- c. Patienten, die in hohem Maße selbst- oder fremdgefährdet sind
Patients who to a great extent self- or external-endangered are
 ‘Patients who are at great risk from themselves or others’

(COSMAS N98/OKT.38638)

This word formation pattern is highly productive in German. Thus we also find many occasional compounds like *schwedentrainiert* (‘sweden-trained’) or *Diana-bereinigt* (roughly: ‘Diana-purged’) in (13). For instance, the intended interpretation of *schwedentrainiert* in (13a) is that the Japanese referred to was “trained” in Sweden and thus got used to drinking (lots of) alcohol.

- (13) a. Ich hatte Sorge wie der Japaner das Oktoberfest finden würde, aber es stellte sich
I had headaches how the Japanese the Oktoberfest find would, but it turned
 heraus, dass er schwedentrainiert war.
out that he sweden-trained was
 ‘I was worried about what the Japanese (guy) would think about the Oktoberfest, but
 it turned out that he was Sweden-trained.’ (overheard on 11/2007)
- b. Die Realität ist heute weitgehend Diana-bereinigt.
 The reality is today largely Diana-purged
 ‘Reality today is largely purged of Diana.’ (Spiegel-online 18.07.2007,
 report about the 10th anniversary of the death of Princess Di)

Note that there is no analogous word formation pattern for verbs. The compounds in (12) have no finite verbal counterpart (14); see Maienborn (2007) for more details.

- (14) a. *Es sonnenbescheint Hauff. / *Es bescheint Hauff sonne.
It sun-illuminates Hauff It illuminates Hauff sun
- b. *Sie handbestickte die Jacke. / *Sie bestickte die Jacke hand.
She hand-embroidered the jacket She embroidered the jacket hand.
- c. *Die Patienten fremdgefährden die Sicherheit. / * Die Patienten gefährden die
The patients external-endanger the security. The patients endanger the
 Sicherheit fremd.
security external

Once again we are led to conclude that the participle must have undergone an adjectival conversion process which opens up the possibility for the particular kind of adjectival word formation illustrated in (12) and (13) to take place.

Up to this point we have seen ample empirical evidence for the adjectival nature of adjectival passives. The results of all diagnostics that we presented here consistently point towards an analysis as a specific kind of copula construction whose predicate is given by an adjectivized verbal participle; cf. the schema given in (8b).^{7,8}

In Stolterfoht, Gese & Maienborn (2008) we provide additional psycholinguistic evidence for the assumption that adjectival passives rely on an adjectival conversion process. With a self-paced reading study we tested the hypothesis that conversion leads to additional processing costs and that, therefore, adjectivized participles are processed more slowly than their verbal counterparts in verbal passives. For the processing of sentences like (15) we predicted longer reading times for the participle *verschüttet* ('spilled') after *sein* than after the passive auxiliary *werden*, because the adjectival conversion process is only necessary for the adjectival passive in (15a), but not for the verbal passive in (15b). The behavior of the participles in combination with *sein* and *werden* was compared with that of genuine adjectives (16a) vs. (16b), where no additional processes are involved and therefore no reading time differences are expected.

⁷ In fact there is only one major problem adjectival analyses of adjectival passives have to struggle with. This is the ability of adjectival passives to combine with typical verbal modifiers like agent phrases, instrumentals and locatives as in (i)-(iii), which seems to suggest that the verb's event argument is still available after all; cf. the discussion in Kratzer (1994, 2000) and Rapp (1998).

- | | | |
|-------|---|--------------|
| (i) | Die Zeichnung ist von einem Kind angefertigt / *schön.
<i>The drawing is by a child done / *pretty.</i>
'The drawing is done / *pretty by a child.' | Agent |
| (ii) | Der Brief war mit roter Tinte geschrieben / *leserlich.
<i>The letter was with red ink written / *legible</i>
'The letter was written / *legible in red ink.' | Instrumental |
| (iii) | Die Birnen waren in Rotwein gedünstet / *weich.
<i>The pears were in red wine simmered / *soft</i>
'The pears were simmered / *soft in red wine.' | Locative |

Kratzer (1994, 2000) proposes to account for these data by assuming that the adjectival \emptyset -affix may attach at the lexical level as well as at the phrasal level. In the latter case adjectivization applies to a whole VP including verbal modifiers. Kratzer's solution has been taken up and developed further by several authors; cf. e.g. (Rapp 1997, 1998), von Stechow (1998), Anagnostopoulou (2003), Embick (2004), Alexiadou & Anagnostopoulou (2007). But cf. Maienborn (2007) for arguments against accounting for the data (i)-(iii) by phrasal adjectivization and an alternative solution that assumes only lexical adjectivization of the verbal participle even in the case of (i)-(iii).

⁸ Note incidentally that the attributive use of the participle isn't a really reliable diagnostic for adjectivehood, at least in German. Attributive participles still have typical verbal properties and are less restricted than adjectival passives. For instance, *die gestreichelte Katze* ('the petted cat') or *die gewusste Antwort* ('the known answer') are completely regular expressions that do not require any licensing context; cf. the discussion of (4) – (6). See Wunderlich (1997), Rapp (2001) for two proposals to analyze attributive participles as "mixed categories" with both verbal and adjectival properties.

- (15) a. Die Milch war verschüttet und ...
 b. Die Milch wurde verschüttet und ...
The milk was spilled and ...
- (16) a. Die Milch war sauer und ...
The milk was sour and ...
 b. Die Milch wurde sauer und ...
The milk became sour and ...

The results of our self-paced reading study showed indeed significantly longer reading times for the participle after *sein* in the adjectival passive condition (15a) than after the passive auxiliary *werden* in the verbal passive condition (15b), whereas no significant reading time differences were observed for the sentences with adjectives (16a/b). Alternatively, frequency-based explanations for the observed effects could be excluded on the basis of corpus studies. Thus, we concluded that the reading time differences reflect an additional processing effort in the case of adjectival passives due to adjectival conversion; for further details see Stolterfoht, Gese & Maienborn (2008). These psycholinguistic findings fit neatly into the adjectival passive picture developed so far on the basis of corpus data.

3. Adjectival passive formation with unaccusatives: corpus-based evidence

Having provided a sufficiently broad and solid empirical base in support of the claim that adjectival passives are in fact copula sentences with an adjectivized verbal participle, let us now turn to the question which verbs may be adjectivized in this way. More specifically, we want to ask whether the participles of unaccusatives may be converted into adjectives, which then show up in copula structures as well. To this end we will run through the adjectival test set presented above and check how unaccusatives behave with respect to these diagnostics.⁹

ADJECTIVAL NEGATION:

Let us start with the case of *un*-affixation. As the examples (17) – (20) show we do in fact find instances of *un*-affixation with unaccusatives:

⁹ In this and the following section we will only use verbs which are clearly identifiable as unaccusatives, as indicated by the choice of the perfect auxiliary *sein*, and which do not have a transitive variant besides that.

(17) Die Farben sind praktisch unverblasst.

The colours are practically un-faded

‘The colours are practically unfaded.’

(Spiegel-Online <http://www.spiegel.de/wirtschaft/0,1518,481287,00.html>, 4.3.2008)

(18) gefolgt von Spott und Hohn, die aber so ungelungen sind,

followed by mockery and derision which but so un-succeeded are

daß wir sie nächstenliebend verschweigen.

that we them altruistically keep secret

‘... followed by mockery and derision which were such a failure though that we altruistically keep them secret.’ (COSMAS: P94/NOV.39766)

(19) Unter diesem Gesichtspunkt ist der Nous ewig, göttlich, unentstanden,

Under this view is the nous infinite, divine, un-emerged,

unsterblich, unvermischt, leidenslos, reine Energie“.

immortal, unspoiled, afflictionless, pure energy

‘From this point of view the nous is infinite, divine, unemerged, immortal, unadulterated, unsuffering, pure energy.’

(Hirschberger, Johannes, *Geschichte der Philosophie*, Bd. 1, Freiburg: 1948: 9027)

(20) Wir sind armer denn die armen Tiere, die ihres Todes enden, wenn auch blind,

We are poorer than the poor animals which their deaths end, if also blind

weil wir noch alle ungestorben sind.

because we still all un-died are

‘We are poorer than the poor animals, who at least end with their death, albeit blindly; for we go on afterwards, still not dead.’

(Rainer Maria Rilke, *Das Stundenbuch*, translation by Stevie Krayer)

Examples of this kind are admittedly quite rare. Nevertheless, existing exemplars don’t have any flavor of ungrammaticality or deviance but follow the regular formation and interpretation pattern. So we may safely conclude that there are at least some unaccusatives whose participle may (under certain circumstances; cf. §4) be converted into an adjective which in turn may be used predicatively together with the copula *sein*.

ADJECTIVAL GRADATION:

The same picture emerges with respect to adjectival gradation. Once again we find occasional but well-formed instances of comparative or superlative morphology with unaccusatives; cf. (21) – (24).

- (21) Manchmal versinken Länder ja wirklich. Und wenn sie weg sind, schmelzen sie mit der
Sometimes sink countries yes really And when they gone are fuse they with the
Guten Alten Zeit zusammen, werden umso schöner, je verschwundener sie sind
good old time together get so-much more beautiful the disappeared-COMP they are
‘Countries do sink sometimes. And when they are gone, they melt together with the
good old times, and become the more beautiful the more vanished they are.’

(COSMAS R98/DEZ.98388)

- (22) Der Dom ist verfallener, denn je.
The cathedral is decayed-COMP than ever

‘The cathedral is more decayed than ever.’

(COSMAS N92/DEZ.45715)

- (23) Die im Spätsommer zu entfernenden Triebe sind gut an den Überresten des
Fruchtbehangs zu erkennen. Außerdem sind sie deutlich verwelkter als die
Moreover are they noticeably fade-COMP than the
saftig grünen Triebe, die fürs nächste Jahr natürlich stehen bleiben.

juicily green sprouts that for next year naturally remain.

‘You can identify the sprouts which you have to cut off in late summer by the fruit left
overs. Moreover, they are noticeably more faded than the juicily green sprouts which
must naturally remain for next year.’

(http://www.wdr5.de/service/service_umwelt/244606.phtml)

- (24) Am gelungensten wohl ist eine Sciencefiction von Chris Niemeyer.

The succeeded-COMP perhaps is a science fiction by C. Niemeyer

‘The most succesful one is perhaps a science fiction by C. Niemeyer.’

(COSMAS E99/JUL.18332)

COORDINATION WITH GENUINE ADJECTIVES:

Sentences (25) – (28) show copula structures which contain unaccusatives that show up as a conjunct within a predicative phrase.

- (25) Infarktpatientinnen, die vereinsamt und besonders depressiv sind, haben ein hohes
Infarct-patients who growed-lonely and especially depressive are have a high

Risiko für eine zweite Attacke.

risk for a second attack

‘Infarct patients that are lonely and particularly depressive have a high risk of a second attack.’
(COSMAS O98/AUG.82091)

(26) Im Winter war er [der See] zugefroren und sehr beliebt zum Schlittschuhlaufen.

In-the winter was it [the lake] up-frozen and very popular for ice skating.

‘In winter the lake was frozen over and very popular for ice skating.’

(COSMAS A00/AUG.52616)

(27) Die Mehrzahl ist, so Holm, erwerbslos, abgewandert oder in Vorruhestand.

The majority is, [...] unemployed, migrated or in early retirement.

‘According to Holm most of them are unemployed, emigrated or in early retirement.’

(TIGER s619)

(28) Es klingt unseren, den naiven Anthropomorphismen entwöhnten Ohren einigermaßen

It sounds to our the naïve anthropomorphisms weaned ears somewhat

anstößig, wenn wir von Gott sagen, dass er krank, verreist oder unfähig sei.

offensive if we about god say that he ill, gone-on-a-trip or unable be

‘In our ears weaned off the naïve anthropomorphisms it sounds offensive if we say that God is ill, gone away or incapable.’

(<http://www.dober.de/religionskritik/soelle.html>)

If the participles of the unaccusative verbs *vereinsamen*, *zufrieren*, *abwandern* and *verreisen* in (25) – (28) had retained their original verbal status the respective sentences should be strongly deviant, which isn’t the case. If (25) – (28) were instances of crosscategorical coordination with the finite form of *sein* ‘to be’ simultaneously being a perfect tense auxiliary and a copula this should lead to a highly marked structure. Sentences (29) and (30) exemplify such cases of crosscategorical coordination, in which a homonymous word receives two readings at the same time. In (29) *haben* ‘to have’ is used both as a full verb and a perfect auxiliary. In (30) *sein* ‘to be’ is first interpreted as an identificational copula and then needs to be reanalyzed as a predicational copula.

(29) *Peter hat Hunger und gekocht.

Peter has hunger and cooked

- (30) *Wir sind Michael, Sascha und weg
We are Michael, Sascha and away

(SWR3 Morning Show, Hartung-Schaidhammer p.c.)

As (30) shows, even a coordination that only requires a minor shift between two copula variants leads to a clear grammatical defect. On the other side, no such deviance is observed in (31), where an NP is coordinated with an AP and a PP. Since these phrases are all used predicatively there is no need for any reanalysis; *sein* may consistently be interpreted as a predicational copula here – hence the well-formedness of (31).

- (31) Peter ist Banker, sehr fleißig und aus guter Familie.
Peter is banker hard-working and from good family
 ‘Peter is a banker, hard-working and from a good family.’

These observations concerning (29) – (31) strongly suggest that no crosscategorical coordination is at work in the case of our unaccusatives in (25) – (28). We may safely conclude that they do not show up as perfect tense verb forms here – which would require a reanalysis of *sein* – but were converted into adjectives, which are then freely conjoinable with other APs and PPs to form complex predicative phrases.

ADJECTIVAL WORD FORMATION:

Participles of unaccusatives also take part in the adjectival word formation process discussed in §2. Sentences (32) – (35) show participial compounds with nouns or adverbs as non-heads. As we saw in §2 this requires that the respective participles *gereift*, *verstaubt*, *erkrankt*, *gereist* be converted into adjectives first. That is, (32) – (35) are regular copula sentences whose predicate consists of an adjectivized unaccusative.

- (32) So würde z.B. eine Treibhaustomate den Ansprüchen nicht genügen:

So would e.g. a green-house-tomato the requirements not fulfill
sonnengereift muss sie sein.
sun-ripened must she be

‘So a green house tomato for instance would not fulfill the requirements: it must be sun-ripened.’

(COSMAS A99/AUG.57731)

- (33) Mehlverstaubt, prospektbeladen und um einige esoterische Anschauungen reicher,
flour-dusted, leaflets-laden and by some esoteric views richer

begannen sich die Mühlräder in unseren Köpfen zu drehen.

began REFL the mill-wheels in our heads to turn

‘Dusted with flour, laden with leaflets and richer of some esoteric views, the mill wheels in our heads began to turn.’¹⁰ (COSMAS X96/SEP.21343)

(34) Poiger und Cerny sind grippeerkrankt.

Poiger and Cerny are flu-sickened

‘Poiger and Cerny are sick with the flu.’ (COSMAS O95/MAR.22600)

(35) Der Dichter Federico Garcia Lorca war weltoffen und vielgereist

The poet Federico Garcia Lorca was cosmopolitan and a-lot-travelled

‘The poet Federico Garcia Lorca was cosmopolitan and well-travelled.’

(COSMAS P96/AUS.30594)

So far we have provided ample corpus-based evidence that the ability to build adjectival passives is not limited to (some subclass of) transitive verbs but is also shared by at least some unaccusatives. Our results show that adjectival passives are to be considered as being independent from verbal passives in several respects: First, they definitely do not belong to the passive paradigm but are specific instances of adjectival copula constructions. And, second, adjectival passive formation is not limited to verbs that build passive forms. On this perspective, the term “adjectival passive” obviously is a misnomer, but since the term is well-established in the literature, we will continue to use it in the remainder of this article.

Having established that unaccusatives have the potential to build adjectival passives we will turn next to analyzing their behavior wrt. the adjectival passive formation in more detail. In particular we are interested in the question whether adjectival passives based on unaccusative verbs are to be considered a somehow marginal case or whether they just follow the regular pattern. In the next section we will present the results of a psycholinguistic study that shed some light on the exact linguistic conditions that govern the adjectival passive formation for unaccusatives.

¹⁰ Note that *verstauben*, unlike its English translation *to dust* given in (34), has no transitive variant but only shows up as unaccusative verb. (The transitive counterpart would be *bestäuben*.)

4. Adjectival passive formation with unaccusatives: psycholinguistic evidence

4.1 Combination with temporal adverbials

So far our investigations suggest that a combination of *sein* with a participle of an unaccusative verb as in (36) is ambiguous. It can be interpreted either as a present perfect sentence or as an adjectival passive. Temporal adverbials may help disentangle the two readings. A deictic *vor*-adverbial like *vor zwei Wochen* ('two weeks ago') in (36a), which serves to locate the verbal referent before the utterance time, is incompatible with a present tense adjectival passive but only combines with the present perfect variant. A durational *seit*-adverbial like *seit zwei Wochen* (roughly 'since two weeks ago') in (36b), on the other hand, indicates the left temporal boundary of a homogeneous situation (i.e. a process or state) and expresses that the time interval for which the situation holds extends over the relevant reference time (which for our purposes may be identified with the utterance time). A *seit*-adverbial thus combines with the adjectival passive variant of (36).

- (36) Otto ist verreist. ambiguous
Otto is gone-on-a-trip
- a. Otto ist vor zwei Wochen verreist. present perfect
Otto is before two weeks gone-on-a-trip
'Otto went on a trip two weeks ago.'
- b. Otto ist seit zwei Wochen verreist.¹¹ adjectival passive
Otto is since two weeks gone-on-a-trip
'Otto is gone on a trip since two weeks ago.'
'Otto has been on a trip for two weeks by now.'

In the following we will use the distributional difference wrt. *vor*- and *seit*-adverbials as a suitable diagnostic to tease apart adjectival passives from present perfect sentences and as a useful tool to control a reader's preference for an adjectival passive's stative reading or a present perfect's eventive reading of a combination of *sein* plus unaccusative participle.¹²

¹¹ The German *seit*-adverbial has no direct English counterpart. A sentence like (36b) expresses that the state of Otto being away on a trip holds since two weeks going back from the utterance time and may continue to hold in the future. In the following we will approximate the meaning of *seit*-adverbials by translating them with "since ... ago"; see Musan (2002, 2003), von Stechow (2002) for discussions of the semantics of German *seit*-adverbials.

¹² There is an ongoing debate in the literature on the German perfect whether *sein*- and *haben*-perfects have several different readings (including a resultative, i.e. stative, reading; e.g. Löbner 2002, von Stechow 2002) or whether the relevant facts can be accounted for with a single reading; e.g. Klein (1999), Musan (2001, 2002, 2003). We do not want to delve into this notoriously intricate issue here. Given the large amount of independent evidence presented in §3 showing that unaccusatives may be converted into adjectives which then can be

Up to now we have demonstrated that unaccusatives do occasionally show up as adjectival passives. The question to be answered next is whether the possibility of building adjectival passives is open to all unaccusative verbs or only to a subset of them. Note that whereas a verb like *verreisen* ‘to go on a trip’ combines naturally with both *vor-* und *seit-* adverbials (cf. (36)), there are other unaccusative verbs that sound quite odd in combination with a *seit-* adverbial; cf. e.g. (37) and (38).

(37) a. Der Ballon ist vor zwei Minuten geplatzt.

The balloon is before two minutes burst

‘The balloon burst two minutes ago.’

b. ??Der Ballon ist seit zwei Minuten geplatzt.

The balloon is since two minutes burst

‘The balloon is burst since two minutes ago.’

(38) a. Die Skulptur ist vor zwei Monaten entstanden.

The sculpture is before two month come about

‘The sculpture came into existence two month ago.’

b. ??Die Skulptur ist seit zwei Monaten entstanden.

The sculpture is since two month come about

‘The sculpture came into existence since two months ago.’

This suggests that unaccusatives like *platzen* (‘to burst’) or *entstehen* (‘to come about’) are excluded from the adjectival passive formation.

4.2 Acceptability rating study

In order to investigate whether the introspective judgments in (36) – (38) can be empirically substantiated and to what extent unaccusatives take part in the adjectival passive formation we conducted an acceptability rating study. Based on our corpus findings we identified two sets of unaccusatives. The first group, “unaccusative1”, comprised participles of unaccusative base verbs that occurred in our corpora in combination with *seit-* adverbials, the second group, “unaccusative2”, consisted of unaccusative participles that did not show up with *seit-*

combined with the copula *sein* to build an adjectival passive we take cases like (36b) to be instances of adjectival passives.

adverbials in the corpora. The respective verbs of the two groups of unaccusatives are given in (39) and (40).¹³

(39) unaccusative1:

wachsen ('to grow'), welken ('to fade'), verreisen ('to go on a trip'), verschwinden ('to vanish'), ablaufen ('to expire'), verstreichen ('to elapse'), versinken ('to sink'), erlöschen ('to extinguish'), anlaufen ('to start'), schwellen ('to swell'), wegfallen ('to drop out'), vergehen ('to pass by'), abwandern ('to migrate'), entbrennen ('to break out'), weichen ('to give way'), einkehren ('to stop for a bite to eat'), verstummen ('to fall silent'), abreißen ('to break off'), steigen ('to rise'), sinken ('to fall')

(40) unaccusative2:

entstehen ('to arise'), erscheinen ('to appear'), kommen ('to come'), fliehen ('to run away'), zusammentreffen ('to meet'), fallen ('to tumble'), umkommen ('to perish'), platzen ('to burst'), sitzenbleiben ('to remain seated'), hochspringen ('to jump up'), explodieren ('to explode'), geschehen ('to happen'), auftauchen ('to show up'), einsteigen ('to board'), gelingen ('to succeed'), anreisen ('to arrive'), eintreten ('to enter'), erfolgen ('to take place'), bekannt werden ('to emerge'), passieren ('to come about')

While the corpus data support the availability of an adjectival passive reading besides the *sein*-perfect for the verbs of the unaccusative1 group, for the members of the unaccusative2 group such an option at least could not be attested by the corpora. With our acceptability rating study we wanted to find out whether the participles of the unaccusative2 group really behave differently from the unaccusative1 group wrt. adjectival passive formation or whether the lack of *seit*-adverbials is just an accidental corpus gap. More specifically, we tested the following hypotheses: If there is a (sub)set of unaccusative verbs (presumably those of the unaccusative1 group) that form fully acceptable adjectival passives, we should find no difference in acceptability ratings for *seit*- and *vor*-adverbials for them. In the case of the unaccusative2 group, on the other hand, we should see clear rating differences between *vor*- and *seit*-adverbials.

¹³ Note that all verbs in (39) and (40) build the present tense with the auxiliary *sein* thus qualifying as unaccusatives.

METHOD

Participants

40 undergraduate students of the University of Tübingen participated for course credit. All were native speakers of German.

Experimental material

The materials manipulated the type of the temporal adverbial (*seit-* or *vor-*adverbial) and the type of unaccusative (unaccusative1 vs. unaccusative2); see examples (41) and (42).

(41) unaccusative1:

- a. Meine Nachbarin ist seit zwei Wochen verreist.

My neighbor is since two weeks gone-on-a-trip
'My neighbor is gone on a trip since two weeks ago.'

- b. Meine Nachbarin ist vor zwei Wochen verreist.

My neighbor is before two weeks gone-on-a-trip
'My neighbor went on a trip two weeks ago.'

(42) unaccusative2:

- a. ??Die Skulptur ist seit zwei Monaten entstanden.

The sculpture is since two month come about
'The sculpture came into existence since two months ago.'

- b. Die Skulptur ist vor zwei Monaten entstanden.

The sculpture is before two month come about
'The sculpture came into existence two month ago.'

All in all, we had 40 pairs of sentences with unaccusative verbs, 20 items of each group. The full set of experimental sentences is provided in the appendix. The 40 experimental items were combined with 40 filler sentences. Two presentation lists were created and randomized in parallel two times. Each participant saw only one version (*seit* or *vor*) of each of the sentences, counterbalanced across the two groups of sentences.

Procedure

The questionnaires were distributed to students in an introductory linguistics class. The participants were told to read the sentences carefully and to rate their acceptability on a scale from 1 to 6. If the sentence was easy to understand, if it made sense and seemed to be good,

natural German, then they should rate this sentence with ‘1’. If the sentence didn’t make sense to them or they thought it’s a bad German sentence, then they should rate it with ‘6’.

RESULTS

The results are presented in Table 1.

Temporal adverbial	Verb type	
	<u>unaccusative1</u>	<u>unaccusative2</u>
<i>seit</i> -adverbial	2.0	4.3
<i>vor</i> -adverbial	1.9	1.4

Table 1. Mean ratings (scale 1-6; 1 = good/natural, 6 = bad) for the four experimental conditions.

A repeated measures ANOVA revealed a highly significant main effect of adverb type ($F(1,39) = 282.29, p < .001$; $F(1,19) = 159.07, p < .001$). Sentences with the *vor*-adverbial were rated better than sentences with *seit* (1.6 vs. 3.3). This effect is due to the sentences of the “unaccusative2” condition.

The ratings also showed a highly significant effect of verb type ($F(1,39) = 90.28, p < .001$; $F(1,19) = 30.30, p < .001$). “unaccusative1” sentences were rated better than “unaccusative2” sentences (1.9 vs. 2.8). Again, this is due to the sentences of the “unaccusative2” condition with the *seit*-adverbial.

Additionally, we found a highly significant interaction of adverb type and verb type ($F(1,39) = 256.18, p < .001$; $F(1,19) = 69.29, p < .001$). Sentences with *seit* were rated much better in sentences with “unaccusative1” verbs (see Table 1). Since the interaction was significant, we performed more focused tests. We compared the different adverbials separately for the two verb types. The comparison with “unaccusative1” yielded no significant effect of adverb ($F(1,39) = 1.99, p = .17$; $F(1,19) = .12, p = .73$). The comparison with “unaccusative2” revealed a highly significant effect of adverb ($F(1,39) = 374.14, p < .001$; $F(1,19) = 291.74, p < .001$).

For the comparison of rating differences *seit* – *vor* for the two verb types (see Table 2), a highly significant effect of verb type was found ($F(1,39) = 256.18, p < .001$; $F(1,19) = 69.29, p < .001$).

Difference	Verb type	
	<u>unaccusative1</u>	<u>unaccusative2</u>
<i>seit – vor</i>	.13	2.9

Table 2. Rating differences (*seit - vor*) for the two verb types.

DISCUSSION

The goal of our rating study was to find out whether and to what extent unaccusative verbs can form fully acceptable adjectival passives. The results of our rating study showed a highly significant effect of the type of unaccusative verb. The rating difference between sentences like (41a-b) was smaller than for sentences like (42a-b). Our results only showed a significant effect of the type of adverbial for sentences like (42). Sentences of the condition “unaccusative1” like in (41) did not exhibit a significant difference between the two types of adverbials. They are judged as fully acceptable both with *seit*- and with *vor*-adverbial. These results confirm our initial hypotheses and they provide preliminary evidence for the existence of some kind of split dividing up the class of unaccusative verbs into two sets, a first one, the unaccusative1 group in (39), whose members form readily adjectival passives besides the present perfect, and a second one, the unaccusative2 group in (40), whose members seem to block the adjectival passive formation.

4.3 Towards a pragmatic explanation of the judgment data

What could be the reason behind this split within the class of unaccusatives? What are the characteristics of the subgroup of unaccusatives that readily form adjectival passives, and what differentiates them from those that do not? If we look at the verbs that exhibit the *sein*-perfect / adjectival passive ambiguity as indicated by the equal acceptability of *vor*- and *seit*-adverbials and compare them to those that are judged as bad in combination with *seit*-adverbials, we are confronted with two fairly heterogeneous sets of verbs; cf. the lists in (39) and (40) repeated below as (43) and (44).

(43) unaccusative1:

wachsen (‘to grow’), welken (‘to fade’), verreisen (‘to go on a trip’), verschwinden (‘to vanish’), ablaufen (‘to expire’), verstreichen (‘to elapse’), versinken (‘to sink’), erlöschen (‘to extinguish’), anlaufen (‘to start’), schwellen (‘to swell’), wegfallen (‘to drop out’), vergehen (‘to pass by’), abwandern (‘to migrate’), entbrennen (‘to break out’), weichen (‘to give way’), einkehren (‘to stop for a bite to eat’), verstummen (‘to fall silent’), abreißen (‘to break off’), steigen (‘to rise’), sinken (‘to fall’)

(44) unaccusative2:

entstehen ('to arise'), erscheinen ('to appear'), kommen ('to come'), fliehen ('to run away'), zusammentreffen ('to meet'), fallen ('to tumble'), umkommen ('to perish'), platzen ('to burst'), sitzenbleiben ('to remain seated'), hochspringen ('to jump up'), explodieren ('to explode'), geschehen ('to happen'), auftauchen ('to show up'), einsteigen ('to board'), gelingen ('to succeed'), anreisen ('to arrive'), eintreten ('to enter'), erfolgen ('to take place'), bekannt werden ('to emerge'), passieren ('to come about')

Note, e.g., that verbs with resultative prefixes or particles like *er-*, *auf-*, *um-*, *an-*, *ein-* can be found in both groups. That is, having a resultative meaning alone apparently does not suffice to combine with *seit* and, thus, to qualify for building readily an adjectival passive. Actually, there seem to be no clearly detectable semantic constraints determining group membership. Note furthermore that our data disconfirm the few existing generalizations that can be found in the literature. Nogami (2000: 98) proposes that the relevant subclass of unaccusatives that take part in the adjectival passive formation are incremental theme verbs like *zufrieren* ('to freeze up'); von Stechow (1998: 27) characterizes the relevant class as non-causative achievements, e.g. *einschlafen* ('to fall asleep') instead. Neither generalization turns out to be correct. Nogami can't account for the data in (45). These do not belong to the class of incremental theme verbs, yet they are within the unaccusative1 group and were judged equally good with *vor-* and with *seit-*adverbials in our rating study.

(45) a. Der Kontakt ist seit / vor Jahren abgerissen.

The contact is since / before years severed

b. Meine Nachbarin ist seit / vor zwei Wochen verreist.

My neighbour is since / before zwei weeks gone-on-a-trip

c. Der Verfassungsstreit ist seit / vor einem Jahr entbrannt.

The constitutional debate is since / before one year broken out

The data in (46) and (47) are problematic for von Stechow's generalization. The sentences in (46) express non-causative accomplishments, which shouldn't be good with *seit*-adverbials according to von Stechow, yet they belong to the unaccusative1 group and received good ratings. The sentences in (47), on the other hand, express non-causative achievements but they were nevertheless judged as bad in combination with *seit*-adverbials.

- (46) a. Die Leuchtreklame ist seit / vor Monaten erloschen.
The neon signs are since / before months extinguished
- b. Die Kritik ist seit / vor ein paar Tagen verstummt.
The criticism is since / before a few days fallen-silent
- (47) a. Der Junge ist ??seit / vor 10 Minuten gefallen.
The boy is since / before 10 minutes fallen
- b. Der Luftballon ist ??seit / vor 10 Minuten geplatzt.
The balloon is since / before 10 minutes burst

We conclude that there is no lexical and/or grammatical distinction at work here but the crucial factors are rather of pragmatic nature. More specifically, the presence or absence of the adjectival passive construction turns out to be highly dependent on the context as given by the surrounding sentential material as well as by the further discourse. Take for instance *platzen* ('to burst'). Without any context information, sentence (48a) is not acceptable. This might suggest that the unaccusative *platzen* does not form an adjectival passive. Yet, if we change the subject of the sentence as in (48b) or embed the same sentence in a specific context which makes the resulting state of the balloon's bursting relevant in a certain sense (see below) as in (48c), the sentence's acceptability increases considerably.

- (48) a. ??Der Luftballon ist seit fünf Minuten geplatzt.
The air balloon is since five minutes burst
 'The balloon is burst since five minutes ago.'
- b. Die Aktienblase ist seit zwei Wochen geplatzt.
The stock bubble is since two weeks burst
 'The stock bubble is burst since two weeks ago.'
- c. This year the opening of the festival will be signaled by a bursting balloon. A visitor asks: "Has the festival already been opened?"
 - Ja, der Ballon ist seit fünf Minuten geplatzt.
Yes the balloon is since five minutes burst
 'Yes the balloon is burst since five minutes ago.'

This suggests that unaccusatives are subject to the same kind of contextual variance as observed at the beginning for activity verbs and statives; cf. the discussion in §1. In two further rating studies we could substantiate this claim empirically by showing that the

acceptability of those items that got bad ratings in our experiment reported on here, i.e. those of the unaccusative2 group, increases significantly if the adjectivized participle expresses a relevant property either by choosing a suitable alternative subject expression (48b) or by manipulating the extrasentential context (48c). In one of these rating studies, sentences with participles of the unaccusative2 group were embedded in either a neutral context or in a context that made the resulting state more salient. In a second study, sentences were presented without context but with two different sorts of subjects (concrete vs. figurative). Both kinds of pragmatic support – via an appropriate context or via a suitable subject – yielded the same effect: The ratings for adjectival passives formed on the basis of the unaccusative2 group increased significantly; cf. Gese, Stolterfoht & Maienborn (2008) for details. This supports our claim that the question of which verbs do in fact enter the adjectival passive formation is not so much an issue of the grammar but rather of pragmatics.

In view of our results concerning unaccusatives, we conclude that the adjectival passive formation is not grammatically constrained and controlled in a rigorous manner. There are only very few true grammatical constraints ruling out the formation of adjectival passives. This is the case, e.g., with weather verbs, reflexive verbs and certain stative verbs like *kosten* ‘to cost’; cf. (49).

- | | | |
|---------|---|--|
| (49) a. | Es regnet.
<i>It rains</i>
‘It is raining.’ | *Es ist geregnet.
<i>It is rained</i> |
| b. | Anna freut sich.
<i>Anna rejoice REFL</i>
‘Anna is happy.’ | *Anna ist gefreut
<i>Anna is rejoiced</i> |
| c. | Das Buch kostet 10 €.
<i>The book costs 10 €</i>
‘The book costs 10 euros.’ | *10 € sind gekostet.
<i>10 € are cost</i> |

The sentences in (49) are really ungrammatical. No context will ever make them acceptable. But apart from these clear cases the grammar doesn’t impose hard restrictions on the adjectival passive formation. The option of converting a verbal participle into an adjectival participle via \emptyset -affixation which may then be used predicatively in combination with the copula is systematically available to any verb apart from the type illustrated in (49).¹⁴ In

¹⁴ Note that German also allows so-called impersonal adjectival passives of unergative verbs; cf. (i).

particular, we conclude that the adjectival passive formation is open to unaccusatives from both the unaccusative1 and the unaccusative2 group. Rather than being grammatically controlled, whether or not an adjectival passive is admissible depends largely on the context.

The task of legitimating and interpreting adjectival passives in context is basically the task of pragmatics. Against this background our findings concerning the different behavior of the two groups of unaccusatives under constant contextual conditions shed some light on the relevant pragmatic conditions which trigger and support the formation and interpretation of adjectival passives. According to Maienborn (2007) adjectival passives – being instances of copula sentences – assign a pragmatically salient *ad hoc* property to the subject referent. This *ad hoc* property is conceived of as resulting from the verbal event. That is, while a standard copula sentence with a predicative adjective assigns a preexisting property to the subject referent, which has a fixed place in the subject referent's property space (see Maienborn (2005) for the semantics of the copula), adjectival passives are a grammatically supplied means of creating *ad hoc* new, event-based properties, whose exact import, and therefore the place they occupy in the subject referent's property space, is more or less shaped by the context and by our contextually available world knowledge. Certain verbs such as resultatives, which already specify a resultant state, from which a pertinent property may be derived, will need less (or virtually no) pragmatic effort to license the adjectival passive formation. This is the case, e.g., for *geschlossen sein* ('to be closed') or *abgerissen sein* ('to be broken off') to take one of our unaccusative1 verbs. Other verbs will need more contextual support to derive a suitable *ad hoc* property. Take, e.g., *explodieren* ('to explode') as an exponent of our unaccusative2 group. Without any context we can't conceive of any distinctive property that could be the result of something having exploded. Consequently, a sentence like (50a) sounds odd out of the blue. Yet, taking the oil price as subject referent as in (50b) turns the adjectival passive into a fully acceptable sentence since our world knowledge tells us that if the oil price explodes it is high afterwards, and, thus, we are able to derive a relevant property for the adjectival passive. This provides the necessary pragmatic legitimation for the adjectival passive formation.

(50) a. ??Die Bombe ist seit 10 Minuten explodiert.

The bomb is since 10 minutes exploded

-
- (i) Nun ist genug gelacht / geschlafen / gearbeitet.
Now (it) is enough laughed / slept / worked.

Impersonal adjectival passives are an intricate topic on its own which we cannot discuss here. For our present purposes it is only relevant to stress that adjectival passive formation is really a broadly available grammatical option for any verb apart from the (49) type, at least in German.

b. Der Ölpreis ist seit zwei Monaten explodiert.

The oil price is since two months exploded

Note that Kratzer's "job is done" reading by which the adjectival passive of, e.g., an activity verb like *streicheln* ('to pet') can be "rescued" (cf. (4') repeated in (51) below) turns out to be a specific instance of this pragmatic pattern.

(51) Anna hat ihre Nachbarspflichten erfüllt: Der Briefkasten ist geleert, die Blumen sind

Anna has her neighbor-duties fulfilled: The mail-box is emptied the flowers are

gegossen und die Katze ist gestreichelt.

watered and the cat is petted

'Anna has done her neighborly duties: the mailbox is emptied, the flowers are watered and the cat is petted.'

The particular context given in (51) supports an *ad hoc* categorization of cats into two classes, cats that already have been petted and cats that still need to be petted. With the adjectival passive sentence *The cat is petted* the subject referent is assigned the property of belonging to the first category then.¹⁵

In sum, while the pragmatic effort needed to derive a relevant *ad hoc* property from the subject referent having participated in the event expressed by the base verb may vary considerably, sometimes being completely predictable from the verb's lexical semantics and sometimes relying heavily on context and world knowledge, the general pattern of forming and interpreting adjectival passives is the same for all these cases.

5. Conclusion

In this paper we presented corpus data as well as psycholinguistic data arguing that combinations of *sein* with the participle of an unaccusative verb have to be analyzed as ambiguous between a perfect reading (with *sein* ('be') as auxiliary) and an adjectival passive reading (with *sein* as copula). The first part of the paper highlighted the adjectival character of the adjectival passive. Several diagnostics demonstrated unequivocally the adjectival status of

¹⁵ We won't discuss the two readings of adjectival passives, i.e. Kratzer's (2000) resultant state and target state reading, here, but cf. Maienborn (2007, 2008) for a semantic account that takes these readings as being contextual specifications of a semantically underspecified adjectival passive meaning. That is, we assume that the semantics of adjectival passives is given by a single adjectival \emptyset -affix (cf. (8b)), which is semantically underspecified in a characteristic way such that there are two potential contextual specifications corresponding to the two readings.

the participle involved. In the second part, a rating study provided preliminary evidence for some kind of split dividing up the class of unaccusative verbs into two groups, a first one that readily forms adjectival passives besides the *sein*-perfect, and a second one that seems to block the adjectival passive formation. While adjectival passives and the *sein*-perfect receive equally good ratings in the case of the first group, the second group shows clear rating differences. Yet, our further investigations showed that the poor ratings for the second group could be improved considerably given appropriate contextual conditions. We concluded that it would be misleading if some (or even all) unaccusatives were excluded from the adjectival passive formation. Our studies rather suggest that the context variance of adjectival passives that occasionally has been observed in connection with, e.g., activity verbs is a characteristic feature of this construction and should be accounted for systematically. In the final part we sketched such an account proposing that adjectival passives are a means of creating a potentially new *ad hoc* property resulting from the verbal event which may rely to varying extents on further contextual support.

Our case study of unaccusatives argues for a new perspective on the formation of adjectival passives. They are less grammatically controlled than generally assumed in at least two respects. First, not only transitive verbs but also unaccusatives may build adjectival passives. And, second, whether or not adjectival passive formation is possible is largely a matter of pragmatics. This then paves the way for a more comprehensive account of the semantics and pragmatics of adjectival passives.

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APPENDIX

MATERIALS OF THE RATING STUDY

Unaccusative 1

Das Vertrauen ist seit/vor drei Monaten gewachsen.
The trust is since/before three months grown

Die Blumen sind seit/vor Tagen verwelkt.
The flowers are since/before days wilted

Meine Nachbarin ist seit/vor zwei Wochen verreist.
My neighbour is since/before two weeks gone-on-a-trip

Das Gemälde ist seit/vor zwei Jahren verschwunden.
The painting is since/before two years disappeared

Das Haltbarkeitsdatum ist seit/vor vier Tagen abgelaufen.
The date-of-expiry is since/before four days expired

Die Frist ist seit/vor zwei Tagen verstrichen.
The deadline is since/before two days elapsed

Atlantis ist seit/vor Urzeiten versunken.
Atlantis is since/before ages sunk

Die Leuchtreklame ist seit/vor Monaten erloschen.
The neon signs are since/before months gone out

Die Produktion ist seit/vor drei Monaten angelaufen.
The production is since/before three months started

Das Bein ist seit/vor zwei Tagen geschwollen.
The leg is since/before two days swollen

Die Subventionen sind seit/vor einem halben Jahr weggefallen.
The subsidy is since/before half a year ended

Die guten Zeiten sind seit/vor Jahren vergangen.
The good times are since/before years elapsed

Die Investoren sind seit/vor einigen Monaten abgewandert.
The investors are since/before some months wandered off

Der Verfassungsverstreit ist seit/vor einem Jahr entbrannt.

The constitutional debate is since/before a year broken out

Die Nervosität ist seit/vor drei Minuten gewichen.

The nervousness is since/before three minutes died down

Die müden Wanderer sind seit/vor einigen Stunden eingekehrt.

The weary hikers are since/before some hours stopped-for-a-bite-to-eat

Die Kritik ist seit/vor ein paar Tagen verstummt.

The critique is since/before a few days fallen silent

Der Kontakt ist seit/vor Jahren abgerissen.

The contact is since/before years broken off

Die Terrorgefahr ist seit/vor dem Wochenende gestiegen.

The threat of terror is since/before the weekend augmented

Die Preise sind seit/vor drei Tagen gesunken.

The prices are since/before three days gone down

Unaccusative 2

Die Skulptur ist seit/vor Monaten entstanden.

The sculpture is since/before months come about

Der Gast ist seit/vor zwei Tagen erschienen.

The guest is since/before two days turned up

Der Besuch ist seit/vor einer Woche gekommen.

The visitor is since/before one week come

Der Häftling ist seit/vor einer Woche geflohen.

The prisoner is since/before one week fled

Die Kommission ist seit/vor Stunden zusammengetroffen.

The committee is since/before hours come together

Der Junge ist seit/vor zehn Minuten gefallen.

The boy is since/before ten minutes fallen

Der Soldat ist seit/vor zwei Monaten umgekommen.

The soldier is since/before two months died

Der Luftballon ist seit/vor zwei Minuten geplatzt.

The air balloon is since/before two minutes burst

Der Schüler ist seit/vor einem Jahr sitzengeblieben.

The pupil is since/before one year remained-seated (i.e. had to repeat classes)

Der Toast ist seit/vor einer Minute hochgesprungen.

The toast is since/before one minute jumped up

Die Bombe ist seit/vor zwanzig Minuten explodiert.

The bomb is since/before twenty minutes exploded

Das Verbrechen ist seit/vor zwei Jahren geschehen.

The crime is since/before two years occurred

Der Vermisste ist seit/vor einer Woche aufgetaucht.

The missed person is since/before one week appeared

Der Fahrgast ist seit/vor zwei Stunden eingestiegen.

The passenger is since/before two hours boarded

Der Coup ist seit/vor Monaten gelungen.

The coup is since/before months succeeded

Der Feriengast ist seit/vor drei Stunden angereist.

The tourist is since/before three hours arrived

Der Herzstillstand ist seit/vor fünf Minuten eingetreten.

Cardiac arrest is since/before five minutes occurred

Der Haftbefehl ist seit/vor zwei Tagen erfolgt.

The arrest warrant is since/before two days issued

Der Skandal ist seit/vor fünf Wochen bekanntgeworden.

The affair is since/before five weeks become known

Der Unfall ist seit/vor drei Tagen passiert.

The accident is since/before three days happened