

# The impact of script knowledge on the interpretation of *immer noch* in German adjectival passives

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**Abstract** This paper examines the conditions under which the temporal expression *immer noch* (“still”) is excluded in German adjectival passive sentences. A detailed discussion of the phenomenon is provided, and it is argued that not only the semantics of the involved linguistic expressions, as well as pragmatics in form of arising implicatures, but also background script knowledge must be taken into account to fully understand the combinatorics. A notion of scripts is developed as a finite sequence of frames, where one frame precedes and provides an occasion for the next one. The paper determines a new condition for the exclusion of *immer noch* that up to now went unnoticed. Specifically, it is claimed that adjectival passives denoting the result state of a script-final event cannot be combined with *immer noch* due to conflicting inferences. The proposed integration of linguistic material with background frame and script knowledge is based on the central assumption that event kinds correspond to frames, which opens up a new perspective on the relation between conceptual structure and compositional semantics.

## Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Some theoretical background</b>	<b>4</b>
2.1	Events in adjectival passives . . . . .	4
2.2	The meaning of “ <i>immer noch</i> ” and reversibility . . . . .	7
<b>3</b>	<b>A descriptive view on the critical data</b>	<b>8</b>
3.1	The ‘puzzling exceptions’ . . . . .	8
3.2	Function fulfillment . . . . .	10
3.3	The ‘job-is-done’-reading . . . . .	13
<b>4</b>	<b>An explanation in terms of frames and scripts</b>	<b>14</b>
4.1	Setting the stage: scripts and frames . . . . .	14
4.2	Scripts and adjectival passives with “ <i>immer noch</i> ” . . . . .	20
4.3	Assuming stative frames . . . . .	25
4.4	On ‘job-is-done’ contexts . . . . .	27
<b>5</b>	<b>Conclusion</b>	<b>30</b>

## 1 Introduction

In a seminal paper, Kratzer (2000) proposes that German adjectival passives subdivide into two classes. Every adjectival passive describes a resultant state, but only some in addition describe a target state. Kratzer calls those that describe a target state “target state passives”, the others are called “resultant state passives”. The terminology goes back to Parsons (1990). Being in a resultant state means no more than that the subject referent has participated in an event denoted by the verb underlying the adjective. Being in a target state means that the subject referent has, as a consequence of participating in the event, undergone a certain change of state.

Whether or not an adjectival passive describes a target state can be detected by checking compatibility with *immer noch*: “target state passives [...] describe states that are in principle reversible, hence can be transitory, and this is what the adverbial *immer noch* (‘still’) requires” (Kratzer 2000:2). Consider the following examples from Kratzer; (1) shows target state passives, (2) shows resultant state passives.

- (1) a. *Die Ausfahrt ist immer noch versperrt.*  
 the driveway is still blocked  
 ‘The driveway is still blocked.’
- b. *Die Reifen sind immer noch aufgepumpt.*  
 the tires are still pumped+up  
 ‘The tires are still pumped up.’
- c. *Das Bild ist immer noch gestohlen.*  
 the painting is still stolen  
 ‘The painting is still stolen.’
- (2) a. ??*Das Theorem ist immer noch bewiesen.*  
 the theorem is still proven  
 ?? ‘The theorem is still proven.’
- b. ??*Die Gäste sind immer noch begrüßt.*  
 the guests are still greeted  
 ?? ‘The guests are still greeted.’
- c. ??*Das Bild ist immer noch gemalt.*  
 the painting is still painted  
 ?? ‘The painting is still painted.’

Besides that, Kratzer mentions a second test. Compatibility with ‘für adverbials’, i.e. adverbial phrases with the head *für* (“for”), which measure the temporal extension of the target state, is an unequivocal sign of target state passives, too.

- (3) a. *Die Ausfahrt ist für ein Jahr versperrt.*  
the driveway is for a year blocked  
'The driveway is blocked for a year.'
- b. ??*Das Theorem ist für ein Jahr bewiesen.*  
the theorem is for a year proven  
'The theorem is proven for a year.'
- c. *Das Theorem ist für immer bewiesen.*  
the theorem is for ever proven  
'The theorem is proven forever.'

Unlike the target state passive in (3a), the resultant state passive in (3b) does not accept the explicit assignment of a temporal measure by means of a 'für-adverbial'. (3c) shows that a 'für-adverbial' which states that the reached state will hold not for *some* specified time, but for *all* times is possible with resultant state passives (not noted by Kratzer).

Among the examples that Kratzer counts as resultant state passives we also find the following one:

- (4) *Der Briefkasten ist geleert.*  
the mailbox is emptied  
'The mailbox is emptied.'

Kratzer (2000:9) writes that this example represents a "puzzling exception". It is puzzling because the denoted state of being empty is clearly reversible. Therefore, it should give a target state passive. The two tests deny that, however:

- (5) a. ??*Der Briefkasten ist immer noch geleert.*  
the mailbox is still emptied  
?? 'The mailbox is still emptied.'
- b. ??*Der Briefkasten ist für einen Tag geleert.*  
the mailbox is for one day emptied  
?? 'The mailbox is emptied for one day.'

According to the tests, (4) patterns with resultant state passives. As an additional observation we add that (4) is compatible with an 'all time für-adverbial' (6). The adverbial *für heute* ('for today') expresses that the reached state will hold for all times within the period of today.

- (6) *Der Briefkasten ist für heute geleert.*  
the mailbox is for today emptied  
'The mailbox is emptied for today.'

This observation already suggests the first piece of our solution to Kratzer’s “puzzling cases”: What distinguishes (4) from the other resultant state passives given in (2) is that it describes a state of a kind that comes periodically into being. Note, however, that periodicity alone cannot explain the puzzle. The adjectival passive in (1b) likewise describes a state of a kind that occurs periodically. Unlike (4), however, it does accept *immer noch*. The sentences in (7), also from Kratzer (2000:2), show two more such “periodic resultant states”:

- (7) a. *Die Wäsche ist (??immer noch) getrocknet.*  
 the laundry is still dried  
 ‘The laundry is (??still) dried.’
- b. *Die Töpfe sind (??immer noch) ab gespült.*  
 the pots are still up-washed  
 ‘The pots are (??still) washed up.’

To sum up, this paper addresses the following question, which has already been raised (but left without answer) in Gehrke (2011): Why exactly are examples like (4) bad with *immer noch* despite the fact that the described states are “in principle reversible”?

The paper is structured as follows: In section 2, some theoretical background concerning the meaning of adjectival passives (2.1) and the meaning of *immer noch* (2.2) is laid down. In section 3, the empirical facts are described. Starting from the “puzzling exceptions” mentioned by Kratzer (2000), which are discussed in detail (3.1), a descriptive generalization for the phenomenology of the behaviour of *immer noch* in German adjectival passives is worked out (3.2). The section is closed by a special focus on ‘job-is-done’ readings (3.3). In section 4, an explanation of the data in terms of scripts and frames is given. We will first (4.1) set the stage by introducing the notion of a script in terms of events and frames. Then (4.2), we will give an account of the meaning of adjectival passives against the background of script knowledge. The account is re-cast under the assumption of stative frames as state kinds (4.3), before the possibility of contextually evoked ad hoc scripts is discussed (4.4). The paper ends with some general conclusions in section 5.

## 2 Some theoretical background

### 2.1 Events in adjectival passives

German adjectival passives are a matter of much debate in theoretical linguistics. The (more or less) received view is that they represent cases of copular-predicative constructions (cf. Maienborn 2007a), and we subscribe to that point of view. Accordingly, an adjectival passive expresses that the subject referent has a certain

property at the time of reference. This is tantamount to saying that it denotes a (Kimian) state.<sup>1</sup> Thus, in general, the meaning of an adjectival passive does not differ from the meaning of an ordinary copular-predicative sentence like, for instance, (8):

- (8) a. *Das Fahrrad ist grün.*  
           the bike    is green  
           ‘The bike is green.’  
       b.  $\exists s : s \approx \textit{green}(f) \text{ at } t_n$

In the copular-predicative construction (8), the information on the property which is said to hold for the subject referent is supplied by an ordinary, i.e. lexical adjective. In an adjectival passive, the situation is special because the property is not expressed by an ordinary adjective, but by an adjective which is morphologically derived from a lexical verb. Working in the framework of event semantics (cf. Maienborn 2011), Maienborn (2007a,2009) proposes that the property is based on a Davidsonian event (“event-based”). (9b) shows the semantics that she might assign to sentence (9a).

- (9) a. *Das Fahrrad ist gestohlen.*  
           the bike    is stolen  
           ‘The bike is stolen.’  
       b.  $\exists s \exists e : s \approx Q(f) \text{ at } t_n \wedge \textit{result}(e, s) \wedge \textit{steal}(e)$

Accordingly, the truth of a (present tense) adjectival passive sentence requires that there has been an event describable by the verb, that there is a resultant state of this event, and that the resultant state reifies the relationship of a property  $Q$  holding of the subject referent at the present moment. The exact import of  $Q$  is determined pragmatically.

Maienborn’s analysis captures, among other things, the clear intuition that an event describable by the verb underlying the adjective should have taken place. However, the assumption that adjectival passives would entail the existence of a Davidsonian event has been questioned, on the basis of examples of the following kind (Gehrke 2011, Gese 2011):

- (10) *Die Augen der Igelbabys                   sind noch geschlossen.*  
           the eyes   the hedgehog\_puppies are   still closed  
           ‘The eyes of the hedgehog puppies are still closed.’

Example (10), which is adopted from Gese (2011), has a plausible reading under which there never ever was an event of closing the eyes before, yet the adjectival

1 “K[imian]-states are to be understood as reifications for the exemplification of a property  $Q$  at a holder  $x$  and a time  $t$ .” (Maienborn 2009:11), written as  $s \approx Q(x) \text{ at } t$ .

passive can be used without reservation. The following sentence makes the same point, also due to Gese:

- (11) *Die linke Bronchie war schon immer verengt.*  
 the left bronchial\_tube was already always constricted  
 ‘The left bronchial tube had always been constricted.’

We think that these examples do indeed falsify the assumption of an event-related entailment of existence. They show that the existence of an event which caused the described state cannot be an entailment. Rather it is a mere implicature, which, however, is easily triggered.

In light of these observations, we take the following point of view: Basically an adjectival passive denotes a state. But since it explicitly *names* a verb, its use additionally evokes an event frame that the hearer seeks to integrate into interpretation. From the fact that the verb shows up as a *past* participle, the hearer is led to conclude that the event frame should be interpreted as being relevant at some time prior to the moment of speech aka reference time.<sup>2</sup> This strongly suggests the inference of a real event that brought about the state. Examples (10) and (11) show, however, that it is also possible to infer only a hypothetical event to justify the presence of the event frame in semantics: the eyes of the puppies are *as if* they have been closed, the bronchial tube is *as if* it has been constricted.

In short, we simply assume that a (present tense) adjectival passive denotes a state  $s$  which is characterized by a property  $P$  which holds of the subject referent of the sentence at  $t_n$ . The existence of an event that caused  $s$  is not entailed, but comes in as an invited inference, an implicature. Apart from that detail, everything is in line with the received view on German adjectival passives, as represented by Maienborn’s work.<sup>3</sup> A formalization of our view is given in (12), where  $V$  stands for the verbal predicate, e.g. “steal”, as opposed to the adjectival property  $P$ , e.g. “stolen”.

- (12) **Adjectival passive meaning**  
 $\exists s : s \approx P(x) \text{ at } t_n$  (Assertion)  
 $\exists e : V(e) \wedge \text{result}(e, s)$  (Implicature)

In other words, an adjectival passive asserts that a given entity is in a certain state at reference time, and it additionally invites the inference that an event has taken place which resulted in this state.

<sup>2</sup> Since only present tense contexts will be discussed in this paper, we identify the reference time with the moment of speech ( $t_n$ ).

<sup>3</sup> If event frames can be interpreted as event kinds, and in section 4.1 we will argue that they can, our approach will comply with the proposals of Gese (2011) and Gehrke (2011).

## 2.2 The meaning of “*immer noch*” and reversibility

As far as the meaning of *immer noch* is concerned, we assume that it basically equals the meaning of *noch*, and that the word *immer* serves as an intensifier of that meaning. The use of *noch* in connection with a verbal predicate  $P$  and a referent  $x$  triggers the presupposition that the property  $P(x)$  has been valid before reference time, and its focus lies on the fact that  $P(x)$  holds at reference time.

(13) **Meaning of ‘noch’**

$\forall t_i : t_0 < t_i < t_n : P(x)$  at  $t_i$  (Presupposition)  
 $P(x)$  at  $t_n$  (Assertion)

By modifying *noch* with *immer*, the speaker additionally expresses that the first point of time at which  $P(x)$  was valid stands in some distance from  $t_n$ :

(14) **Meaning of ‘immer noch’**

$\forall t_i : t_0 < t_i < t_n : P(x)$  at  $t_i$  (Presupposition)  
 $P(x)$  at  $t_n$  &  $t_0 \ll t_n$  (Assertion)

According to Löbner (1989:176), uttering *noch P* will invite the hearer to draw the inference that the speaker believes that  $P(x)$  will be over at some future point of time. This takes over to *immer noch*, enriched by an additional piece of information that is imposed by *immer*. Accordingly, upon hearing *immer noch P*, the hearer concludes that the speaker believes that  $P(x)$  will be over at some point of time that is not very distant from  $t_n$ .

(15) **Meaning of ‘immer noch’ (revised)**

$\forall t_i : t_0 < t_i < t_n : P(x)$  at  $t_i$  (Presupposition)  
 $P(x)$  at  $t_n$  &  $t_0 \ll t_n$  (Assertion)  
 $\exists t_j > t_n : \neg P(x)$  at  $t_j$  with  $\neg(t_j \gg t_n)$  (Implicature)

The definition (15) complies with Kratzer’s explanation of the facts in (2). The inference invited by *immer noch* conflicts with the truth conditions of sentences involving pure resultant state predicates, whose interpretation includes an irreversibility condition  $\forall t_j : (t_j > t_n) \rightarrow P(x)$  at  $t_j$ .<sup>4</sup> In contrast to that, the sentences in (1) do not involve such a truth condition. The distribution of *immer noch* in (1) and (2) is thus explicable in terms of (non-)reversibility. But how about the cases represented in (5) that escape that kind of explanation? Let us have a closer look at them in the next section.

4 “The resultant state passives in (2) [our example (2)] convey that a contextually salient event of the kind described by the participle is over by now, the reference or topic time. Assuming, as does Parsons, that there is a state corresponding to an event’s being over, that state is irreversible and has to hold forever after. Once an event is over, it is over for good. If the passives in (2) describe resultant states, we have an explanation for why they are incompatible with adverbs like still.” (Kratzer 2000:2)

### 3 A descriptive view on the critical data

In this section, we will present some critical examples which seem to escape earlier approaches. We will also try to capture the empirical data on *immer noch* in descriptive terms.

#### 3.1 The ‘puzzling exceptions’

Above we saw that, sometimes, adjectival passives refrain from accepting *immer noch* even though the denoted state is clearly reversible. What is it that makes examples like (16) so special?

- (16) a. ??*Der Briefkasten ist immer noch geleert.*  
           the mailbox is still emptied  
           ?? ‘The mailbox is still emptied.’
- b. ??*Die Wäsche ist immer noch gewaschen.*  
           the laundry is still washed  
           ?? ‘The laundry is still washed.’
- c. ??*Das Glas ist immer noch ausgetrunken.*  
           the glass is still out+drunken  
           ?? ‘The glass is still drunken.’

As a first approximation, we can say the following. In all of the examples under (16), the head noun of the subject names an entity that, given reasonably foreseeable use, takes on two cyclically alternating states:

- (17) a. *Briefkasten* (mailbox): Empty → Full → Empty → Full → ...  
       b. *Wäsche* (laundry): Clean → Dirty → Clean → Dirty → Clean ...  
       c. *Glas* (glass): Empty → Full → Empty → Full → Empty ...

Additionally, we observe that in each of these examples, the verb underlying the adjective names an event that causes one of these two alternating states. In (16a), for instance, the verb *leeren* means something like ‘cause to be empty’, and being empty is one of the two states among which a customarily used mailbox oscillates. These observations suggest a first descriptive generalization:

- (18) **Generalization, first version:** *immer noch* is ruled out if
- the subject denotes a thing that oscillates among two states, and
  - the verb denotes an event that lexically describes the causation of one of these two states.

This generalization is immediately falsified, however, by the data given in (19). These examples meet all of the conditions stated in (18), so they are predicted not to tolerate *immer noch*. However, they do.

- (19) a. *Der Eimer ist immer noch gefüllt.*  
the bucket is still filled  
‘The bucket is still filled.’
- b. *Der Akku ist immer noch geladen.*  
the accumulator is still charged  
‘The accumulator is still charged.’
- c. *Die Reifen sind immer noch aufgepumpt.* (=1b)  
the tires are still up+pumped  
‘The tires are still pumped up.’

Examples like (19) call for a refinement of our generalization. It seems that the two states among which the subject referents oscillate are different from each other with respect to a certain feature, and that the exclusion or acceptance of *immer noch* is sensitive to that. Let us therefore distinguish a “zero state” within the cycle, and indicate it by a subscript “0”. The zero state is supposed to be the state that the entity is in when it is brand-new. The other one will be called “operational state”:

- (20) a. *Briefkasten* (mailbox): Empty<sub>0</sub> → Full → Empty<sub>0</sub> → Full → ...  
b. *Wäsche* (laundry): Clean<sub>0</sub> → Dirty → Clean<sub>0</sub> → Dirty → ...  
c. *Glas* (glass): Empty<sub>0</sub> → Full → Empty<sub>0</sub> → Full → Empty<sub>0</sub> ...

Recall our paradigmatic example (16a) in the light of these definitions. As before, the mailbox oscillates among two states during its lifetime, and the verb *leeren* virtually means ‘cause to be in the zero state’. Could this be the valid generalization?

- (21) **Generalization, second version:** *immer noch* is ruled out if
- the subject denotes a thing that oscillates between a zero state and an operational state, and
  - the verb denotes an event that lexically describes the causation of the zero state.

This can indeed account for the problematic cases noted above. Take (19a), for instance. Since the verb *füllen* means ‘cause to be full’, and since being full is not the zero state, but the operational state, the sentences under (19) do not represent counterevidence to (21).

The following piece of data provides further evidence in support of this generalization. It is identical to (16a), to the exception of the subject nominal:

- (22) *Die Schleuse ist immer noch geleert.*  
the ship-lock is still emptied  
‘The ship lock is still emptied.’

Like the mailbox in (16a), a ship lock oscillates among the two states of being full and being empty. And like in (16a), the adjective is formed from the verb that describes the causation of the empty state. Unlike (16a), however, (22) is perfectly fine with *immer noch*. The reason is obvious: the two states of the ship lock are of equal status, there is no dedicated zero state, and therefore the conditions for the exclusion of *immer noch* as they are stated in (21) are not met.

However, there is still counterevidence to (21). Consider the following example, brought to our attention by Wilhelm Geuder:

- (23) ??*Die Druckerpatrone ist immer noch geleert.*  
       the printer-cartridge is still emptied  
       ?? ‘The printer cartridge is still emptied.’

There are print cartridges that are refilled when empty. Imagine that the subject referent in (23) is of that kind. Its zero state will be, according to our definition above, the state of being full, because that is the state of such a cartridge when it is brand-new. Given this, the underlying verb in (23) would not describe the causation of the zero state, but rather the causation of the operational state. In such a situation, our generalization (21) predicts *immer noch* to be fine, but it is not. We therefore have to adjust our generalization once again.

### 3.2 Function fulfillment

Above we proposed that the zero state is the one that corresponds to the state of an entity being brand-new. This assumption is no longer tenable in view of (23) – we have to look for a better way of defining zero states as opposed to operational states. What is it that the fullness of a cartridge or a beer glass has in common with the dirtiness of, say, a T-shirt? For the time being we give a pretheoretic answer, to be made precise later on. Intuitively, what these states share is that each of them, if in force, will invite an annulment event. A full glass suggests someone’s need to drink. As long as there is no drinking event, this need will remain unsatisfied. Accordingly, there is a feeling of incompleteness, or dissatisfaction, in the world as long as the glass is full. For a similar reason, a filled cartridge “awaits” for being consumed. Finally, if a shirt is dirty, this represents *prima facie* evidence that someone is in need of wearing it. Since a (too) dirty shirt cannot be worn anymore, a cleaning event is called for. For a better understanding of the intuition behind these rather impressionistic remarks, let us include (24) into discussion:

- (24) *Die Lampe ist immer noch ausgeschaltet.*  
       the lamp is still off-switched  
       ‘The lamp is still switched off.’

A lamp is a kind of thing that oscillates among two states during its lifetime. Specifically, it oscillates between the state of being switched on and the state of being switched off. It seems plausible to assume that the zero state of a lamp is when it is switched off. Hence the underlying verb in (24), *ausschalt-*, must be understood as referring to an event causing the zero state. Our generalization (21) would exclude *immer noch*, but *immer noch* is fine.

We seem to face a problem. Apparently there is no important difference between (24) and (5a), repeated here for convenience as (25), but in one case *immer noch* is accepted while in the other case it is rejected.

- (25) ??*Der Briefkasten ist immer noch geleert.*  
 the mailbox is still emptied  
 ?? ‘The mailbox is still emptied.’

(26) shall serve to visualize the kinds of states among which the two things oscillate.

- (26) a. *Lampe* (lamp):  
 Off<sub>0</sub> → Switching\_On → On → Switching\_Off → Off<sub>0</sub> → ...  
 State<sub>0</sub> → Event<sub>1</sub> → State<sub>1</sub> → Event<sub>2</sub> → State<sub>0</sub> → ...
- b. *Briefkasten* (mailbox):  
 Empty<sub>0</sub> → Filling → Full → Emptying → Empty<sub>0</sub> → ...  
 State<sub>0</sub> → Event<sub>1</sub> → State<sub>1</sub> → Event<sub>2</sub> → State<sub>0</sub> → ...

At first glance, the two cases seem to be on a par. Yet there is an important difference! To see it, we have to take into account the purpose or *function* of the respective entities, and the way that the events Event<sub>1</sub> and Event<sub>2</sub> relate to that function.

Let the function of a lamp be the lighting of a room. In how far do the events involved in the cycle (26a) contribute to the fulfillment of the function? The function of lighting a room is clearly met by Event<sub>1</sub> (the switching on). It is, however, not touched upon by Event<sub>2</sub> (the switching off). The purpose of carrying out Event<sub>2</sub> is a separate one, i.e. saving energy. In this respect the case of the lamp differs from the case of the mailbox: Assume that the function of a mailbox is to direct mail into the hands of the mailbox owner. Now consider the cycle indicated in (26b). It turns out that both events, Event<sub>1</sub> (the filling) and Event<sub>2</sub> (the emptying), contribute to function fulfillment. By Event<sub>1</sub>, mail is getting into the mailbox – the mailbox changes from zero state to operational state. By Event<sub>2</sub>, the mail is getting into the hand of the mailbox owner – the mailbox changes from operational state to zero state.

How about the other “puzzling exceptions” of (16), where *immer noch* is excluded when the reaching of the zero state is at issue?

- (27) a. *Bierglas* (beer glass):

Empty<sub>0</sub> → Filling → Full → Emptying → Empty<sub>0</sub> → ...  
 State<sub>0</sub> → Event<sub>1</sub> → State<sub>1</sub> → Event<sub>2</sub> → State<sub>0</sub> → ...

b. *Hemd* (shirt):

Clean<sub>0</sub> → Wearing → Dirty → Washing → Clean<sub>0</sub> → ...  
 State<sub>0</sub> → Event<sub>1</sub> → State<sub>1</sub> → Event<sub>2</sub> → State<sub>0</sub> → ...

Let the function of a beer glass be to direct beer into the mouth of the person who wants to drink. Again, two steps must be taken to function fulfillment: First (Event<sub>1</sub>), beer is going into the glass – the state of the glass changes from zero state to operational state. Then (Event<sub>2</sub>), the beer is going into the mouth – the state of the glass changes from operational state to zero state. Virtually the same can be said about the cartridge. Given that its function is to direct ink onto paper, it is the effect of the two events in combination that ensures function fulfillment.

An interesting case is given by (27b). Assume that the function of a shirt is to dress you. Similar to the case of the lamp, only one step (Event<sub>1</sub>) must be taken to function fulfillment: put it on! There is an important difference to the case of the lamp, however. The point is that Event<sub>1</sub> leads to an operational state which is “not stable” as far as the thing’s function is concerned. While wearing the shirt, it will increasingly become contaminated until, at some point of time, it no longer dresses you. Due to that “undermining of the function” a second event is necessary from time to time to maintain function fulfillment – a cleaning. We can describe the cleaning as a “reset event” that returns the shirt to its zero state.

Summing up, *immer noch* seems to be sensitive to whether the two events of the cycle, Event<sub>1</sub> and Event<sub>2</sub>, together contribute to function fulfillment. This condition is not met in the case of the lamp. We have encountered two variants. Either the first event serves to prepare the second event, or the second event serves to undo undesired by-products of the first event. We finally arrive at the descriptive generalization given in (28):

- (28) **Generalization, third version:** *immer noch* is ruled out if
- the subject denotes a thing that oscillates between a zero state and a non-zero state, and
  - the verb denotes an event that lexically describes the causation of the zero state, and
  - both kinds of states are functionally connected with each other in the sense that function fulfillment of the entity is maintained only if the two events leading to the states occur in combination.<sup>5</sup>

<sup>5</sup> Very simply put: A forever shining lamp would fulfill its function, but a forever filled beer glass would not.

This is the descriptive generalization for which we claim empirical adequacy. Developing an account that explains it will be the concern of Section 4.

### 3.3 The ‘job-is-done’-reading

Discussing the conditions for the exclusion of *immer noch* in adjectival passives we cannot ignore the so-called ‘job-is-done’-reading (e.g. Rapp 1996, Kratzer 2000, Maienborn 2009). Maienborn (2007:108) in particular observes that job-is-done contexts can “rescue”, i.e. pragmatically license, virtually any otherwise bad adjectival passive:

- (29) a. ??*Die Katze ist gestreichelt.*  
the cat is petted  
?? ‘The cat is petted.’  
b. ??*Die Prinzessin ist geheiratet.*  
the princess is married  
?? ‘The princess is married.’
- (30) a. *Anna hat ihre Nachbarspflichten erfüllt. Der Briefkasten ist geleert,*  
Anna has her neighbor-duties fulfilled the mailbox is emptied  
*... und die Katze ist gestreichelt.*  
... and the cat is petted  
‘Anna has done her neighborly duties: the mailbox is emptied, the flowers are watered and the cat is petted.’  
b. *Das Märchen ist erst vorbei, wenn die Prinzessin geheiratet ist.*  
the fairytale is only over if the princess married is  
‘The fairytale is not over until the princess is married.’

What is going on here is that the context imposes an obligation (“job”) on some person. To fulfill it, the person has to perform the kind of action/event named by the verb. Since the content of the obligation can be virtually any kind of action, creating a job-context is a powerful tool for pragmatically licensing the use of almost any action verb in adjectival passives.

We observe that *immer noch* is never compatible with an adjectival passive understood in a ‘job-is-done’ reading! This holds even where *immer noch* is otherwise tolerated: if embedded within a job-context, *immer noch* will be rejected. Compare the following:

- (31) a. *Das Fahrrad ist immer noch gestohlen.*  
the bike is still stolen  
‘The bike is still stolen.’

- b. ??*Auftrag ausgeführt!* *Das Fahrrad ist immer noch gestohlen.*  
 mission accomplished the bike is still stolen  
 ?? ‘Mission accomplished! The bike is still stolen.’

We thus note a general constraint that can be stated as follows:

- (32) If an adjectival passive is uttered within a job-context, expressing that the job is done, *immer noch* is systematically excluded.

This constraint calls for an explanation, and in section 4.4 below we will give a solution to this observation.

## 4 An explanation in terms of frames and scripts

### 4.1 Setting the stage: scripts and frames

In the previous sections we have worked out the conditions that accompany the exclusion of *immer noch* in those adjectival passives that escape Kratzer’s (2000) account. We have seen that the subject referent has to be associated with two kinds of cyclically occurring events, and that both event kinds in combination must realize for function fulfillment of the subject entity. The latter in particular suggests that the notion of a *Script* may play a crucial role in understanding the facts.

The term *Script* has been brought into the cognitive literature in the 1970’s. Schank & Abelson (1977:41,1975:151) describe it as “a structure that describes an appropriate sequence of events in a particular context.” More elaborated, “a script is a predetermined, stereotyped sequence of actions that define a well-known situation. [...] Each action results in conditions that enable the next to occur. To perform the next act in the sequence, the previous acts must be completed satisfactorily.” (Schank & Abelson 1977:45,1975:152).

Schank & Abelson (1975:65) distinguish three types of scripts: Situational scripts describe the order of events in a stereotypical situation, e.g. the restaurant script. Personal scripts are more particularized. They refer to the actions a person undertakes when playing a particular role. Examples of Schank & Abelson include a flatterer, a jealous spouse, or a good samaritan. The third type of scripts, instrumental scripts, is of particular interest for us. They describe prescribed sequences of actions related to a particular object entity. Examples are lighting a cigarette, starting a car, or frying an egg. Unlike situational scripts, which usually take multiple actors, instrumental scripts have only one mandatory participant. Furthermore, they have an intended goal which consists of bringing this participant into a determined state.

While the term ‘script’ has largely been unattended to from linguistic viewpoints, the notion of ‘frame’, which emerged roughly in the same time, has gained more

interest, above all in cognitive and computational linguistics. In general, a frame is “a data-structure for representing a stereotyped situation” (Minsky 1975). This notion has been central to frame semantics (Fillmore 1976) and FrameNet (Baker et al. 1998, Ruppenhofer et al. 2010), which are based on the assumption that every lexical unit, i.e. a pairing of a lexical expression with a meaning, evokes a particular frame. For every frame  $F$  there is a set of lexical units  $LU(F)$  which evoke the frame. For example, the use of the verb *murder* is one of the lexical units, the use of which evokes the frame Killing.

A frame consists of various frame elements, which may be specific, like *Killer* and *Victim*, but also general, like *Time* and *Location*. The frame elements of a frame evoked by a particular verb correspond to *thematic roles* in the event denoted by the verb. Frame elements are slots which are filled by the entities which are denoted by syntactic argument expressions of the verb. Note that, according to FrameNet (Ruppenhofer et al., 2010:5), also adjectives can evoke frames. For instance, the adjectives *full* and *empty* evoke the stative frame *Fullness*.

In our understanding, at least if evoked by a lexical verb, the term ‘frame’ can be used equivalently to ‘event type’ or ‘kind of eventuality’.<sup>6</sup> To the extent that conceptual structures are organized in frames, as is widely in cognitive linguistics (cf. e.g. Fillmore 1976, van Dijk 1977, Barsalou 1992), such a view would comply with Krifka’s (1995) proposal that kinds are a species of concepts. A frame and its frame elements then describe a kind of eventuality which is characterized by certain conditions on its participants. It must not be confused with a particular event, which is referred to by the use of a finite verb, and which can be said to realize or *instantiate* a frame. Generally, while an event is a token, a frame is a type (for an extended discussion see Busse 2012:539ff.). Seeing frames as event types allows us to make the relationship between a verb, its truth conditional impact and the frame it evokes more precise, and we can define the following:<sup>7</sup>

- (33) a. Any occurrence of a verb evokes a frame  $F$  (which is tantamount to saying that it introduces a discourse referent for an event type).  
b. Any occurrence of a finite verb introduces a discourse referent for an event token, which is an instance of  $F$ .

The relationship between frames and scripts is very close. In an intuitive understanding, a script consists of various frames. But also, in a general sense, the notion frame subsumes scripts. As Busse (2012:543) writes, “Scripts can be conceived of

<sup>6</sup> Eventualities are actions, states, processes and the like (cf. Bach 1986).

<sup>7</sup> For nouns and adjectives, frame evocation is not as simple and requires the interaction of more than one frame. See Irmer (2013:38) for a proposal.

as event-related complex frame structures consisting of temporally and/or causally linked (sub-)event frames”.<sup>8</sup>

Starting from Busse’s suggestion, we will now develop a precise definition of scripts. To begin with, we propose that there are two conditions that the frames in a script have to fulfill. First, the frames of a script are temporally ordered. Second, an event instantiating a frame in a script provides an occasion for an event instantiating the next frame in the script.

For the first condition, we can resort to *precedes*, a temporal relation between frames that is in use in FrameNet as part of the definition of a subframe.<sup>9</sup> Though FrameNet defines precedence for subframes of a complex frame, the conception of precedence of subframes carries over easily to scripts, which may be seen as a special case of complex frames consisting of various subframes which precede each other. If a precedence relation between two frames is part of our conceptual knowledge, then we can derive a condition on events that instantiate these frames:

- (34) Let  $F_1, F_2$  be frames and  $e_1, e_2$  events.  
 If  $precedes(F_1, F_2) \wedge e_1 \text{ INST } F_1 \wedge e_2 \text{ INST } F_2$ , then  $t(e_1) < t(e_2)$ .

However, there is more to a script than simple temporal precedence of frames. The connections between them are more tight: a subframe of the script must have been instantiated by an event before the next event – instantiating the next frame – might take place. Recall from above Schank & Abelson’s wording that “[e]ach action results in conditions that enable the next to occur”. The relation of causality, as it is suggested by Busse, is clearly too strong to capture this. But there is an alternative: an event instantiating a frame in the script can be said to provide an *occasion* for the next event to happen. This we consider to be the second condition imposed on frames in a script.

The notion of *occasion* has been introduced into the literature on text interpretation by Hobbs (1985). He argued that it is very often the case that an event is mentioned in a text, and another one can be inferred from it by the use a certain amount of background knowledge. He called this relation between events, which is more than temporal precedence but less than causality, the *occasion* relation. Occasion holds between two text segments if they express an event (“change of state”) and a state, respectively, and one can infer that the state is either the initial or

<sup>8</sup> “Skripts können auch als ereignisbezogene komplexe Frame-Strukturen mit temporal und/oder kausal miteinander verknüpften Teil-Ereignis-Frames aufgefasst werden” (Busse 2012:543)

<sup>9</sup> “Precedes captures the temporal ordering of subevents within a complex event. The relation holds between component subframes of a single complex frame, and provides additional information to the set of Subframe relations[...]” (Petrucci and Melo 2012)

final state of the event.<sup>10</sup> The notion was picked up by Kehler (2002) and Asher & Lascarides (2003).<sup>11</sup> Note that Hobbs (1985) regards *occasion* as a relation between text segments and also between the expressed events, while Asher & Lascarides (2003) treat it as a relation between events. Here, for a definition of *occasion* in terms of frames suited to our purposes, we try to be more precise without getting too far away from Hobbs' original definition. The type-level relation *occasion* between two frames boils down on the token-level to relationships between events instantiating them and a state.

- (35) An *occasion* relation holds between two frames  $F_1$  and  $F_2$  iff from an event  $e_2$  which is instance of  $F_2$ , an initial state  $s_1$  can be inferred, which is the final state of an event  $e_1$  which instantiates  $F_1$ .

The final state of an event is its resultant state (Parsons, 1990:234), which is characterized by the fact that the event has culminated. Following many, we will express this relation between an event and a state as  $result(e_1, s_1)$ . Regarding the initial state of an event, it is the state which provides an occasion for the event to occur, i.e.  $occasion(s_1, e_2)$ . In terms of Kimian states, it is the state which is characterized by a property  $Q$  holding of some entity  $x$  at the time of the initial phase of  $e_2$ ,  $t_{init}(e_2)$ .<sup>12</sup> We thus arrive at the following definition of *occasion*.

- (36) Let  $F_1, F_2$  be frames and  $e_1, e_2$  events instantiating them with a common participant  $x$ . Then  $occasion(F_1, F_2)$  iff  $\exists s_1$  such that
- (i)  $result(e_1, s_1)$  and
  - (ii)  $occasion(s_1, e_2)$
- where  $occasion(s_1, e_2)$  iff  $\exists Q \exists x : s_1 \approx Q(x)$  at  $t_{init}(e_2)$ .

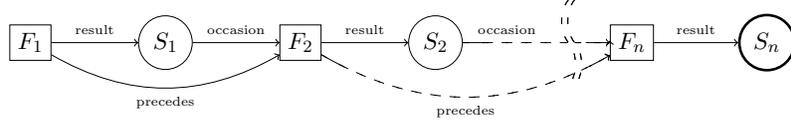
Let us now put the pieces together. To define the notion of a script we appeal to frames as well as to states and events instantiating them. Thus, on the one hand, there are relationships between frames, type-level relations (a), and on the other hand, we find relationships between events and states, token-level relations (b).

- (37) A **Script** is a complex frame structure consisting of a sequence of frames  $F_1, F_2 \dots F_n$

10 "Occasion holds between two text segments if either (a) a change of state can be inferred from the assertion of  $S_0$ , whose final state can be inferred from  $S_1$ , or (b) a change of state can be inferred from the assertion of  $S_1$ , whose initial state can be inferred from  $S_0$ " (Hobbs 1985:10).

11 Asher & Lascarides (2003) characterized the term occasion, rather vaguely, as follows: "A relation occasion normally holds between two events if there are two event types  $\phi$  and  $\psi$  that are related somehow in terms of stereotypical script knowledge" (Asher & Lascarides 2003:201, cf. also Irmer 2011:142,214).

12 For a theory of the temporal structure of events, see e.g. Kamp & Reyle (1993).



**Figure 1** General form of a script

- i. with a temporal ordering:
  - (a)  $precedes(F_1, F_2), \dots, precedes(F_{n-1}, F_n)$
  - (b)  $\forall i(1 \leq i < n) : e_i \text{ INST } F_i \wedge e_{i+1} \text{ INST } F_{i+1} \rightarrow t(e_i) < t(e_{i+1})$ .
- ii. where an event instantiating  $F_i$  results in a state which provides an occasion for an event instantiating  $F_{i+1}$  to occur:
  - (a)  $occasion(F_1, F_2), \dots, occasion(F_{n-1}, F_n)$
  - (b)  $\forall i(1 < i \leq n) : e_i \text{ INST } F_i \rightarrow \exists s_{i-1} : result(e_{i-1}, s_{i-1}) \wedge s_{i-1} \approx Q(x) \text{ at } t_{init}(e_i)$

More compactly, one may state that two frames  $F_1$  and  $F_2$  form a coherent part of a script iff  $precedes(F_1, F_2) \wedge occasion(F_1, F_2)$ . A convenient way of visualizing scripts can be borrowed from the theory of Petri-Nets (cf. Sowa 2000:220ff.). Petri-Nets consist of event nodes and state nodes connected by directed arcs. A script in form of a Petri-Net is depicted in Fig. 1, where boxes represent event frames and circles stand for states. The final state of the script is indicated by a thicker circle.

At this point, a note on the ontological status of states is in order. There are basically two possibilities: either we assume that a state is an instance  $s$  of some kind of state  $S$ , or we assume an ontologically weaker  $s$  which is characterized by a property  $P$  which holds of some entity  $x$  at some time  $t_s$ . This latter view is taken by Maienborn (2007b, 2009), who works with Kimian states in the characterization of adjectival passives (see Section 2.1 above). In the first case, a script may be schematized as (38a), and in the second as (38b).  $F_i$  stands for an event frame and  $S_i$  for a stative frame.

- (38) a.  $F_1 > S_1 > F_2 > S_2$   
 b.  $F_1 > F_2$

In the first variant, a state (e.g. denoted by an adjectival passive) would be an instance of a stative frame just like a Davidsonian event denoted by a verb is an instance of an eventive frame. In the second variant, a state would correspond to a property holding of an instance of a frame participant at a certain time. In this paper, we will first, in Section 4.2, work with Kimian states, without appealing to stative frames. Then, in Section 4.3, we will give an account in terms of stative frames.

But before, we need to discuss another important property of scripts which has been left implicit so far. According to our definition (37), a script is a finite sequence of frames. Hence, a script has a beginning and, particularly important for us, an end. There should be a last frame  $F = F_{fin}$  which results in a state that, at least as far as instrumental scripts are concerned, may be seen as the intended goal of the script. Note that the Petri-Net representation given above does reflect this piece of information.

Importantly, the final state does not provide an occasion for a subsequent event because such an event would enlarge the script and  $F$  would no longer be the script-final frame. Loosely speaking: once the goal is reached, there is, from the point of view of the script, no further action to be expected.

(39) **Script-finality**

If  $F = F_{fin}$  and  $e \text{ INST } F$  then

$\neg \exists e' : e' \text{ INST } F' \wedge \text{precedes}(F, F') \wedge \text{occasion}(F, F')$

A closer look at the different types of scripts yields a more differentiated picture:<sup>13</sup>

(i) In instrumental scripts, the final frame is well-defined: it is the frame which is instantiated by an event that results in the final state of the entity which the instrumental script is about. (ii) In situational scripts, the final frame is not so easy to grasp. The end of the script may vary depending on the perspective one takes on it. For example, in the restaurant script, the script ends differently from the waiter's than from the consumer's perspective. (iii) In personal scripts, the final frame is determined by the individual background and is subject to even more variability.

In short, only instrumental scripts are marked by a clearly distinguishable script-final frame. Hence, at least for instrumental scripts, we can claim validity of the definition (39).

Assume that the final frame of a script has been instantiated (i.e.  $\exists e : e \text{ INST } F_{fin}$ ). We can be sure that there will be no further event  $e'$  instantiating a frame belonging to the same script. Thus, based on script-knowledge alone, we are not entitled to infer any change of the state reached. Therefore, we can defeasibly conclude that there will be no future time at which  $s$ , the resultant state of  $e$ , does not hold.

In other words, there is no reason not to assume that the resulting state of  $e$  keeps on holding after the script has been terminated. The inference is invited that  $s$  holds forever after. However, this inference is not compulsory, rather defeasible: it might be overridden by additional circumstances.

13 The different types of scripts differ from each other with respect to the entities that fill frame element slots in their frames. Frames in instrumental scripts have a common thematic participant which, however, may fill a different slot in each frame of the script. We could also call them *thematic scripts*. Personal scripts are doubtlessly *agentive scripts*, with an entity filling agentive slots over the frames. In situational scripts, finally, it is not necessarily the case that there is a common participant in all frames of the script and we cannot be more specific.

(40) **Invited inference for script-final events**

Let  $F_{fin}$  be a script-final frame,  $e$  an event,  $s$  a state characterized by a property  $P$  holding of some entity  $x$  at time  $t$ .

If  $e \text{ INST } F_{fin} \wedge \text{result}(e, s) \wedge s \approx P(x)$  at  $t$   
 then it is very likely that  $\neg \exists t_j > t : \neg P(x)$  at  $t_j$ .<sup>14</sup>

What is said in (40) does not hold for script-final events that bring about a resultant state that, for truth-conditional reasons, has to hold forever after. Here, of course, the described consequence will not only be “very likely” but a necessity. A case in point is, arguably, (2a).

**4.2 Scripts and adjectival passives with “immer noch”**

Returning to the main concern of this paper, our claim is the following: In Kratzer’s “puzzling exceptions” like (5a), which escape an explanation in terms of reversibility, the incompatibility with *immer noch* is due to script knowledge. The claim is that the use of *immer noch* is ruled out in precisely those adjectival passives which denote a state corresponding to the resultant state of a script-final event.

To show that, let us examine in detail what inferences play a role in the interpretation of adjectival passive sentences with *immer noch*. As for the meaning of adjectival passives, recall from Section 2.1 that we simply assume the denotation of a state  $s$  which is characterized by a property  $P$  which holds for the subject referent of the sentence at  $t_n$ . The meaning representation (12) from page 6 is repeated here as (41). As argued above, the existence of an event  $e$  that caused  $s$  is an implicature rather than an entailment. Remember that  $s$  is the (Kimian) state denoted by the adjectival passive and  $e$  is the (neo-Davidsonian) argument of the verbal predicate  $V$ .

(41) **Adjectival passive meaning**

$\exists s : s \approx P(x)$ at $t_n$	(Assertion)
$\exists e : V(e) \wedge \text{result}(e, s)$	(Implicature)

In the present paper, we exploit the idea that the naming of lexical categories evokes corresponding frames in background knowledge. Accordingly, the adjectival passive meaning in (41) is not yet complete. The explicitly named verb that underlies the participle gives rise to the presence of an event frame in semantic interpretation. Frame knowledge tells us that the verb is a lexical unit evoking some frame  $F$ , i.e.  $V \in LU(F)$ , and that the implicated event  $e$  would be an instance of that frame.

<sup>14</sup> The expression “it is very likely that” indicates a defeasible consequence. For a more formal characterization, Asher and Lascarides (2003) use the operator ‘>’ for defeasible inferences: the expression ‘ $A > B$ ’ means ‘If  $A$  then normally  $B$ ’.

- (42) **Adjectival passive meaning, frame-enriched**  
 $\exists s : s \approx P(x) \text{ at } t_n$  (Assertion)  
 $\exists e : V(e) \wedge \text{result}(e, s)$  (Implicature)  
 $\exists F : V \in LU(F) \wedge e \text{ INST } F$  (Frame knowledge)

At this point, let us recall the contribution of *immer noch* as stated above in Section 2.2 (cf. (15) on page 7):

- (43) **Meaning of ‘immer noch’**  
 $\forall t_i : t_0 < t_i < t_n : P(x) \text{ at } t_i$  (Presupposition)  
 $P(x) \text{ at } t_n \wedge t_0 \ll t_n$  (Assertion)  
 $\exists t_j > t_n : \neg P(x) \text{ at } t_j \text{ with } \neg(t_j \gg t_n)$  (Implicature)

We now show that the invited inference of *immer noch* clashes with an inference which will be triggered if the event frame evoked by the utterance of the adjectival passive is script-final. Assume that  $F = F_{fin}$ . Then, on account of (40), (42) amounts to the following:

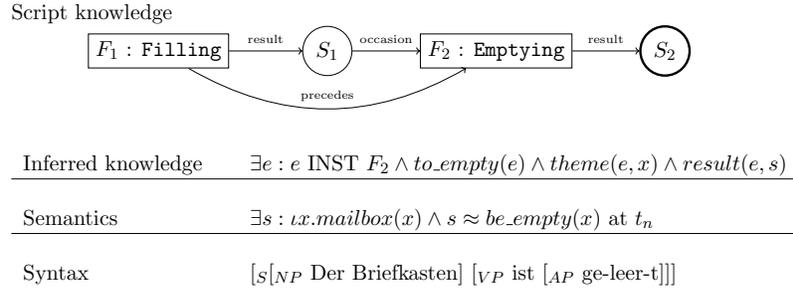
- (44) **Adjectival passive meaning in script-final frames**  
 $\exists s : s \approx P(x) \text{ at } t_n$  (Assertion)  
 $\exists e : V(e) \wedge \text{result}(e, s) \wedge \neg \exists t_i > t_n : \neg P(x) \text{ at } t_i$  (Implicature)  
 $\exists F_{fin} : V \in LU(F_{fin}) \wedge e \text{ INST } F_{fin}$  (Frame knowledge)

Obviously, this is not compatible with the expected change in the near future which is suggested by *immer noch*: recall that, according to (43), *immer noch* invites the inference  $\exists t_j > t_n : \neg P(x) \text{ at } t_j$ , which contradicts the implicature of (44).

It is this interplay of invited inferences that determines the distribution of *immer noch* in the “puzzling exceptions” of adjectival passive sentences. Let us have a look at our key examples in the light of these results.

- (45) *Der Briefkasten ist geleert.*  
 the mailbox is emptied’  
 ‘The mailbox is emptied.’

In an utterance of this sentence, the lexical verb *leer-* underlying the participle *geleert* evokes the event frame  $F$ , implicating the occurrence of a Davidsonian event  $e$  which instantiates  $F$ . The state of being empty, denoted by the sentence, is understood as resulting from such an event. The evoked event frame Emptying is part of the instrumental script Filling/Emptying, which has a dedicated goal and includes a thematic role for a container entity  $x$ . In (45), the container role is filled by the particular mailbox denoted by the subject. In terms of FrameNet (Ruppenhofer et al.



**Figure 2** Layers of meaning in the interpretation of (45)

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2010),  $x$  fills the roles Goal in the Filling frame and Source in the Emptying frame.

Depending on the type of container that is subject to filling and emptying, the script either starts with Filling or Emptying. Most often, it will start with Filling since the “zero state” of a stereotypical container is the state of being empty. This might not always be so, as the example of the printer cartridge shows, cf. (23). The example of the mailbox, (45), represents the typical case. The different layers of meaning involved in this example are depicted in Fig. 2. In this picture, the “semantics” layer refers to the knowledge which is asserted by an utterance of this sentence, and “inferred knowledge” comprises pragmatic knowledge such as implicatures. To avoid misunderstandings, we have explicitly named the predicate corresponding to the state as *be\_empty*, and the event predicate as *to\_empty*.

Importantly, since  $e$  relates to a script-final frame ( $F_2 = F_{fin}$ ), the following inference is additionally invited (cf. (40)):

$$(46) \quad \neg \exists t_j > t_n : \neg be\_empty(x) \text{ at } t_j$$

Now let the sentence contain *immer noch*:

$$(47) \quad ?? \text{ Der Briefkasten ist immer noch geleert.}$$

the mailbox is still emptied'

?? ‘The mailbox is still emptied.’

The oddness of this sentence becomes explicable if we recall from (43) the impact that *immer noch* has on interpretation, that its use invites the following inference:

$$(48) \quad \exists t_j > t_n : \neg be\_empty(x) \text{ at } t_j$$

As a comparison of (46) and (48) shows, there is a clear-cut conflict. This is why *immer noch* is ruled out.

The situation is different for frames which are not script-final. Consider example (49), where the verbal material of the participle evokes the frame Filling.

- (49) *Der Briefkasten ist gefüllt.*  
the mailbox is filled'  
'The mailbox is filled.'

This frame, too, forms part of the script Filling/Emptying. But it constitutes the opening frame and not, like Emptying, the finishing frame. Therefore, the state denoted in (49) is free to provide an occasion for a further event of emptying to occur. Hence, we are not invited to draw an inference from script-finality, and no contradiction with the inference invited by the use of *immer noch* will arise:

- (50) *Der Briefkasten ist immer noch gefüllt.*  
the mailbox is still filled'  
'The mailbox is still filled.'

We arrive at the compelling conclusion that the state denoted by an adjectival passive whose underlying verb identifies a script-final event cannot be modified with *immer noch* due to two conflicting implicatures.

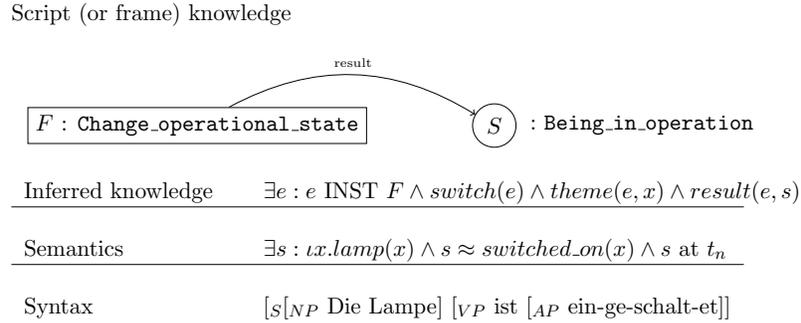
The prediction then is that (47) is possible only in special contexts where explicitly given information overwrites the otherwise evoked script. In (51), for instance, the context suggests an unusual script Emptying/Filling instead of Filling/Emptying. Since the verb *leer-* ("to empty") now no longer corresponds to the final frame, we expect (47) to be possible. This expectation is borne out.

- (51) *Ein geleerter Briefkasten muss so schnell wie möglich wieder gefüllt werden, findet Briefträger Petersen. Er ärgert sich, wenn ein Briefkasten um 15 Uhr immer noch geleert ist.*  
'An emptied mailbox should be refilled as soon as possible, thinks postman Petersen. He is upset if a mailbox is still emptied at three o'clock.'

Remember from Section 3.2 that there are apparently similar examples which, however, show a different behaviour. Consider (24), repeated here as (52):

- (52) a. *Die Lampe ist immer noch ausgeschaltet.*  
the lamp is still off-switched  
'The lamp is still switched off.'  
b. *Die Lampe ist immer noch eingeschaltet.*  
the lamp is still on-switched  
'The lamp is still switched on.'

These examples differ from the case of a filled/emptied mailbox in one important respect: None of the two frames evoked by *einschalt-* or *ausschalt-* can be said to be final with respect to the other one. A look on FrameNet data supports the view that (52) is fundamentally different from the mailbox case. In FrameNet, the



**Figure 3** Layers of meaning in the interpretation of (52b)

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verbs *ausschalt-* (‘to switch off’) and *einschalt-* (‘to switch on’) both evoke the same frame *Change\_operational\_state*. The configuration for this example is depicted in Fig. 3. The sentence (52a) denotes the state of being switched off. An event  $e$  is implied which is supposed to have resulted in that state. As  $e$  does not relate to a script-final frame, no inference about its resultant state is triggered. As a consequence, there is no conflict with the inference invited by the use of *immer noch*. The same holds for (52b).

With the account presented in this paper, we are able to explain in a simple way why (53) is perfectly fine with or without *immer noch*, in contrast to the almost identical (47) above.

- (53) *Der Briefkasten ist immer noch leer.*  
 the mailbox is still empty’  
 ‘The mailbox is still empty.’

The difference is that in (53), there is no event frame nor a script being evoked. Hence, there is no incompatibility with *immer noch*, although both sentences have identical truth conditions. The semantic layer in Fig. 2 would be the same, but no instantiation of an event frame could be inferred.

Our view is supported by experimental findings of Kaup et al. (2009). These authors revealed that upon reading sentences with *immer noch* in conjunction with adjectival passives like (47), readers mentally simulate the action that brought about the current state while they did not so in sentences with adjectives like (53). We interpret these results as a strong support for the assumption that a script-final frame is evoked in (47) but not in (53).

To sum up, if an adjectival passive denotes a state that is the resultant state of a script-final event then *immer noch* is ruled out. Thus, by taking script knowledge

into account, we can deliver an explanation of the distribution of *immer noch* in German adjectival passives.

### 4.3 Assuming stative frames

In the last section, we have parted from an ontology that entertains event kinds, which (Neo-)Davidsonian events are instances of. We proposed to identify event kinds with frames. Regarding states, we assumed them to be Kimian, i.e. being characterized by a property holding at a given time. But why shouldn't we assume, on a par with kinds of events, kinds of states which Kimian states are instances of? They would be stative frames. This idea is not new, also FrameNet (Ruppenhofer et al. 2010) contains stative frames, cf. e.g. the frames *Being\_in\_operation* or *Being\_located*.

The notion of a Kimian state can be fairly simply mapped to stative frames: A Kimian state  $s$  which is characterized by a property  $P$  holding of an entity  $x$  at some time  $t$ ,  $s \approx P(x)$  at  $t$ , translates to  $s \text{ INST } S \wedge \Theta_S(s, x) \wedge \text{Time}_S(s, t)$ , where  $\text{Time}_S$  relates a state to its time,  $\Theta_S$  stands for a frame element of a stative frame  $S$ , and  $x$  fills the corresponding slot of the frame. Frame element slots in a frame are filled by entities which play corresponding thematic roles in an eventuality realizing the frame. Since the eventuality in question is a state we are in good company if we assume that  $\Theta_S$  in a stative frame corresponds to the role *Holder* (cf. Maienborn, 2007, Kratzer, 1996, Rapp & von Stechow, 1996).<sup>15</sup>

In the following, we will recast the definitions given in the last section in terms of stative frames. There, we assumed a tripartite meaning representation for adjectival passives, cf. (42), repeated here as (54).

- (54) **Adjectival passive meaning, frame-enriched**
- |   |                   |
|---|-------------------|
| $\exists s : s \approx P(x)$ at $t_n$                     | (Assertion)       |
| $\exists e : V(e) \wedge \text{result}(e, s)$             | (Implicature)     |
| $\exists F : V \in \text{LU}(F) \wedge e \text{ INST } F$ | (Frame knowledge) |

Now, we can express the information covered by a Kimian state by a potentially richer frame-based representation. We assume a stative frame  $S$  that describes a kind of state which  $s$  is an instance of. The *Time* slot fills the temporal condition imposed on a Kimian state, and  $\text{Holder}_S(s, x)$  takes care of that  $x$  is involved in the state as a participant.

<sup>15</sup> Note that in FrameNet, general semantic or thematic roles like *Holder* or *Theme* are often specified by more fine-grained concepts in the taxonomy of frame elements. For example, we will regard *Source* and *Goal* as specific refinements of the general role *Theme* in the frames *Emptying* and *Filling*, respectively.

One might also argue to drop the conjunct  $V(e)$  as a part of the implicature, given the fact that the information provided by the verbal participle is already expressed in terms of frame knowledge. This latter move is, of course, independent of whether or not we accept state kinds in ontology. And so we end up with the following two-dimensional meaning representation of an adjectival passive in terms of frames.

(55) **Adjectival passive meaning in terms of stative frames**

$$\begin{aligned} \exists s \exists S : s \text{ INST } S \wedge \text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_n) & \quad (\text{Assertion}) \\ \exists e \exists F : e \text{ INST } F \wedge \text{result}(e, s) & \quad (\text{Implicature}) \end{aligned}$$

Regarding script-finality, the definition (44) from page 21, repeated below as (56) translates to (57). Assuming that  $s$  is an instance of a stative frame  $S$ , we can express  $P(x)$  as  $\Theta_S$ , and for stative frames in particular we know that  $\Theta_S$  can be specified as  $\text{Holder}$ , and  $t_n$  specifies the Time slot of  $S$ . As before, we can content ourselves with just two layers of meaning.

(56) **Adjectival passive meaning in script-final frames**

$$\begin{aligned} \exists s : s \approx P(x) \text{ at } t_n & \quad (\text{Assertion}) \\ \exists e : V(e) \wedge \text{result}(e, s) \wedge \neg \exists t_i > t_n : \neg P(x) \text{ at } t_i & \quad (\text{Implicature}) \\ \exists F_{fin} : V \in LU(F_{fin}) \wedge e \text{ INST } F_{fin} & \quad (\text{Frame knowledge}) \end{aligned}$$

(57) **Adjectival passive meaning in script-final frames, assuming stative frames**

$$\begin{aligned} \exists s \exists S : s \text{ INST } S \wedge \text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_n) & \quad (\text{Assertion}) \\ \exists e \exists F_{fin} : e \text{ INST } F_{fin} \wedge \text{result}(e, s) \wedge \neg \exists t_i > t_n : \neg (\text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_i)) & \quad (\text{Implicature}) \end{aligned}$$

The meaning of *immer noch*, above (15/43), is repeated here again as (58):

(58) **Meaning of ‘immer noch’**

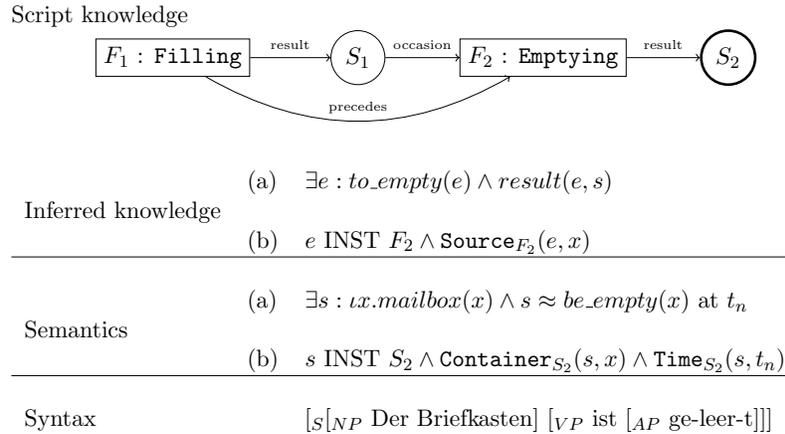
$$\begin{aligned} \forall t_i : t_0 < t_i < t_n : P(x) \text{ at } t_i & \quad (\text{Presupposition}) \\ P(x) \text{ at } t_n \wedge t_0 \ll t_n & \quad (\text{Assertion}) \\ \exists t_j > t_n : \neg P(x) \text{ at } t_j \text{ with } \neg(t_j \gg t_n) & \quad (\text{Implicature}) \end{aligned}$$

In terms of stative frames, the expression  $P(x)$  at  $t$  amounts to  $\text{Holder}_S(s, x) \wedge \text{Time}_S(s, t)$ . Thus, given a state  $s$  realizing a stative frame  $S$ , and an entity  $x$  which fills the role  $\text{Holder}$  of  $S$  in  $s$ , (58) can be stated as follows:

(59) **Meaning of ‘immer noch’ in terms of stative frames**

$$\begin{aligned} \forall t_i : t_0 < t_i < t_n : \text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_i) & \quad (\text{Presupposition}) \\ \text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_n) \wedge t_0 \ll t_n & \quad (\text{Assertion}) \\ \exists t_j > t_n : \neg (\text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_j)) \text{ with } \neg(t_j \gg t_n) & \quad (\text{Implicature}) \end{aligned}$$

We arrive at the same obvious conflict of two invited inferences as in Section 4.2. The implicature of *immer noch* from (59),  $\exists t_j > t_n : \neg (\text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_j))$ , clashes with the condition  $\neg \exists t_i > t_n : \neg (\text{Holder}_S(s, x) \wedge \text{Time}_S(s, t_i))$  in (57).



**Figure 4** Stative frames in the interpretation of (45)

The advantage of accepting state kinds/ stative frames is that now the layers of meaning in the mailbox example (45) can be expressed with a tighter connection to the underlying script knowledge. The new representation in Fig. 4 differs from Fig. 2 in that now both events and states are instances or realizations of event frames and stative frames, respectively. All layers of meaning have each (a) a meaning representation with a neo-Davidsonian event and a Kimian state, as before, as well as (b) the additional frame-enriched parts of meaning, now kept at a separate level. The two levels complement each other: while part (a) is strictly bound to the semantics of the used linguistic expressions, (b) provides an interface to the conceptual level, which we assume to be organized in frames.<sup>16</sup>

#### 4.4 On ‘job-is-done’ contexts

Above we explained the oddness of examples like (60) by appealing to the notion of script-finality.

- (60) ??*Der Briefkasten ist immer noch geleert.*  
 the mailbox is still emptied  
 ?? ‘The mailbox is still emptied.’

This kind of explanation is possible because the sentence gets interpreted against the background of an instrumental script, which describes a series of events to be done until a dedicated final state is reached. Our account raises a follow-up question:

<sup>16</sup> The frame element *Source* is part of the frame *Filling* as a specification of the role *Theme*, while *Container* is the specific shaping of *Holder* in the frame *Fullness*, cf. footnote 15 above.

What if there is a dedicated final state for an event outside of instrumental scripts? If such a state were denoted by an adjectival passives, would *immer noch* be rejected? The answer is yes.

‘Job-is-done’-contexts (cf. section 3.3 above) are a case in point. Broadly speaking, these contexts provide items on someone’s ToDo list. They create a task to be done, which may consist of various steps with a clear-cut final. A simple linguistic means to evoke a ‘job-is-done’-context is given in the form of an imperative.<sup>17</sup>

- (61) a. *Klau das Fahrrad!* – *Okay, das Fahrrad ist (??immer noch) geklaut.*  
 steal the bike      okay the bike      is still      stolen  
 ‘Steal the bike!’ – ‘Okay, I’ve stolen the bike.’ (lit. ‘The bike is (??still) stolen.’)
- b. *Fütter die Fische!* – *Okay, die Fische sind (??immer noch) gefüttert.*  
 feed the fishes      okay the fishes are still      fed  
 ‘Feed the fishes!’ – ‘Okay, I’ve fed the fishes.’ (lit. ‘The fishes are (??still) fed.’)

If an adjectival passive is uttered in such a context, and the underlying verb matches the action which is required to be done, *immer noch* is excluded. We already noted this fact in Section 3.3 in connection with Maienborn’s example (30), repeated here. The difference to (61) is that the task to be done is more implicitly given:

- (62) *Anna hat ihre Nachbarspflichten erfüllt. Der Briefkasten ist*  
 Anna has her neighbor-duties fulfilled the mailbox is  
 (??immer noch) geleert, ...  
 still emptied ...  
 ‘Anna has done her neighborly duties: the mailbox is (??still) emptied, ...’

In the light of this paper, the fact that *immer noch* is systematically excluded in ‘job-is-done’-contexts does not come as a surprise. The ‘job-is-done’-reading always requires two events, a task-creating event and a task-completing event. The task-creating event precedes and provides an occasion for the task-completing event. Thus, the utterance of an adjectival passive in a ‘job-is-done’-context amounts to a situation where all of the definitional characteristics of a script are met, and one might speak of the spontaneous creation of an “ad hoc script”.

Let us reconsider some more examples with which we came across in the beginning of the paper, but for which we actually did not offer yet an explanation.

- (63) a. *Das T-Shirt ist (??immer noch) gewaschen.*  
 the shirt is still washed

<sup>17</sup> See Portner (2007) for a precise account of how imperatives add properties to the addressee’s ToDo-list.

- 'The shirt is (??still) washed'  
b. *Der Rasen ist (??immer noch) gemäht.*  
the lawn is still mowed  
'The lawn is (??still) mowed'

Here, too, the respective utterances report on the results of "doing a job". As we noted above, the job comes about as a by-product of the normal course of events, i.e. of someone wearing a shirt or of the lawn simply growing. The examples fit into the overall picture: *immer noch* is ruled out because in each case, the denoted event is pointing to the final element of the chain consisting of a task-creating event and a task-completing event.

There is still one more case that should be discussed here. As noted by Kratzer (2000), for a certain class of verbs in German it holds that they too, when forming the basis of an adjectival passive predicate, give very bad results in combination with *immer noch*. These are verbs like *aufmachen*, made up of a so-called 'light verb' *machen* ('to do') and a particle denoting a property, e.g. *auf* ('open') or *zu* ('closed', 'shut'):

- (64) *Das Marmeladenglas ist (?? immer noch ) aufgemacht.*  
the jam-jar is ( still ) open+made  
'The jam jar is (?? still) opened.'

Kratzer (2000:10) gives a very sketchy explanation of these, admittedly tricky, cases in terms of incorporation and unpronounced light verb stems. Here, we will give a no less sketchy alternative explanation in terms of script-finality. The special behavior of these verbs in adjectival passives follows from the radical asymmetry of how information is distributed over the verb's morphological components: The speaker has chosen a lexical verb whose eventive component is as abstract ("light") as possible and whose stative component is as specific as possible. Hence the hearer, upon encountering such an adjectival passive, can tell that the event is presumably of little importance, and that it is rather the kind of state that the speaker wants to draw attention to. The event is not totally irrelevant, however, because if it was, the speaker would presumably have uttered (65):

- (65) *Das Marmeladenglas ist auf.*  
the jam-jar is open  
'The jam jar is open.'

Thus, from the use of a light verb with the particle *auf*, the hearer can conclude that the speaker is interested in communicating that the subject has been brought into a certain state, and that the way this happened is irrelevant to the speaker. This suggests a discourse situation in which the state was designated as a target. From

this, in turn, it follows that a designating (task-creating) event must have taken place beforehand. Since precedence and occasion hold, the implied task-creating event and the event denoted by (64) follow the course of a virtual (ad hoc) script. And the reason why *immer noch* is out is the same as before: the event referred to in (64) instantiates the script-final frame relative to such a script.

Let us close this section by an illustration of the layers of meaning involved in this example. Formally, we can put down the semantics of an adjectival passive built from a light verb with a particle as (66), where  $P$  stands for the property explicitly named by the verbal particle *auf*, e.g. in (64)  $P(x)$  stands for *open(x)*. As before, we regard the existence of the state  $s$  characterized by  $P$  to be the asserted part of the adjectival passive meaning, while the existence of an event  $e$  that brought about the state  $s$  is seen as an implicature.

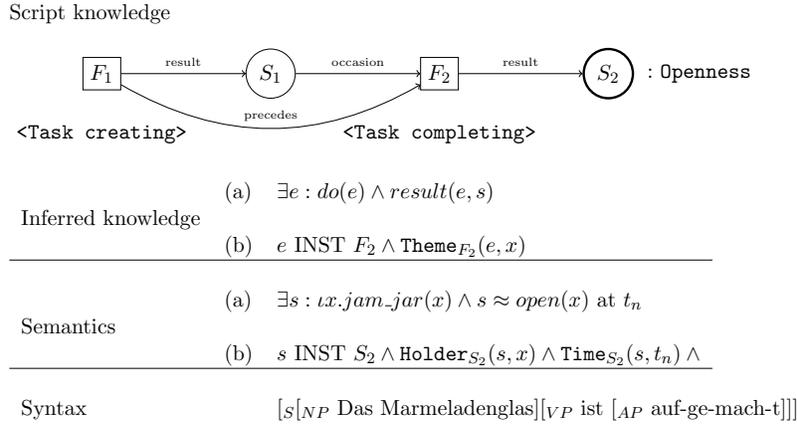
$$(66) \quad \begin{array}{ll} \exists s : s \approx P(x) \text{ at } t_n & \text{(Assertion)} \\ \exists e : do(e) \wedge result(e, s) & \text{(Implicature)} \end{array}$$

In words, the light verb *machen* denotes an unspecified activity,  $do(e)$ , which results in a state  $s$  that holds at reference time and which is characterized by the fact that  $P(x)$  holds.

Given this, we can describe the meaning of utterance (64) together with the involved script knowledge as illustrated in Fig. 5. Again, we have given a semantic representation both in terms of Kimian states (a) and in terms of stative frames (b). The frame  $F_1$  is the task creating frame forming a script together with the task completing frame  $F_2$ . In the kind of state  $S_1$ , the goal has been set, i.e. the task has been assigned. In states of kind  $S_2$ , the goal has been reached. The role  $\Theta_{S_2}$  is Holder, and  $\Theta_{F_2}$  is some kind of Theme. Utterance (64) denotes the state  $s$  which instantiates  $S_2$  and results from an event  $e$  instantiating  $F_2$ . A modification by *immer noch* is ruled out because  $F_2$  is the final event frame in this small script.

## 5 Conclusion

For *immer noch* to successfully combine with an adjectival passive, the denoted state has to be reversible. But this is not the full story: certain adjectival passives do not tolerate *immer noch* although they denote a reversible state. In this paper, we presented a solution to these “puzzling exceptions” (Kratzer). We diagnosed that their interpretation involves reference to a script in background knowledge. The exceptional cases are precisely those which most clearly exhibit the general pattern: If the adjectival passive denotes the resulting state of an event that is an instance of a script-final frame, then *immer noch* is not accepted. The script can be lexically evoked by the expressions used in the adjectival passive construction, or it is just contextually evoked in an ad hoc manner, as in ‘job-is-done’ contexts.



**Figure 5** Script configuration in the interpretation of (64)

We have given a precise account of the conditions under which *immer noch* is excluded in German adjectival passive sentences, which can be summarized as follows: If the underlying verb describes (a) a change of state where the resulting state must hold forever after, then *immer noch* is ruled out. If the verb describes (b) a change of state where the resulting state is in principle reversible, then combining it with *immer noch* is possible. If the verb describes (c) a change of state where the resulting state is in principle reversible, and the resulting state corresponds to the final state within a script, then *immer noch* cannot be used in general. This latter condition is the new contribution of the present paper. It is based on the fact that *immer noch* comes with the expectation that the result state will be undone at some time in the future, which stands in conflict with the expectation arising from script-finality that the current development is over. The use of *immer noch* is acceptable only on condition that the implicature following from script-finality of the state is denied. For this to be possible, *explicit* information is necessary, which may be given by contextual information.

On a more general level, this paper has examined the interplay of lexical semantics (German *immer noch*) and the semantics of a particular syntactic construction (the adjectival passive) with pragmatics in form of implicatures and script knowledge. We have developed a notion of scripts as a finite sequence of frames under the conditions of *precedence* and *occasion* of consecutive frames. The proposed integration of linguistic material with background frame and script knowledge is based on the central assumption that event kinds correspond to frames. Event kinds serve as a bridgehead in the interface between conceptual structure, which is organized in frames, and compositionally derived semantic form. This attempt to bring together

conceptual and truth-conditional semantics will hopefully prove fruitful in a better understanding of many more puzzling linguistic phenomena besides the particular case examined in this paper.

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