

Deconstructing the meaning of the German temporal verb particle *nach* at the syntax-semantics interface

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1 Introduction

In this talk, we want to address the issue that, in German, the verb particle *nach* in some cases creates an additional argument slot for a dative DP, such as in (1), whereas in other cases, such as in (2), it doesn't.

- (1) *Der Hund lief *(dem Hasen) nach.* → DP_{DAT} obligatory
 the dog ran the hare_{DAT} [nach]_{PTCL}
 "The dog chased the hare."
- (2) *Die Banane reifte (*dem Pfirsich) nach.* → DP_{DAT} impossible
 the banana ripened the peach_{DAT} [nach]_{PTCL}
 "The banana continued ripening after being picked (*the peach)."

Agenda of the talk

- ***Nach* as a presupposition trigger**

Nach has the capability of triggering a presupposition, i.e. an implicit assumption about the proposition uttered, that is not only temporally related to the assertion, but also in terms of content.

- **Semantics of *nach***

To work out a semantic description of *nach*, we take a look at the temporal preposition *nach* ("after"). Semantic structures will be displayed by means of a Discourse Representation Structures (DRSes; cf. Kamp and Reyle, 1993; Lechler and Roßdeutscher, 2009; Roßdeutscher and Kamp, 2010, and others).

Nach introduces a precedence relation between the asserted eventuality and the presupposed eventuality, and that it copies event/state properties of the eventuality under discussion.

- **Uniform syntactic analysis of verb particle *nach***

Then, we suggest a uniform syntactic analysis for the verb particle *nach* as

following Nicol (2002). In our analysis, *nach* modifies a functional head *w* in an extended VP shell.

- **Argument licensing of the verb particle *nach* is semantics-driven**
Despite a uniform syntactic structure of *nach*, different argument structures can emerge: *nach* with or without a dative DP. It will be shown that different argument structures are semantics-driven.
- **Towards one unique sub-lexical entry $\sqrt{\text{NACH}}$**

2 The temporal preposition *nach*

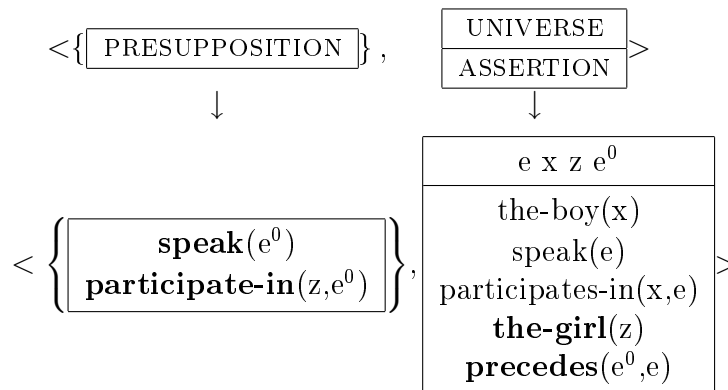
- (3) DP with an inherent event denotation:
- a. *Der Pfarrer predigte nach dem Gesang.*
the vicar preached after the singing_{DAT}
“The vicar preached after the singing.”
→ e: singing event PRECEDES e: the vicar preached
 - b. *Der Athlet trank nach dem Spiel eine Schorle.*
the athlete drank after the match_{DAT} a spritzer_{ACC}
“After the match, the athlete drank a spritzer.”
→ e: match (= playing ev.) PRECEDES e: the athlete drank a spritzer
- (4) *Nach* triggers a presupposition:
- a. *Der Junge sprach nach dem Mädchen.*
the boy spoke after the girl_{DAT}
“The boy spoke after the girl.”
→ e: the girl spoke PRECEDES e: the boy spoke
 - b. *Der Wirt verließ nach dem Gast die Kneipe.*
the landlord left after the guest_{DAT} the pub_{ACC}
“The Landlord left the pub after the guest.”
→ e: the guest left the pub PRECEDES e: the landlord left the pub

In (3-a), *nach* relates two events, namely the asserted event contributed by the VP headed by verb *predigen* (“to preach”) and the event contributed by the noun *Gesang* (“singing event”). The same holds for (3-b).

In contrast to (3), the DPs within the *nach*-PPs in (4) do not contribute any event description inherently. However, a presupposed event can be identified, i.e. in (4-a) the girl spoke and in (4-b) the guest left the pub.¹

¹In (4), the presuppositions are indicated by underlining.

(5) *Der Junge sprach nach dem Mädchen*, cf. (4-a)²:



The DRS in (5) is to be read as follows:

In the UNIVERSE, there is ...

- an **event** e ; and
- an **individual** x ; and
- an **individual** z ; and
- an **event** e^0 (\rightarrow triggered by *nach*).

It is ASSERTED that ...

- the individual x has the property of being **the boy**; and
- the event e is a **speaking** event; and
- the individual x **participates in** the event e ;³ and
- the individual z has the property of being **the girl**; and
- the event e^0 **precedes** the event e (\rightarrow presupposition trigger).

Further, it is PRESUPPOSED that ...

- the event e^0 is a **speaking event**; and
- the individual z **participates in** the event e^0 .

The preposition *nach* does not (e.g. locally) relate two entities. However, it temporally relates two eventualities, i.e. events or states. The relation is interpreted

²For simplicity reasons, past tense isn't represented here, as well as in further examples.

³The condition "participates-in" is supposed to be an underspecified notion for any kind of thematic role.

as a precedence relation in such a way that the asserted event is temporally **after** another (presupposed) event.

However, *nach* does not select for another VP but for a DP.⁴ The example in (3) shows that the DP complementing *nach* may inherently provide an event. But this need not be the case, as for example is the case in (4). In these examples, no event can be identified within the DP (i.e. violation of a selection restriction). However, *nach* triggers a presupposed event that is then temporally related to the asserted event.

Asking speakers for a description of the presupposed event triggered by *nach*, certainly everybody would agree that the event properties of the presupposed event are very similar to those of the asserted event.

Excursion

Evidence that *nach* relates eventualities comes from *-ung*-nominalizations which can be sortally ambiguous.⁵ The nominalization *Beschreibung* (“description”) may either be interpreted as an event or as a proposition. Similarly, the preposition *nach* can mean “after” or “according to”, i.e. denote a reference to a proposition.⁶ However, only with the reading “according to”, *nach* can also occur as a postposition. See (6).

- (6) a. *Der Mann verließ nach der Beschreibung das*
 the man left [nach] the description_{DAT} the
Gebäude.
 building_{ACC}
 1st reading: “After the man made a description (of something),
 he left the building.”
 2nd reading: “According to the description, the man left the
 building.”
- b. *Der Mann verließ der Beschreibung nach das*
 the man left the description_{DAT} according-to the
Gebäude.
 building_{ACC}
 “According to the description, the man left the building.”
 impossible: “After the man made a description (of something),
 he left the building.”

⁴The subordinating conjunction *nachdem* relates two VPs.

⁵For details, see Roßdeutscher and Kamp (2010).

⁶We don’t necessarily assume that the “according to”-*nach* originates in the same root.

The example in (6-a) is ambiguous. Either the temporal preposition *nach* (“after”) accesses the event reading or the propositional preposition *nach* (“according to”) accesses the propositional reading of the the *-ung*-nominalization. As only the propositional preposition *nach* can occur as a postposition, such as in (6-b), the event reading of the *-ung*-nominalization cannot be accessed.

Abstract entry for the temporal preposition *nach*

In (7), we tentatively propose a lexical entry of the preposition *nach* triggering a presupposed event.

$$(7) \quad \lambda z. \lambda e. < \left\{ \begin{array}{l} \mathbf{property}(e^0) \\ \mathbf{participates-in}(z, e^0) \end{array} \right\}, \left[\begin{array}{l} e^0 \ x \\ \hline \mathbf{property}(e) \\ \mathbf{participates-in}(x, e) \\ \mathbf{precedes}(e^0, e) \\ \mathbf{COPY}(\mathbf{property}(e), \mathbf{property}(e^0)) \\ \mathbf{COPY}(\mathbf{participates-in}(x, e), \mathbf{participates-in}(z, e^0)) \end{array} \right] \triangleright$$

There are two discourse referents denoting entities: *w* that needs to be unified with another discourse referent, e.g. the agent, and *z* in the λ -abstract.⁷ The DP that is applied to *nach* has to provide a discourse referent that unifies with *z* resulting in the *nach*-PP. There are also two events *e* and *e*⁰ (*e*⁰ is the presupposed event) that are temporally related by the precedence relation, which we assume constitutes the core meaning of *nach*. Here, *e* is to be identified by adjoining the PP to a VP providing the asserted event description (here: anticipated by the condition **property(e)**). The **COPY** requirement is to be understood as an instruction to approximate the properties of the presupposed event *e*⁰ to those of the asserted event *e*. This guarantees the copy effect.

Conclusions

The preposition *nach* ...

- temporally relates two **eventualities** (here: events);
- selects for a DP licensing **dative** case;
- **triggers a presupposition containing a preceding event, if no event is inherently available from the DP headed by *nach***;
- **approximates the meaning of the presupposed event to the meaning of the asserted event, i.e. it copies event properties.**

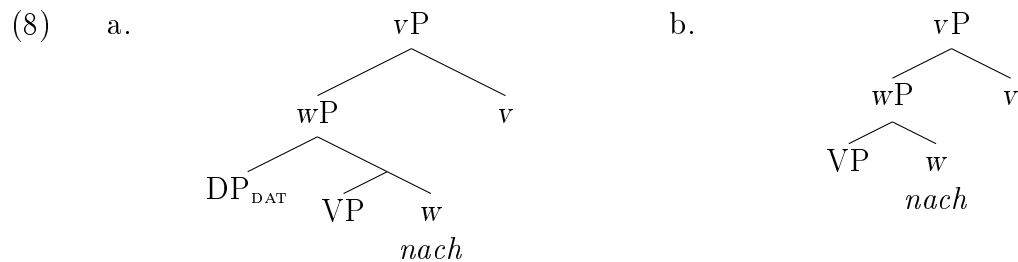
⁷We use the lambda calculus for syntactic and semantic composition.

3 The temporal verb particle *nach*

A proposal for the syntax of *nach* as a verb particle

In this talk, we argue that the verb particle *nach* modifies a functional head *w* in an extended VP shell resulting in the verb particle *nach*. The functional projection *wP* intervenes between *vP* and VP. This analysis is in the spirit of the extended VP-shells analysis for verb particles proposed by Nicol (2002). The structures in (8) roughly sketch the possible constructions of the verb particle *nach*.

(8)-a shows the construction where *w* provides, next to VP, an additional argument slot for a dative DP in Spec-*wP*. (8)-b illustrates the construction where *w* does not create an additional argument next to VP. We further argue that in both constructions *nach* modifies a functional head *w* and that the argument structure of *nach*-verbs, outside of the underlying VP, (i.e. DP_{DAT} vs. \emptyset) depend on the semantic interpretation of *nach* triggered by the contribution of the VP in context. To be brief: dative licensing by *nach* is semantics-driven.



Hypotheses:

If *nach* relates events,
a dative DP **is** licensed.

If *nach* relates states,
a dative DP **is not** licensed.

Examples:

Der Hund lief dem Hasen nach.
cf. sentence in (1)

Die Banane reifte nach.
cf. sentence in (2)

In the following, we take a closer look at some particle verbs with *nach* to substantiate our hypothesis.

3.1 *Nach*-verbs licensing a dative DP

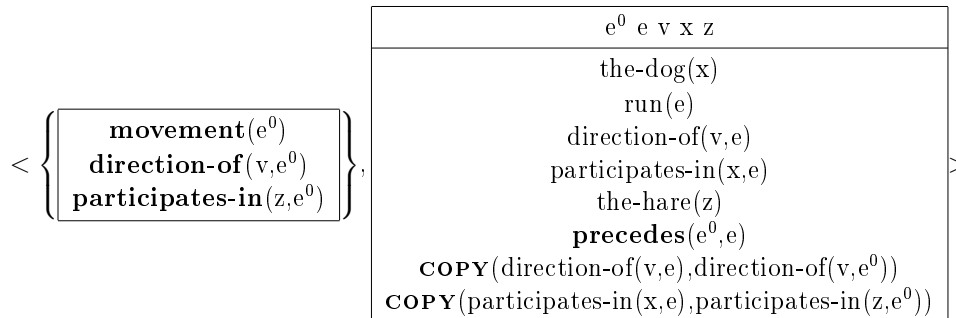
3.1.1 Copy direction *nach*

(9) *Der Hund lief dem Hasen nach.*
 the dog ran the hare_{DAT} [*nach*]_{PTCL}
 “The dog chased the hare.”

(10) *Das Postamt sandte dem Kunden den Brief nach.*
 the post office sent the client_{DAT} the letter_{ACC} [*nach*]
 “The post office forwarded the letter to the client.”

The DRS in (11) describes the situation in (9).

(11) *Der Hund lief dem Hasen nach*, cf. (9):



We assume that in the context of a predicate expressing a direction, the verb particle *nach* triggers a presupposed event describing the movement of an entity specifying the direction of the asserted event. The entity participating in the presupposed event is expressed by the dative DP; thus the dative DP is licensed semantically.

The core meaning component of *nach*, as in the preposition examples, is the precedence relation, which is expressed by the condition **precedes**. It means that there is a presupposed event e^0 that is before the asserted event e .

The verbs in (9) and (10) both are predicates to which a direction v can be attributed (cf. condition **direction-of**(v,e)). This is attested by (12) and (13), where *zu*-PPs specify a direction.

(12) *Der Hund lief zum Tor.*
 the dog ran to-the gate_{DAT}
 “The dog ran to the gate.”

- (13) *Das Postamt sandte den Brief zum Kunden.*
 the post office sent the letter_{ACC} to-the client_{DAT}
 “The post office sent the letter to the client.”

We represent the copy requirement of *nach* by formulating the copy instruction **COPY**. It copies a certain property of e and assigns it to e^0 , at least approximates the property. In this case, it is the direction property of the event e .

The condition **participates-in** in (11) describes a relation of discourse referents to the event under discussion. The condition **participates-in(x,e)** anticipates the contribution of little v introducing in these cases an agent. However, the condition **participates-in** is underspecified with respect to a certain semantic role. Considering the fact that the asserted event here will have at least one participant, we assume that the presupposed event e^0 also has at least one participant. The copy instruction is also applied to the condition **participates-in(x,e)** resulting in the presupposed condition **participates-in(z,e⁰)**.⁸ By this means, it creates an additional argument slot for a discourse referent z that participated in the presupposed event e^0 . This discourse referent z has then to be provided by a dative DP.

Note that we further assume that the presupposed event e^0 has to be of the type movement, which we express by the condition **movement(e⁰)** in the presupposition. Thus, movement of the entity provided by the dative DP has to be justifiable. In (14) this movement restriction becomes obvious.

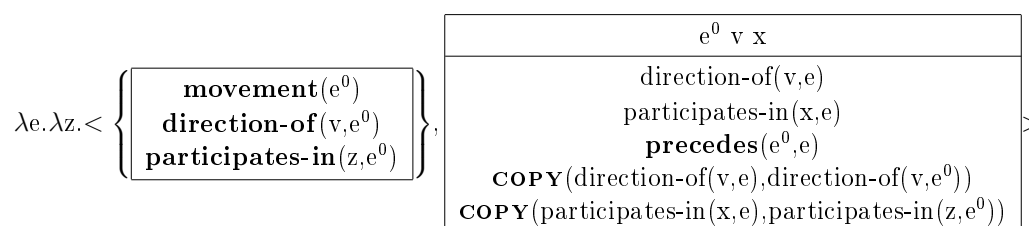
- (14) *Das Mädchen schaute dem Schiff nach.*
 the girl looked the ship_{DAT} [nach]
 “The girl gazed after the ship.”

Abstract *nach* entry for copy direction

From the examples above, we deviate an abstract *nach* entry for the copy direction meaning.

- (15) *nach* entry for copy direction:

⁸Note that both **participates-in** relations do not necessarily refer to the same semantic role, e.g. agent. In (10) for instance, “**participates-in(x,e)**” refers to the agent role, whereas “**participates-in(z,e⁰)**” refers to the theme role.



3.1.2 Copy manner *nach*

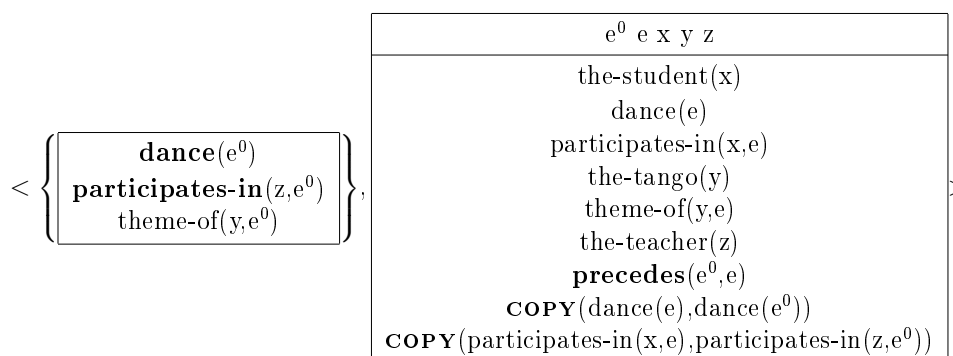
Another type of copy operation triggered by *nach* can be observed for the manner specification of an event. Here, we also encounter an additional dative DP. See examples (16) and (17).

- (16) *Der Schüler tanzte der Lehrerin den Tango nach.*
 the student danced the teacher_{DAT} the tango_{ACC} [nach]
 “The student copied the dancing of the tango from the teacher.”

- (17) *Der Minister sprach dem Präsidenten den Eid nach.*
 the minister spoke the president_{DAT} the oath_{ACC} [nach]
 “The minister repeated the speaking of the oath after the president.”

In (16) and (17), a copy of the manner of the event is triggered, resulting in a copy of the (abstract) entity.

- (18) *Der Schüler tanzte der Lehrerin den Tango nach*, cf. (16):



Again, we find the core meaning of *nach* (precedence relation) expressed by the condition **precedes** triggering the presupposed event e^0 .

The copy instruction **COPY** approximates properties of the presupposed event e^0 to properties of the event e from the underlying VP. In this case, the **manner**

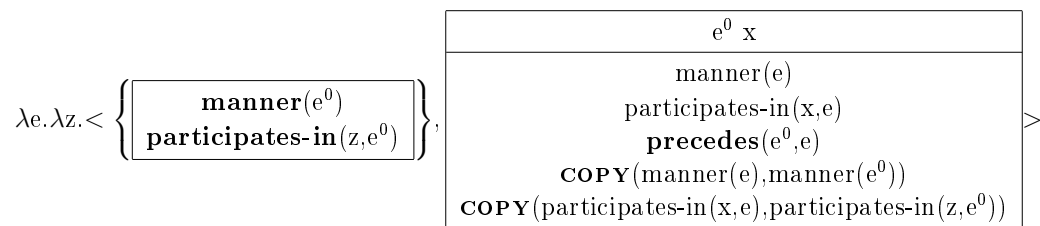
and the **participates-in** conditions are copied. This is similar to the previous examples, where the direction and the **participates-in** conditions were copied. Note that the inference of a second tango coming into existence results from the fact that the event is copied.

As encountered in the copy direction examples, the condition **participates-in**(z,e⁰) creates an additional argument slot for the dative DP.

Abstract *nach* entry for copy manner

We deviate an abstract *nach* entry for the copy manner meaning as in (19).

(19) General *nach* entry for copy manner:



3.1.3 Challenging patterns (for copy direction *nach*)

Relative movement of the participant in the presupposed event e⁰

We assume that the copy operation triggered by *nach* is only interpretable in the context of movement. However, movement does not necessarily be “absolute”. In (20), the city does not move, however it moves relatively to the departing traveller.

- (20) *Der im Zug sitzende Reisende blickte der Stadt lange*
 the in-the train sitting traveller looked the city_{DAT} long
nach.
 [nach]
 “The traveller sitting in the train gazed after the city for a long time.”

Inherent direction specification from the dative DP

A special case can be observed if the dative DP itself contributes a direction inherently, e.g. a signpost. See example (21).

- (21) *Der Wanderer marschierte dem Wegweiser nach.*
 the hiker marched the signpost_{DAT} [nach]
 “The hiker followed the signpost.”

In this case, the signpost contributes a direction specification. Thus, a presupposed event specifying a direction is unnecessary. The inherent direction specification of the dative DP may even delete the presupposition.

However, the interpretation of *nach* seems only plausible in the context of movement, either presupposed by *nach* as in (20) or contributed by the asserted event description, e.g. a running event as in (21).

In (22), where movement cannot be assumed, neither for the hiker nor for the signpost, the interpretation of *nach* copying the direction specification fails.

- (22) # *Der an der Kreuzung stehende Wanderer blickte dem Wegweiser nach.*
 the at the crossroad standing hiker looked the signpost_{DAT}
 [nach]
 intended: “The hiker standing at the crossroad looked in the direction of the signpost.”

Omission of the dative DP

Note that the dative DP can hardly be omitted. In (23), the discourse referent *z*, which should be described by the dative, can be locally bound by the agent description Pied Piper. However, we consider this construction to be exceptional.

- (23) *Der Rattenfänger ging voran und alle rannten nach.*
 the Pied Piper went ahead and everybody ran [nach]
 “The Pied Piper went ahead and everybody followed.”

3.1.4 Conclusions

If the verb particle *nach* accesses **event properties** ...

- a **presupposed event** e^0 is triggered;
- the presupposed event e^0 **precedes** the asserted event e ;
- **event properties** of the asserted event e are **copied** and assigned to the presupposed event e^0 ;
- an **additional argument slot** z for a dative DP is created by means of applying the **COPY** instruction to the **participate-in** relation;

- certain conditions may additionally need to be met (e.g. movement of the discourse referent provided the dative DP).

3.2 *Nach*-verbs that do not license a dative DP

3.2.1 Copy creation *nach*

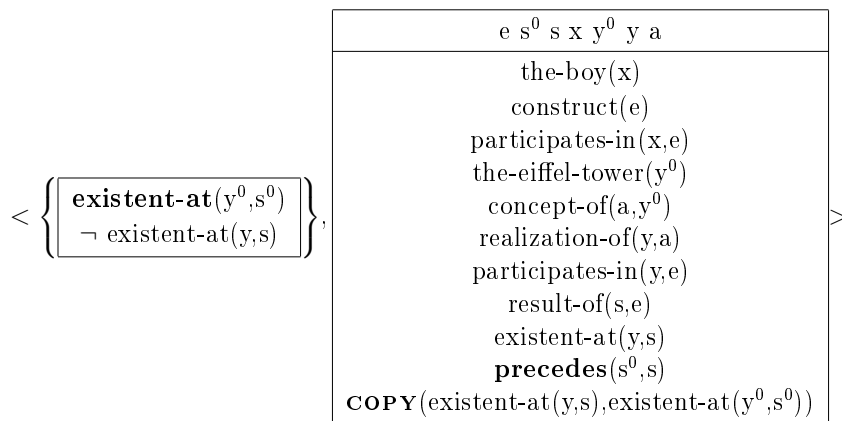
In another group of *nach* verbs, *nach* does not license a dative DP. See the examples in (24) and (25).

(24) *Der Junge baute den Eiffelturm nach.*
 the boy built the Eiffel Tower_{ACC} [nach]
 “The boy built a copy of the Eiffel Tower.”

(25) *Der Fälscher machte den Geldschein nach.*
 the forger made the banknote_{ACC} [nach]
 “The forger made a copy of the banknote”.

The DRS in (26) represents the example from (24).

(26) *Der Junge baute den Eiffelturm nach*, cf. (24):



The syntactic difference between *nach* in (24) and (25) and *nach* in (17) and (16) is that in the latter case *nach* doesn't create an additional argument slot for a dative DP.⁹

⁹If one forces a dative DP to be possible, e.g. *der Junge baute Gustave Eiffel den Eiffelturm nach*, we expect this to be an enforced access of *nach* on the manner properties of the event description of *bauen*. Then, the interpretation is not that the boy copies the Eiffel Tower, but

Our claim here is that in (24) and (25), *nach* does not relate events but result states that hold for instances of **the same concept** or **abstract plan** and thus, no further argument slot is created by *nach*.

As with the examples discussed in the previous section, the core contribution of *nach* is the precedence relation, which is expressed by **precedes**. However, in these cases, it does not relate events, but result states.

The copy instruction **COPY** approximates **result state properties** of the presupposed state s^0 to result state properties of the asserted state s .

But why does *nach* not create an additional argument slot in (24) and (25)? An essential assumption here is that an object has an abstract plan, or concept. This is expressed by the condition **concept-of(a,y⁰)**.¹⁰

Further, in (24) and (25), we encounter creation verbs. As a creation process (here described by the manner description **construct(e)**) is the realization of an abstract plan of something (cf. **realization-of(y,a)**), a result state s in which an object y exists has to be accessible at a certain point in time (**existent-at(y,s)**).

In this case, i.e. if *nach* attaches to a creation verb, *nach* does not relate events but result states holding for the objects created. As both the original and the copied object refer to **the same concept**, no additional argument slot for a dative DP is licensed by *nach*.

Evidence for the assumption that it's not the event properties that are copied are given in (27) and (28). Objects such as the Alps or a knee joint are naturally not built by someone. Thus, no event can be copied in these cases.

(27) *Der Modelleisenbahner bastelte die Alpen nach.*
 the model railroader tinkered the Alps_{ACC} [nach]
 "The model railroader tinkered a copy of the Alps."

(28) *Der Medizintechniker baute das Kniegelenk nach.*
 the medical engineer built the knee joint_{ACC} [nach]
 "The medical engineer built a copy of the knee joint."

On the other hand, result state properties of the object, even if there is only a mental representation of the object, have to be available. See (29-a) and (29-b).

Gustave Eiffel's manner of building the Eiffel Tower. That there will be a second Eiffel Tower anyway can be inferred from the event description that is copied.

¹⁰In (26), the real Eiffel Tower in Paris is represented by the discourse referent y^0 .

- (29) a. # *Als der Tüftler noch dabei war eine Zeitmaschine zu entwickeln, baute der Assistent sie schon nach.*
 as the tinkerer still at was a time machine_{ACC} to develop built the assistant_{NOM} it_{ACC} already [nach]
 intended: “When the tinkerer was still developing a time machine, the assistant already built it.”
- b. *Als die Lehrerin noch dabei war einen Tango zu tanzen, tanzte der Schüler ihn ihr schon nach.*
 as the teacher still at was a tango_{ACC} to dance danced the student_{NOM} it_{ACC} her_{DAT} already [nach]
 “When the teacher was dancing the tango, the student already copied the teacher’s dancing of the tango.”

In (29-a), result state properties of the time machine are not yet available as it is still in the process of development; thus, (29-a) is not interpretable. However in (29-b), which is an instance of copy manner, no result state properties need to be available as the student can already copy the teacher’s dancing of the tango, even if the teacher has not finished the tango yet.

Excursion

Further evidence for the availability of result state properties from creation verbs comes from low applicatives. See (30-a) and (30-b).

- (30) a. *Die Mutter strickte dem Baby die Mütze nach.*
 the mother knitted the baby_{DAT:ben} the cap_{ACC} [nach]
 “The mother knitted a copy of the cap for the baby.”
- b. # *Die Mutter strickte dem Baby der Oma die Mütze nach.*
 the mother knitted the baby_{DAT:ben} the granny_{DAT:nach} the cap_{ACC} [nach]
 intended: “The mother copied the granny’s knitting resulting in a cap for the baby.”

In (30-a), it is very unlikely that the mother copies the knitting event from the baby, however what the mother does is to copy the result state properties of a previously existing cap by knitting a second cap. Nevertheless, *nach* triggers a precedence relation between two result states and it also copies result state properties.

Note that an additional dative DP, such as in (30-a), has to be interpreted as

a low applicative expressing a possession relation between the two individuals. In (30-b), the interpretation fails not only because of two ambiguous datives but also because *nach* relates event properties which seem to conflict with an underlying low applicative relating entities.

Abstract *nach* entry for copy creation

In (31), we derive an abstract entry for *nach* meaning copy creation. The condition **RS-property**(y,s) is to be read as “result state property of individual y at state s”.

(31) *nach* entry for copy creation:

$\lambda s. <$	RS-property (y ⁰ ,s ⁰)	,	<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-bottom: 1px solid black; padding: 2px 5px;">s⁰ y⁰ y</td> </tr> <tr> <td style="padding: 2px 5px;">RS-property(y,s) precedes(s⁰,s) COPY(RS-property(y,s),RS-property(y⁰,s⁰))</td> </tr> </table>	s ⁰ y ⁰ y	RS-property(y,s) precedes (s ⁰ ,s) COPY (RS-property(y,s),RS-property(y ⁰ ,s ⁰))	>
s ⁰ y ⁰ y						
RS-property(y,s) precedes (s ⁰ ,s) COPY (RS-property(y,s),RS-property(y ⁰ ,s ⁰))						

3.2.2 Continuation *nach*

(32) *Die Banane reifte nach.*
the banana ripened [nach]
“The banana continued ripening after being picked.”

(33) *Die Glocke klang nach.*
the bell sounded [nach]
“The bell lingered.”

The DRS in (34) represents the example in (32).

(34) *Die Banane reifte nach*, cf. (32):

$<$	is-ripening-at (y,s ⁰)	,	<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-bottom: 1px solid black; padding: 2px 5px;">y s⁰ s</td> </tr> <tr> <td style="padding: 2px 5px;">the-banana(y) is-ripening-at(y,s) precedes(s⁰,s) COPY(is-ripening-at(y,s),is-ripening-at(y,s⁰))</td> </tr> </table>	y s ⁰ s	the-banana(y) is-ripening-at(y,s) precedes (s ⁰ ,s) COPY (is-ripening-at(y,s),is-ripening-at(y,s ⁰))	>
y s ⁰ s						
the-banana(y) is-ripening-at(y,s) precedes (s ⁰ ,s) COPY (is-ripening-at(y,s),is-ripening-at(y,s ⁰))						

Again, *nach* introduces a precedence relation between eventualities, in this case states. It accesses progressive state properties contributed by the underlying VP (i.e. the state for which holds that the banana is ripening) and triggers a presupposed pre-state s⁰ that shows the same progressive state properties as the asserted state s.

The approximation of the progressive state properties of the presupposed state to those of the asserted state is guaranteed by the **COPY** instruction which is applied to the **progressive state properties**.

As the progressive state property accessed hold for one and the same object, i.e. one banana, no further argument slot for a dative DP is created.

Abstract *nach* entry for continuation

The condition **PS-property(y,s)** means “progressive state property of individual y at state s”.

(35) *nach* entry for continuation:

$$\lambda s. < \left\{ \boxed{\text{PS-property}(y,s^0)} \right\}, \begin{array}{|l} \hline y \ s^0 \\ \hline \text{PS-property}(y,s) \\ \text{precedes}(s^0,s) \\ \text{COPY}(\text{PS-property}(y,s),\text{PS-property}(y,s^0)) \\ \hline \end{array} \triangleright$$

3.2.3 Conclusions

If the verb particle *nach* accesses **state properties** ...

- a **presupposed state** s^0 is triggered;
- the presupposed state s^0 **precedes** the asserted state s ;
- **result/progressive state properties** of the asserted state s are **copied** and assigned to the presupposed state s^0 ;
- **no additional argument** slot for a dative DP is created, as the state properties of s^0 and s hold for the **same** (concept of an) object.

4 Towards a core meaning: $\sqrt{\text{NACH}}$

Generalizing over the previous abstract entries for *nach*, we could imagine an entry for the root $\sqrt{\text{NACH}}$ (temporal) as in (36).

$$(36) \quad \lambda \alpha. < \left\{ \boxed{\text{property}(\alpha^0)} \right\}, \begin{array}{|l} \hline \alpha^0 \\ \hline \text{property}(\alpha) \\ \text{precedes}(\alpha^0,\alpha) \\ \text{COPY}(\text{property}(\alpha),\text{property}(\alpha^0)) \\ \hline \end{array} \triangleright \text{ for } \alpha \in \{\text{event},\text{state}\}$$

We identified the relation **precedes** as the core meaning component of $\sqrt{\text{NACH}}$. It may either relate events or states. It has also the capability to trigger a presupposition containing an eventuality of the same type as the asserted eventuality. Additionally, properties of the presupposed eventuality are approximated to those of the asserted eventuality by means of the **COPY** instruction.

Within this approach, the capability of the verb particle *nach* of licensing a dative DP can be explained on the basis of its semantics. If *nach* relates events an additional dative DP is licensed; if it relates states no additional dative DP is licensed.

5 Speculations about *w*: similar to a high applicative

The *w* projection seems similar, or closely related, to a high applicative projection. A high applicative relates an event to an individual via a benefactor relation, i.e. “to do something **for** someone/something” (e.g. Pytkänen, 2000; McIntyre, 2009, and others). In the same syntactic way, the verb particle *nach*, however indirectly, relates an event to an individual: the dative DP if it is possible. Otherwise, it relates a state description of a VP to a presupposed state description of (another realization the concept of) its participant. An indication for the similarity of *nach* modifying *w* and a high applicative is (37-c).

- (37) a. *Max trug Anna den Koffer.*
 Max carried Anna_{DAT:ben} the suitcase_{ACC}
 “Max carried the suitcase for Anna.”
- b. *Max trug Jamila den Koffer nach.*
 Max carried Jamila_{DAT:dir} the suitcase_{ACC} [nach].
 “Max carried the suitcase after Jamila.”
- c. # *Max trug Anna Jamila den Koffer nach.*
 Max carried Anna_{DAT:ben} Jamila_{DAT:nach} the suitcase_{ACC} [nach]
 intended: “Max carried the suitcase for Anna after Jamila.”

The example in (37-c) shows two dative DPs: one triggered by a high applicative and one triggered by *nach*. If *w* is an instance of a high applicative modified by $\sqrt{\text{NACH}}$, two dative DPs could not be licensed. However, the ungrammaticality might also be due to an ambiguity in the interpretation of the two dative DPs. In this case, the high applicative and *w*P would be independent projections and (37-c) is ungrammatical because of an interpretation related principle.

6 Conclusions

In this talk, we have ...

- worked out the core meaning of the temporal *nach*;
- described the capability of *nach* as a presupposition trigger;
- proposed a uniform syntactic analysis for *nach* making use of the extended VP shell hypothesis;
- shown that different argument structures can be explained by the semantic interpretation of *nach* in the context of the VP.

We have not addressed ...

- interfering parameters, such as a restitution effect (e.g. *nachschärfen* “to sharpen again”), a control/check reading (e.g. *nachprüfen* “to double-check”), or the ‘simple’ postponement (e.g. *nachfeiern* “to celebrate later”);
- other readings of *nach*, such as
 - direction only (preposition, e.g. *nach Genf* “to Geneva”);
 - proposition (preposition, e.g. *nach §1 BGB* “according to §1 BGB”);
 - information procurement (verb particle, e.g. *nachforschen* “to investigate”).

⇒ work in progress

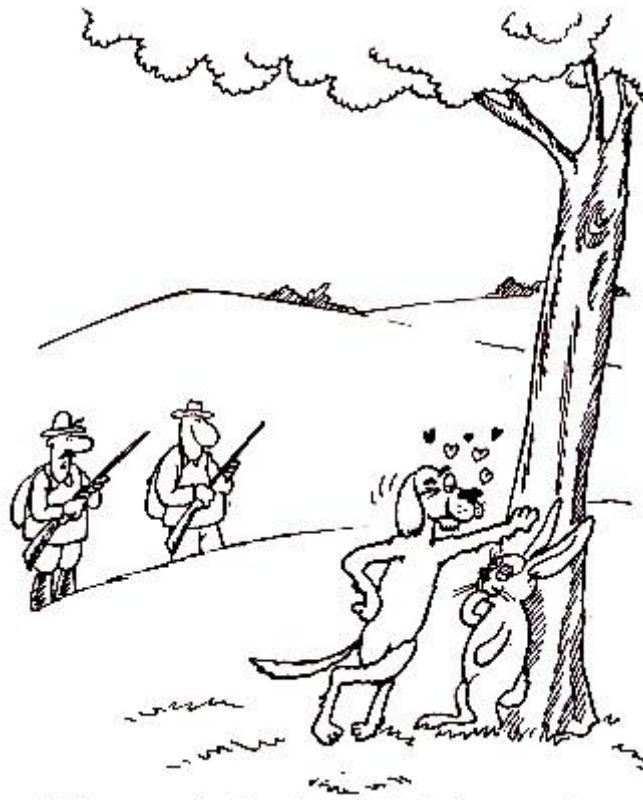
Thank you!

Framework

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Easter Special:

- (38) *Der Hund lief der Häslein nach.*
the dog ran the doe_{DAT} [nach]
“The dog courted the doe.”

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