

Pseudo-deictive predicates as event-kind modifiers¹

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Abstract. The principle of compositionality is challenged by linguistic phenomena whose interpretation requires the supplementation of compositional semantics with conceptual knowledge. As a case study, this paper explores a previously unnoticed phenomenon in German, exemplified by *Pia hat warm geduscht* ‘Pia took a warm shower’. In examples such as this, the target of the adjectival predicate must be pragmatically inferred—in this case, the water used for showering. I argue that this phenomenon can be accounted for by treating the adjective as an adverbial that is pseudo-incorporated into the verbal cluster, thereby motivating an analysis as an event-kind modifier in terms of underspecification. More precisely, the adjective is conceived of as a hybrid between an event-kind modifier and an individual-kind modifier: it determines the subtype of an underspecified individual kind introduced compositionally, which in turn constrains the event kind introduced by the verb. Overall, this study supports the view that the interaction between compositional semantics and conceptual knowledge is an integral part of meaning constitution: conceptual knowledge is integrated at well-defined points determined by the compositional structure itself, particularly in head-related modification.

Keywords: compositionality, modification, depictives, adverbials, event semantics, event kind, individual kind, meaning enrichment, underspecification, pseudo-incorporation.

1. Introduction

The principle of compositionality has proven to be key to the combinatorial nature of linguistic meaning (e.g., Pagin and Westerstål, 2011). However, the notion of strict compositionality is challenged by a growing range of linguistic phenomena. These phenomena indicate that natural language interpretation goes beyond a meaning construction based purely on grammar: the interpretation of a complex expression may allow us to draw on conceptual knowledge to adhere to the selectional restrictions of a predicate (e.g., Asher, 2011). This raises the question of how the reliable tenet of compositionality can be reconciled with the impact of conceptual knowledge. In contemporary linguistics, this challenge has typically been addressed in terms of coercion and underspecification.

As a case study, I discuss a phenomenon in German that has previously gone largely unnoticed. This phenomenon arises from a particular use of adjectives; consider *warm* ‘warm’ in (1).

- (1) Pia hat warm gegessen.
Pia has warm eaten
‘Pia had a warm meal.’

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As a preliminary (and deliberately naïve) approximation, the meaning of (1) can be paraphrased as ‘Pia ate something that was warm’. The property described by the uninflected adjective is ascribed to the food that Pia ate. The food, however, is not overtly introduced in the syntax but is pragmatically inferred. Accordingly, *warm* ‘warm’ cannot be conceived of as an attributive modifier as in (2), lacking both an overt argument and inflection. The lack of inflection also rules out an elliptical structure like (3), in which the adjective functions as a direct object. Finally, the adjective in (1) does not qualify as a standard depictive, which is uninflected but generally requires its compositional target to be overtly realized; compare (4).

- (2) Pia hat die warm-e Suppe gegessen.
 Pia has the warm-ACC.F.SG soup eaten
 ‘Pia ate the warm soup.’
- (3) Pia hat Warm-es gegessen.
 Pia has warm-ACC.N.SG eaten
 ‘Pia ate something warm.’
- (4) Pia hat die Suppe_i warm_i gegessen.
 Pia has the soup warm eaten
 ‘Pia ate the soup warm.’

In (1), the verb provides the only means of integrating *warm* ‘warm’ into the compositional structure of the sentence. The preferred interpretation, however, makes an analysis of *warm* ‘warm’ as an event-related modifier directly linked to the event argument implausible. The property applies to the food rather than to the eating event. A straightforward compositional integration of the adjectival predicate thus seems impossible. Conceptual knowledge is brought in to comply with the selectional restrictions of *warm* ‘warm’. Nevertheless, examples like (1) are generally judged acceptable by native speakers.

The phenomenon illustrated in (1) has not yet been discussed in the literature. Haider (1997, 2013), however, notes that depictive predicates may be used without an explicit target, without elaborating further.² In light of this, I term adjectives used as in (1) as *pseudo-depictives*.³

The compositionality puzzle posed by pseudo-depictives cannot be reduced to the idiomatic use of particular lexemes. In (1), *warm* ‘warm’ can be replaced by a wide range of other adjectives: *kalt* ‘cold’, *salzig* ‘savory’, *süß* ‘sweet’, *vegan* ‘vegan’, *vegetarisch* ‘vegetarian’,

² According to Haider (1997: 6, 2013: 174/175), in examples like (i), the adjective *unbekleidet* ‘undressed’ may modify either the doctor or the patients, even in the absence of the direct object.

(i) Dieser Arzt_i untersucht (Patienten_i) nur unbekleidet_{i/j}. Haider (2013: 174, (1e))
 this doctor examines (patients) only undressed

³ The term *pseudo-depictive* is also intended to highlight the parallel with so-called pseudo-resultatives, which likewise lack an overt target of predication (Levinson, 2010), cf. *Der Autor hat gruselig geschrieben* ‘The author wrote an eerie text’. Nevertheless, pseudo-depictives and pseudo-resultatives are clearly distinct phenomena, differing in their interpretation and combinatorics. As with standard resultative predicates, pseudo-resultatives denote a property that the target has at the end of the event described by the verb: the writing event results in an eerie text. By contrast, pseudo-depictives express a property that their target has during the course of the event. In (1), the food is warm from the very beginning; the eating event does not result in warm food.

gesund ‘healthy’, *ungesund* ‘unhealthy’, *fettig* ‘fatty’, *glutenfrei* ‘gluten-free’, *histaminarm* ‘low in histamine’, *vitaminreich* ‘rich in vitamins’, *kalorienarm* ‘low in calories’, *italienisch* ‘italian’, *chinesisch* ‘chinese’, *indisch* ‘indian’, among others. All of these adjectives are interpreted in the same way as *warm* ‘warm’: they target the food that Pia ate. However, pseudo-depictives may also target other entities involved in the eating event. In (5) and (6), the price of the meal and the premises of the eating event are inferred as targets of the predication. *Schick*, for instance, permits the interpretation that the restaurant in which Pia ate was elegant.

- (5) Pia hat günstig / teuer gegessen.
Pia has inexpensive / expensive eaten
'Pia had an inexpensive / expensive meal.'
- (6) Pia hat schick / schäbig / ungemütlich gegessen.
Pia has elegant / dingy / uncomfortable eaten
'Pia ate at an elegant / dingy / uncomfortable place.'

Pseudo-depictives do not rely on a particular verb either, as shown in (7)–(11).

- (7) Pia hat warm geduscht.
Pia has warm showered
'Pia took a warm shower.'
- (8) Pia hat ein Baby warm gebadet.
Pia has a baby warm bathed
'Pia bathed a baby in warm water.'
- (9) Pia hat das Baby warm angezogen.
Pia has the baby warm dressed
'Pia dressed the baby in warm clothes.'
- (10) Pia hat das Baby warm zugedeckt.
Pia has the baby warm covered
'Pia covered the baby with a warm blanket.'
- (11) Pia hat warm geschlafen.
Pia has warm slept
'Pia slept in a warm sleeping environment.'

The outlined range of examples show that the phenomenon under discussion is not a matter of lexicalized exceptions. It is widespread (at least in German) and can be formed with a variety of adjectives and verbs. This indicates that pseudo-depictives rely on productive combinatorial and interpretative mechanisms.⁴

⁴ In contrast to German, pseudo-depictives are only marginally attested in English (e.g., *Pia ate vegan*). This asymmetry may be related to the fact that English adverbials are typically marked by the suffix *-ly*, whereas in German the morphological form does not indicate whether an adjective is used as an adverbial or depictive. I propose an analysis that treats pseudo-depictives as hybrids between individual-kind modifiers and event-kind

Some of the preceding examples may give the impression that the target of a pseudo-depictive coincides with an (implicit) argument of the verb. Examples like (11), however, provide strong evidence against this assumption. In this example, the room temperature, a blanket, or a sleeping bag may be identified as the target of *warm* ‘warm’. These targets clearly do not coincide with an (implicit) argument of the intransitive verb *schlafen* ‘sleep’. The identification of the target thus does not depend on the verb’s semantic structure, but rather on conceptual knowledge associated with the event: the inferred target must be part of the (broader) event structure, but it does not necessarily correspond to a canonical event participant.⁵ Pseudo-depictives constitute a clear case of meaning enrichment, insofar as conceptual knowledge is used to satisfy their selectional restrictions left unsatisfied by the overt linguistic material.⁶

Although conceptual knowledge determines the identification of the pseudo-depictive’s target, the meaning enrichment is constrained beyond what can be attributed to conceptual plausibility alone. Conceptual plausibility by itself is not sufficient to ensure the acceptability of pseudo-depictives. (12) and (13) are deviant, even though it is entirely plausible that the food Pia ate was moldy and that the beverage she drank was warm. This points to licensing conditions and interpretive constraints that are grounded in the grammatical structure of the sentence.

(12) #Pia hat schimmelig gegessen.
Pia has moldy eaten

(13) #Pia hat warm getrunken.
Pia has warm drunk

In sum, pseudo-depictives challenge both the syntax–semantics and the semantics–pragmatics interfaces, raising three key questions: (Q1) How are pseudo-depictives integrated into the sentence’s compositional structure? (Q2) How is their meaning enrichment licensed? (Q3) How is their meaning enrichment constrained? This paper tackles these questions. Section 2 rules out two potential analyses of pseudo-depictives. Section 3 explores the syntactic base position of pseudo-depictives and argues that they are pseudo-incorporated into the verbal cluster. Section 4 provides a detailed investigation of their interpretation. The central result of this section is that pseudo-depictives function as hybrids between individual-kind modifiers and event-kind modifiers: they determine the subtype of an otherwise underspecified individual kind, which in turn constrains the event kind introduced by the verb. This type of event-kind formation imposes crucial interpretive and combinatorial constraints. Section 5 develops a compositional analysis of pseudo-depictives and accounts for the meaning enrichment in terms of underspecification, which emerges from the head-related modification. Section 6 identifies several open questions and Section 7 concludes the paper.

modifiers. This hybrid interpretation may depend on the morphological indeterminacy found in German and may therefore be inhibited by the overt marking of adverbials in English (Sophie von Wietersheim, p.c.).

⁵ Pseudo-depictives should not be confused with superficially similar cases that, by contrast, involve passive constructions (e.g., *dass die Suppe nackt gegessen wurde* ‘that the soup was eaten naked’) and modal infinitives (e.g., *dass die Suppe nackt zu essen ist* ‘The soup is to be eaten naked.’). These examples likewise lack an overt target of predication. However, they behave completely differently due to their syntactic structure. In particular, they require the depictive predicate to target the unexpressed subject (e.g., Müller, 2004). Such an interpretation, however, is not available for pseudo-depictives: pseudo-depictives cannot target the verb’s external argument.

⁶ I use the term *meaning enrichment* to refer to the supplementation of compositional semantics with conceptual knowledge, without committing the term a priori to any particular theoretical approach.

2. Ruling out possible approaches to pseudo-depictives

This section rules out two potential analyses of pseudo-depictives.

2.1. Excluding an elliptical structure

As mentioned, Haider (1997, 2013) notes that depictive predicates can be used without an explicit target of predication. This raises the question of whether pseudo-depictives instantiate an elliptical structure, in which the target of predication is elided from an otherwise regular depictive construction. Such an approach would be appealing because it offers straightforward answers to (Q1) and (Q2). The following points, however, clearly show that pseudo-depictives cannot be reduced to standard depictives whose target has been elided.

1. Standard depictive predicates share an argument with the main verb (e.g., Rothstein, 2011). Pseudo-depictives differ in that they do not obligatorily target an (implicit) argument of the verb, as shown by the examples above; see in particular (11). The inferred target need not correspond to any argument of the verb, as would be required for standard depictives.

2. In German, standard depictives establish a temporal relation: the state in which the individual possesses the property described by the depictive temporally coincides with the event described by the verb. Standard depictives can thus be paraphrased using a temporal subordinate clause introduced by *während* ‘while’ (Schäfer, 2013: 75); see (14). By contrast, the interpretation of pseudo-depictives lacks a temporal relation. Unlike (14), the meaning of (15) is not adequately captured by a paraphrase that conveys co-temporality characteristic of standard depictives.

(14) Pia hat die Suppe_i warm_i gegessen.
 Pia has the soup warm eaten
 ≈ ‘Pia ate the soup while it was warm.’

(15) Pia hat warm gegessen.
 Pia has warm eaten
 ≠ ‘Pia ate something while it was warm.’

3. Standard depictives are restricted to adjectives denoting non-inherent, transitory properties (Rothstein, 2011). Pseudo-depictives, by contrast, are not limited to such properties and often describe inherent, permanent ones; see the list of alternatives to *warm* mentioned above.

4. In German, standard depictives are base-generated in the middle field. Pseudo-depictives, by contrast, are pseudo-incorporated into the verbal cluster, as argued in Section 3. They thus do not pattern syntactically with standard depictives.

2.2. Excluding coercion

The coercion approach is one of the two most influential approaches to meaning enrichment. On this approach, meaning enrichments are treated as irregular reinterpretations triggered by semantic conflicts (e.g., Asher, 2011; Pustejovsky, 2011): they occur only in those cases where

they are required to rescue the sentence's interpretability. Relevant semantic conflicts arise between a predicate and its argument when the argument fails to satisfy the predicate's selectional restrictions. A well-known strategy for resolving such conflicts is the interpolation of an additional entity that may satisfy the predicate's selectional restrictions. In (16a), for instance, an event is interpolated to adhere to the selectional restrictions of *begin* that are disregarded by *the book* (Asher, 2011; Pustejovsky, 2011); in (16b), a suitable attitude holder is interpolated to resolve the conflict between *intentionally* and *the blanket* (Buscher, 2018).

- (16) a. Pia began the book.
b. The picnic blanket is intentionally lying in the shade.

At first glance, pseudo-depictives appear to fit within a coercion-based approach: the adjectival predicate lacks an appropriate argument satisfying its selectional restrictions, and the resulting conflict is resolved by interpolating an additional entity that satisfies those restrictions. However, ambiguous examples like (17) render a coercion-based analysis implausible.

- (17) Pia hat die Thermoskanne heiß ausgespült.
Pia has the thermos.bottle hot rinsed.out
a. 'Pia rinsed out the thermos bottle while the thermos bottle was hot.'
b. 'Pia rinsed out the thermos bottle with hot water.'

Example (17) allows a fully compositional interpretation. *Heiß* 'hot' can be interpreted as a standard depictive, with *die Thermoskanne* 'the thermos bottle' serving as its compositional anchor. That is, the reading in (17a) involves no semantic conflict. Although the predicate's selectional restrictions are met by overt linguistic material, *heiß* 'hot' can also be interpreted as pseudo-depictive, targeting an inferred entity (namely, the water); see (17b). This ambiguity indicates that the meaning enrichment required by pseudo-depictives is not a last-resort strategy in order to rescue the interpretation of conflicting expressions. Instead, adjectival predicates can be interpreted as pseudo-depictives even when an appropriate argument is compositionally provided. For this reason, a coercion-based analysis of pseudo-depictives can be ruled out.

To sum up, neither an ellipsis-based analysis nor an approach in terms of coercion can account for the peculiar interpretation of pseudo-depictives. In what follows, I develop an analysis in terms of underspecification, the second of the two leading approaches to meaning enrichment.

3. The syntactic attachment site of pseudo-depictives

This section explores the syntactic base position of pseudo-depictives to lay the compositional groundwork for an underspecification analysis. Diagnostics such as sentential negation, focus projection, and scrambling (see Frey and Pittner 1998; Haider 2010; Maienborn et al. 2016) provide evidence that pseudo-depictives form part of the verbal cluster (VC).

1. For sentential negation, the negation particle *nicht* 'not' is required to immediately precede the verbal cluster, thereby marking the boundary between the verbal cluster and the middle field. In fact, *nicht* 'not' cannot occur within the verbal cluster. The example in (18a) shows that sentential negation is available when the negation particle precedes the pseudo-depictive, yielding the interpretation that it is not the case that Pia had a warm meal. By contrast, placing

the negation particle between the pseudo-depictive and the verb yields ungrammaticality; see (18b). This placement of *nicht* does not license even narrow scope over the verb—not even in examples like (19), where such a reading would otherwise be plausible.⁷

- (18) a. dass Pia nicht warm gegessen hat
 that Pia not warm eaten has
 'that Pia did not have a warm meal'
- b. *dass Pia warm nicht gegessen hat
 that Pia warm not eaten has
- (19) *dass Pia warm nicht duscht, (sondern badet)
 that Pia warm not showers but bathes

2. As expected for the left-peripheral element of the VC, neutral sentence accent is prosodically marked on the pseudo-depictive; see (20a). Pseudo-depictives form a single prosodic unit with the verb and carry the primary sentence accent under wide focus. This accent pattern allows focus projection from the accent-bearing modifier up to the entire sentence. By contrast, primary accent on the verb is only compatible with contrastive focus on the verb; see (20b).

- (20) a. dass Pia **warm** duscht
 that Pia warm showers
- b. dass Pia warm **duscht** (und nicht badet)
 that Pia warm showers and not bathes

3. Pseudo-depictives do not scramble, as is typical for elements of the VC; see (21) vs. (8).

- (21) *Pia hat warm ein Baby gebadet.
 Pia has warm a baby bathed

These findings support the conclusion that pseudo-depictives form part of the verbal cluster. Nonetheless, they are phrasal constituents rather than syntactic heads. This claim is supported by two pieces of evidence. First, pseudo-depictives permit coordination; see (22). Second, a pseudo-depictive can itself be moved to the German prefield, a position that admits only phrasal constituents; see (23). However, as expected for elements of the verbal cluster, removing the pseudo-depictive from its base position and moving it into the prefield results in a marked grammatical structure and requires a strong contrastive focus on the pseudo-depictive.

- (22) Pia hat vegan und glutenfrei gegessen.
 Pia has vegan and gluten-free eaten
- (23) Vegan hat Pia gegessen.
 Vegan has Pia eaten

⁷ The reading of (18a) in which *nicht* 'not' takes narrow scope over the adjective is not relevant to the diagnostic.

To sum up, pseudo-depictives are phrasal constituents within the verbal cluster, forming a tight structural unit with the verb. Put differently, pseudo-depictives meet the syntactic requirements for pseudo-incorporation in German outlined in Frey (2015). Accordingly, they have a low attachment site to the verbal head and thus qualify as V-adjuncts, as illustrated in (24):⁸

- (24) [V [AP pseudo-depictive] V main verb]

This analysis does not entail that pseudo-depictives must be strictly adjacent to the verb. Although they cannot be separated from the verb by *nicht* ‘not’, others phrases that are also pseudo-incorporated—see Frey (2015) for an overview—may intervene. For instance, APs with a resultative interpretation occur between a pseudo-depictive and the verb, as illustrated by *trocken* (‘dry’) in (25).

- (25) Pia hat ihre Haare kalt trocken geföhnt.
 Pia has her hair cold dry blow-dried
 'Pia blow-dried her hair with cold air so that it was dry.'

German manner adverbials are also known to have a syntactic base position close to the verb, below all arguments of the verb (e.g., Frey & Pittner, 1998). Given that manner adverbials have been analyzed as event-kind modifiers (Landman and Morzycki, 2003; Anderson and Morzycki, 2015), and that I propose the same for pseudo-depictives, I briefly highlight a syntactic difference. The contrast between (26a) and (26b) shows that manner adverbials must precede pseudo-depictives in the linear order. Placing the manner adverbial *hektisch* ‘hectic’ between the pseudo-depictive *warm* ‘warm’ and the verb renders the sentence ungrammatical.

- (26) a. Pia hat hektisch warm gegessen.
 Pia has hectic warm eaten
 'Pia ate a warm meal in a hectic manner.'
- b. *Pia hat warm hektisch gegessen.
 Pia has warm hectic eaten

This contrast provides initial evidence that the base position of pseudo-depictives is structurally closer to the verbal head than the base position of manner adverbials. It is therefore to be expected that, even if both modifiers are assumed to modify the event kind, their semantic differences can be accounted for in terms of different base positions. This assumption provides a compositional account of ambiguous examples such as (27), in which *süß* ‘sweet’ can be interpreted both as a manner adverbial and as a pseudo-depictive.

- (27) Pia hat süß gegessen.
 Pia has sweet eaten
- a. 'Pia had a sweet meal.'
- b. 'Pia ate in a cute manner.'

⁸ Haider (2010: 336) defines the verbal cluster in German as a “compact constituent of verbal heads and co-predicates” that form a complex predicate. According to Haider, the verbal cluster is built by V-adjunction; see Haider (2010: ch. 7) for a more detailed discussion.

Pseudo-deictives are thus positioned in the linear order as follows: manner adverbials > pseudo-deictives > resultative predicates > main verb. Future research will need to establish the ordering constraints in detail and connect them to the relevant semantic differences.

4. The semantic contribution of pseudo-deictives

In recent years, the ontological distinction between event kinds (types) and event particulars (tokens) has proven to be fruitful; see Gehrke (2019) for an overview. Landman and Morzycki (2003) and Anderson and Morzycki (2015) analyze manner adverbials as event-kind modifiers. Maienborn et al. (2016) propose extending this account to all V-adjuncts. In fact, event kinds have been successfully employed in analyses of pseudo-incorporated modifiers (e.g., Gehrke, 2015; Maienborn et al., 2016) and moreover, in analyses of pseudo-incorporated arguments (e.g., Luo 2022; Sağ 2025; Sağ et al., 2025). The core idea of all these analyses is that the pseudo-incorporated phrase relates to the event-kind argument e_k introduced by the verb, in that the property it denotes specifies the event kind.

Given this background, the syntactic base position of pseudo-deictives identified in Section 3 gives rise to the expectation that pseudo-deictives likewise specify the event kind. However, at first glance, this assumption may seem counterintuitive, since pseudo-deictives denote properties that apply to individuals rather than to events.

Closer examination of the data reveals that pseudo-deictives actually operate at the kind level: they specify individual kinds rather than individual particulars. Evidence for this assumption comes from anaphoric reference by German *so*. Landman and Morzycki (2003) and Anderson and Morzycki (2015) argue that German *so* serves as a proform for kinds. In its adnominal use, *so* is anaphoric to individual kinds. As illustrated in (28), pseudo-deictives license anaphoric reference to individual kinds but not to individual particulars. (28) is interpreted as Pia having grilled using an electric grill. Although the grill is not overtly introduced, it allows for anaphoric reference with German *so*; see (28a). The grill, however, cannot be referred to by a personal pronoun; see (28b). This contrast shows that the inferred target, modified by *elektrisch* ‘electric’, corresponds to an individual kind rather than to an individual particular. The pseudo-deictive modifies the type of grill, not the particular grill Pia actually used. Anaphoric reference to the grill is entirely unavailable in the absence of a pseudo-deictive; see (29).

(28) a. Pia hat elektrisch gegrillt. So einen Grill möchte Max auch haben.
 Pia has electric grilled so a grill wants Max also have
 'Pia grilled using an electric grill. Max also wants a grill like that.'

b. Pia hat elektrisch gegrillt. *Er steht jetzt dreckig in der Ecke.
 Pia has electric grilled it stands now dirty in the corner

(29) Pia hat das Steak gegrillt. *So einen Grill möchte Max auch haben.
 Pia has the steak grilled so a grill wants Max also have

These findings support the view that pseudo-deictives serve as individual-kind modifiers: they specify the subtype of an inferred individual kind and render this subtype accessible in

discourse. Accordingly, the meaning enrichment required by pseudo-depictives consists in the pragmatic identification of a suitable individual kind rather than of an individual particular.

Further support for the assumption that pseudo-depictives apply to individual kinds comes from the fact that relational adjectives such as *elektrisch* ‘electric’ are frequently used as pseudo-depictives. According to McNally and Boleda (2004), relational adjectives denote properties of kinds and therefore predicate exclusively over kind arguments.

Although the property described by the adjective may at first glance suggest otherwise, pseudo-depictives are nevertheless also linked to the event kind, as expected given their syntactic position. This assumption is based on the observation that pseudo-depictives also support anaphoric reference to the event kind by means of German *so*. In the absence of a pseudo-depictive, such reference is impossible, as illustrated by the contrast between (30) and (31). In this respect, pseudo-depictives pattern with manner adverbials.

- (30) Pia hat elektrisch gegrillt und Max hat auch so gegrillt.
 Pia has electric grilled and Max has also so grilled
 ‘Pia grilled using an electric grill and Max did so too.’

- (31) *Pia hat das Steak gegrillt und Max hat auch so gegrillt.
 Pia has the steak grilled and Max has also so grilled

The anaphoric data in (32) provide further evidence for the assumption that pseudo-depictives contribute to the formation of complex event kinds. Kind predicates such as *gerade in Mode sein* ‘be currently in vogue’ require an antecedent of the type event-kind (Maienborn et al., 2016). In (32), the anaphoric pronoun *das* ‘that’ refers to a complex event type—specifically, ‘grilling with an electric grill’—rather than to the simple event type ‘grilling’: it is not grilling per se, but grilling with an electric grill that is described as being in vogue.

- (32) Pia hat elektrisch gegrillt. Das ist gerade in Mode.
 Pia has electric grilled that is currently in vogue
 ‘Pia grilled using an electric grill. That is trendy right now.’

In sum, these findings support the conclusion that pseudo-depictives are hybrids between individual-kind and event-kind modifiers. Their contribution to the sentence’s meaning can be defined as follows: pseudo-depictives specify the subtype of an individual kind that constitutes an integral part of the event kind introduced by the verb. By virtue of its constitutive status, the subtype of the individual kind specified by the pseudo-depictive impacts the event kind and determines a subtype of the event kind. For example, the grill is an integral part of grilling and its subtype may determine the kind of grilling: grilling with an electric grill involves minimal preparation, is fast, and is easy to control. Which individual kind is actually modified by the pseudo-depictive remains underspecified and is resolved by conceptual knowledge. This reveals the distinctive nature of event-kind formation with pseudo-depictives. What sets pseudo-depictives apart is that they modify both an event kind and an individual kind. Unlike manner adverbials, which presumably modify the event kind directly (Landman and Morzycki, 2003), pseudo-depictives determine the event kind only indirectly, mediated by the subtype of an involved individual kind. They primarily define the subtype of this individual kind.

This approach captures the interpretive and combinatorial constraints of pseudo-depictives:

1. In principle, the adjective *kalt* ‘cold’ can readily serve as a pseudo-depictive in combination with *essen* ‘eat’. However, in the context illustrated by (33), this combination is deviant—even though Pia ate a substantial amount of cold food. In this context, only the pseudo-depictive *warm* ‘warm’ is appropriate. This contrast is consistent with the assumption that the inferred individual kind must constitute an integral part of the event kind. In an eating event, this corresponds to the main course, which in this case consists of warm food.

- (33) [For dinner, Pia had tomato–mozzarella as a starter, followed by lasagna with a side salad, and finished with ice cream for dessert.]
 Pia hat warm / #kalt gegessen.
 Pia has warm / cold eaten

2. In contrast, the context in (34) renders *warm* ‘warm’ infelicitous—even though Pia ate only warm food. This is because event-kind formation is generally accompanied by the requirement for additional inferences (Gehrke, 2015, 2019; Maienborn et al., 2016). Such inferences often serve to define a sufficiently specific event kind. This applies to the interpretation of pseudo-depictives: the sentence *Pia hat warm gegessen* strongly implies that Pia had a complete meal rather than merely a snack, which makes the sentence inappropriate in the given context.

- (34) [Pia had a warm waffle as a snack.]
 #Pia hat warm gegessen.
 Pia has warm eaten

3. The assumption of additional inferences also accounts for why examples such as (35) do not give rise to redundancy effects. Although cooking necessarily entails warm food, the combination of *kochen* ‘cook’ and *warm* ‘warm’ is perfectly fine. This is because (35)—just like (33) and (34)—conveys more than merely the involvement of an individual kind that is characterized by being warm: (35) implies that Pia cooked a warm main course. Accordingly, (35) would be inappropriate in a context where Pia cooked applesauce or pudding.

- (35) Pia hat warm gekocht.
 Pia has warm cooked
 'Pia cooked a warm meal.'

4. It is often argued for pseudo-incorporated structures that the specified event kind must be well established—even though it remains unclear what precisely defines well-establishedness (Gehrke, 2019). The event kinds determined by pseudo-depictives must also satisfy this constraint. This accounts for why, under normal circumstances, the example in (36) is deviant.

- (36) #Pia hat schimmelig gegessen.
 Pia has moldy eaten

In our actual world, eating moldy food does not constitute a well-established subtype of eating. There is no kind of eating which is determined by the involvement of a moldy individual kind. However, if we assume a new diet is becoming fashionable in which only moldy food is

consumed—so that eating moldy food is recognized as an established kind of eating—(36) becomes acceptable. Hence, examples such as (36) are not ill-formed in grammatical terms but are odd for conceptual reasons when presented out of the blue. In principle, any adjectival predicate that can apply to individual kinds may serve as a pseudo-depictive, provided that it contributes to the formation of a (contextually) established event kind.

5. The constraint of well-establishedness fails to explain why (37) is deviant when combined with *warm* ‘warm’. It can be argued that there exist well-established kinds of drinking that are determined by the consumption of warm beverages, such as drinking mulled wine at German Christmas markets or black tea in East Frisia. Nevertheless, (37) including *warm* is deviant.

- (37) *Pia hat #warm / alkoholfrei getrunken.*
Pia has warm / non-alcoholic drunk
 ‘Pia drank warm / non-alcoholic beverages.’

This can be explained by the fact that, for these well-established kinds of drinking, the warm beverage is not underspecified but constrained to mulled wine or black tea, respectively. Pseudo-depictives require that the individual kind is otherwise underspecified, apart from the property contributed by the pseudo-depictive itself. Accordingly, (37) would be appropriate only if there were a well-established kind of drinking in which the specific type of beverage consumed is irrelevant, as long as it is warm. This constraint is met in examples like *Pia hat warm gegessen*. Here, every main course can be inferred, as long it is warm. This explains why, by contrast, (37) including *alkoholfrei* ‘non-alcoholic’ is acceptable: drinking non-alcoholic beverages constitutes a well-established event kind, for instance, in the context of parties. Here, the specific type of beverage is irrelevant; the only requirement is that it was non-alcoholic.

5. The analysis

This section develops an underspecification analysis building on Maienborn (2003).

5.1. The underspecification approach

The underspecification approach is one of the two main approaches to meaning enrichment. In contrast to the coercion approach, it does not conceive of meaning enrichment as a last-resort strategy for interpreting conflicting terms. Instead, the potential to exploit conceptual knowledge is captured as a regular part of the meaning constitution and is thus built into the semantic structure in advance: the semantic structure is underspecified in parts and thus allows for a pragmatic specification of particular meaning components (e.g., Blutner, 1998; Egg, 2005; Dölling, 2005). Semantic underspecification occurs because either the lexical semantics of an item leaves its target argument underspecified or the compositional combination of particular items is systematically accompanied by the insertion of an underspecified variable. I will argue that the latter is the case for pseudo-depictives.

Maienborn (2003) argues that the semantic integration of modifiers placed in a head-adjacent position is systematically accompanied by the introduction of underspecification. That is, there is a designated structural domain in which the compositional machinery allows for a flexible

semantic integration of adverbial modifiers, such that their interpretation must be supplemented by conceptual knowledge. By contrast, modifiers that are not placed in a head-adjacent position do not give rise to a corresponding underspecification. Maienborn (2003: 489) formalizes this idea by proposing a general modification template MOD*, shown in (38) and slightly amended by the addition of (...) and α :⁹

- (38) a. MOD*: $\lambda Q \lambda P \dots \lambda x [P(\dots)(x_\alpha) \wedge R(x_\alpha, v_\alpha) \wedge Q(v_\alpha)]$
 b. If MOD* is applied in a structural environment of categorial type X, then R = part-of, otherwise (i.e., in an XP-environment) R is the identity function.

MOD* licenses the conjunction of two predicates P and Q. Q is provided by the adverbial modifier and P corresponds to the verbal predicate. MOD* introduces a relational variable R and a free variable v_α . MOD* ensures that the modifier predicate Q is added to the head predicate P by applying it to the free variable v_α , which is related to the head's argument x_α . α ranges over both kinds and tokens, which keeps the argument domain flexible; the referents of the arguments can be either kinds or tokens. This renders MOD* applicable in both the kind domain and the token domain. The application of MOD* is regulated by an interface condition; see (38b). This ensures that only modifiers with an attachment site close to the head relate to their compositional target via a free variable that is left underspecified. Thus, underspecification is introduced not arbitrarily, but in accordance with well-defined structural requirements. (...) keeps MOD* flexible to capture additional internal arguments of the verb.

In the following section, I revisit MOD* and apply it to pseudo-depictives. Since pseudo-depictives are pseudo-incorporated into the verbal cluster and thus have an attachment site close to the verbal head, applying MOD* to them yields an underspecified semantic structure.¹⁰

5.2. The compositional derivation of pseudo-depictives

I illustrate the compositional derivation of pseudo-depictives with the intransitive example in (39), abstracting away from aspects of the composition that are not directly relevant to the compositionality puzzle posed by pseudo-depictives.

- (39) Pia hat warm geduscht.
 Pia has warm showered
 'Pia took a warm shower.'

The analysis builds on the assumption that the verbal structure, and consequently the event domain, is two-layered; see especially Saĝ et al. (2025), and also Gehrke and McNally (2011) and Maienborn et al. (2016). Under this approach, eventive verbs such as *duschen* 'shower'

⁹ On this view, the modifying expression is not lexically laid down to be a modifier; rather, it contributes a simple predicate. Hence, modification is considered a separate rule-based process in addition to functional application. This is in line with the composition rule of predicate modification (Heim & Kratzer, 1998).

¹⁰ It remains to be discussed whether MOD* can be extended to all V-adjuncts, such as manner adverbials, and what adjustments to MOD* might be required (e.g., additional instantiations of R depending on fine-grained distinctions among syntactic positions, see the comments in section 3). For the purpose of the present discussion, it is crucial that MOD* provides an adequate account of the interpretation of pseudo-depictives—exactly as it does for other V-adjuncts, such as event-internal locatives (Maienborn, 2003).

introduce an event-kind argument e_k (Gehrke and McNally, 2011; Gehrke, 2015; Maienborn et al., 2016; Saĝ, 2025; Saĝ et al., 2025; among others); see (40a).¹¹ The lexical V-domain corresponds to the type domain, within which the event kind e_k introduced by the verb can be further specified, for instance through pseudo-incorporated phrases. The domain above V corresponds to the token domain, within which canonical argument saturation occurs.

- (40) a. *dusch*- v : $\lambda e_k [\text{SHOWER}(e_k)]$
 b. *warm*: $\lambda x_\alpha [\text{WARM}(x_\alpha)]$
 c. *warm dusch*- v : $\lambda e_k [\text{SHOWER}(e_k) \ \& \ \text{PART-OF}(e_k, v_k) \ \& \ \text{WARM}(v_k)]$

Adjectives such as *warm* ‘warm’ denote properties that can apply to either individual kinds or to individual tokens. Their application domain is flexible, with α ranging over both kinds and tokens.¹² In contrast, relational adjectives like *elektrisch* ‘electrical’ denote properties of kinds and predicate exclusively over kind arguments (McNally and Boleda, 2004).

Applying MOD* to the present example yields the result in (40c), which captures that the kind domain is targeted: *warm* ‘warm’ is added to the head predicate *dusch*- ‘shower’ by applying it to the free variable v_k , representing an underspecified individual kind. Accordingly, the individual kind v_k is specified as being warm, so that *warm* ‘warm’ defines a subtype of the otherwise underspecified individual kind v_k . Crucially, the pseudo-depictive’s target v_k is introduced by MOD* rather than determined by the verb’s argument structure. This captures that the target is generally identified independently of the verb’s argument structure.

Importantly, v_k serves as a link between *warm* ‘warm’ and the verb’s event-kind argument e_k , granting the modifier indirect access to e_k : v_k is related to the head’s event-kind argument e_k by R introduced by MOD*. In (40c), R is instantiated as the PART-OF relation, since MOD* is applied in the structural environment of V. The PART-OF relation pairs an event kind e_k with an individual kind v_k that is an integral constituent of e_k . That is, according to (40c), the shower event kind e_k involves an underspecified individual kind v_k as an integral constituent, which is characterized by being warm. Put differently, the pseudo-depictive functions as a hybrid between an individual-kind modifier and an event-kind modifier: *warm* ‘warm’ determines a subtype of the individual kind v_k , which in turn constrains the shower event kind e_k by serving as its integral constituent. That is, the modification of e_k is mediated by v_k : pseudo-depictives primarily modify the individual kind v_k , thereby indirectly modifying the event kind e_k .

As required, MOD* imposes minimal semantic restrictions on suitable adjectives. The main requirement for an adjectival predicate to function as a pseudo-depictive is that it can predicate over individual-kind arguments. This correctly captures that pseudo-depictives may describe both non-inherent, transitory properties and inherent, permanent properties.

(40c) constitutes the key outcome of the verb’s modification by the pseudo-depictive. After the pseudo-depictive has been integrated, an operation at the boundary of the verbal cluster shifts the event type to the event token. I build on the Event Type Closure (EC) proposed by Maienborn et al. (2016: 339); see (41), which shows a slightly amended version.

¹¹ I follow previous approaches that sever the external argument from the verb base.

¹² I adopt the notation used by Gehrke and McNally (2011) and Maienborn et al. (2016).

$$(41) \text{ EC: } \lambda P \lambda e \exists e_k \exists v_k [P(e_k) \wedge R(e, e_k) \wedge R(v, v_k)]$$

EC introduces a realization relation R that pairs an event token and an event kind (Gehrke & McNally, 2011).¹³ EC takes the (complex) event-kind predicate and returns a predicate of event tokens e that realize the corresponding event kind e_k . I assume that a realization relation R is introduced not only for the event-kind argument, but for any kind argument in the type domain, since the realization of an event kind by an event token entails that each individual kind involved in the event kind must be realized by a corresponding individual token. In other words, without an individual token that realizes the individual kind v_k , the event kind e_k cannot be instantiated.¹⁴ The individual-kind argument v_k is existentially bound, just like the event-kind argument e_k . Unlike the event-token argument, the individual token is not accessible to further compositional operations and is represented by a free variable v .¹⁵

The result of applying EC is given in (42). Essentially, (42) denotes a property of event tokens that realize a shower event kind e_k that involves an underspecified individual kind v_k as an integral constituent. e_k is no longer accessible for compositional operations.

$$(42) \text{ warm dusch-}_{V\text{-EC}}: \\ \lambda e \exists e_k \exists v_k [\text{SHOWER}(e_k) \ \& \ \text{PART-OF}(e_k, v_k) \ \& \ \text{WARM}(v_k) \ \& \ R(e, e_k) \ \& \ R(v, v_k)]$$

Setting aside details like tense, (43) shows the result of the compositional derivation of (39):

$$(43) \text{ Pia hat warm geduscht:} \\ \exists e \exists e_k \exists v_k [\text{SHOWER}(e_k) \ \& \ \text{PART-OF}(e_k, v_k) \ \& \ \text{WARM}(v_k) \ \& \ R(e, e_k) \ \& \ R(v, v_k) \ \& \\ \text{AGENT}(e, \text{pia})]$$

In prose, (43) is true iff the following holds: there is an event token e in which Pia is involved as an agent and the event token e is a particular realization of the shower event kind e_k . The shower event kind e_k involves an underspecified individual kind v_k as an integral constituent, which is characterized by being warm and realized by v .

This is as far as the compositional semantics can take us. The meaning enrichment is captured by a semantic structure that is partially underspecified, thereby allowing for a pragmatic specification of a particular meaning component: the individual kind v_k modified by *warm* ‘warm’ remains underspecified. Its identification depends on conceptual knowledge associated with the event kind. In the case at hand, the only plausible candidate that can be identified as the target is the water used for showering. Showering does not involve any other integral constituent that is warm and thus qualifies as a potential target.

¹³ Gehrke & McNally (2011: 193) propose the axiom: $\forall e_k, x_k, P, i [P(e_k, x_k) \text{ at } i \leftrightarrow \exists e, x [R(e, e_k) \ \& \ R(x, x_k) \ \& \ P(e, x) \text{ at } i]]$. That is, if at a world-time index i there is an event kind e_k and a predicate P applying to e_k and its arguments, then there is at least one event particular e at i that realizes e_k .

¹⁴ In light of this, EC must be defined in a sufficiently flexible way to ensure that the variable number of individual-kind arguments—whether introduced by the verb’s argument structure or by pseudo-incorporated phrases—are each assigned a realization relation R pairing the individual kind with its corresponding token. The version employed by Maienborn et al. (2016) is not sufficiently flexible in this respect. Addressing this issue is left to future work. For present purposes, I adopt the variant in (41).

¹⁵ Saĝ et al. (2025) propose an operation called Event Tokenizer that, at its core, serves the same purpose as EC.

To sum up, the analysis of pseudo-depictives is spelled out in a compositional framework and accounts for the meaning enrichment in terms of underspecification, which emerges from the particular compositional configuration of V-adjunction. The analysis is not custom-designed for solving the compositionality puzzle posed by pseudo-depictives; rather, it is built from independently established components: (i) the low attachment site of adverbial modifiers to the verbal head, (ii) the conception of pseudo-incorporated phrases as event-kind modifiers, and (iii) the modification template MOD*, which introduces underspecification. Although pseudo-depictives challenge compositionality, they can nonetheless be systematically analyzed using compositional tools, forming part of the existing overall account.

6. Insights from pseudo-depictives on the type/token interface

Pseudo-depictives provide further evidence for the theoretical advantages of a two-layered model of the event domain. Moreover, they offer crucial insights into the type/token interface that have not yet been accounted for in existing approaches. First, pseudo-depictives challenge the view that pseudo-incorporation systematically relies on a dedicated incorporating version of the verb that lacks an object (e.g., Dayal, 2011). In (44), *ausspülen* ‘rinse’ subcategorizes for an obligatory complement. This requirement is maintained even in combination with a pseudo-depictive: if the complement is omitted, the sentence is ungrammatical.

- (44) Pia hat *(das Weinglas) heiß ausgespült.
 Pia has the wine.glass hot rinsed
 'Pia rinsed the wine glass with hot water.'

Hence, a verb modified by a pseudo-depictive is not necessarily intransitive. However, pseudo-depictives may lead to the omission of the verb's complement, as shown in (45). Just like *ausspülen* ‘rinse’, *tragen* ‘carry’ subcategorizes for an obligatory complement. However, when combined with *schwer* ‘heavy’, the realization of the complement leads to ungrammaticality. The sentence in (45) is acceptable if the otherwise obligatory complement is omitted.

- (45) Pia hat (*den Kleiderschrank) schwer getragen.
 Pia has the wardrobe heavy carried
 'Pia carried a heavy load.'

The omission of the complement is systematic: the complement must be omitted, whenever the denoted entity is a token realizing the individual kind v_k and thus coincides with the pseudo-depictive's target. If, by contrast, the verb's argument does not correspond to v_k and thus is distinct from the pseudo-depictive's target, the argument may be realized overtly. In (44), *heiß* ‘hot’ is interpreted as targeting the water used for rinsing, which is distinct from the verb's argument and therefore permits overt realization. In (45), *schwer* ‘heavy’ targets the load itself and the overt realization of the corresponding argument is consequently ruled out.

Pseudo-depictives thus support the view that pseudo-incorporation or event-kind formation can affect a verb's subcategorization. Complement realization in the token domain is determined by conditions established in the type domain, requiring a mechanism at the type/token interface that links event-kind formation to verbal subcategorization.

This issue has already been addressed by Sağ et al. (2025), specifically with respect to pseudo-incorporated arguments in Turkish and Laz. However, without going into detail here, their proposal cannot account for the omission patterns observed with pseudo-depictives. A closer investigation of pseudo-depictives therefore promises to yield further important insights into the type/token interface and to clarify to what extent the otherwise compelling proposal of Sağ et al. (2025) must be revised. The present analysis of pseudo-depictives does not address the interplay between the type domain and the token domain, illustrated in (44) and (45), but provides a starting point for further research on this topic.

7. Conclusion

This paper has sought to resolve the compositionality puzzle posed by pseudo-depictives. I have argued for an analysis that preserves compositionality wherever possible while providing an explicit account of those aspects of meaning that require the integration of conceptual knowledge. The meaning enrichment is modeled in terms of underspecification, which emerges from the compositional configuration of head-related modification. Pseudo-depictives, as V-adjuncts, employ a hybrid modification strategy: they occupy an intermediate status between individual-kind modifiers and event-kind modifiers. Crucially, they modify a compositionally introduced underspecified individual kind, which in turn constraints the event kind. That is, the event kind is modified indirectly, mediated by the individual kind. The event-kind formation gives rise to pragmatic constraints that depend on context and world knowledge. Taken together, these results provide answers to the outlined questions (Q1)–(Q3).

Overall, this case study supports the view that the interaction between compositional semantics and conceptual knowledge constitutes an integral, systematic aspect of meaning constitution: conceptual knowledge is integrated at well-defined points determined by the compositional structure itself, particularly in head-related modification. The analysis of pseudo-depictives demonstrates that compositionality can be reconciled with the impact of conceptual knowledge without sacrificing the theoretical advantages traditionally associated with compositionality.

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