A cognitive approach to the allegedly left-headed prefix verbs in German: Arguments for the interaction of prefixation and event-schema metonymy*

Heike Baeskow (Frankfurt)

Abstract

In this article, the much discussed problem of apparently left-headed German prefix verbs (e. g. *besohlen* 'sole', *erschneidern* 'obtain by tailoring', *verschimmeln* 'become mouldy') will be addressed from a cognitive perspective. It will be argued that nominal bases are metonymically reconceptualized as events inside the derivatives. This proposal has two advantages over previous approaches. First, it is not necessary to assign verbal or verbalizing properties to the prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-*, which have their origin in prepositions or adverbs. Secondly, an overgeneration of virtual verbs, i. e. of verbs which are not or no longer attested (e. g. **dachen* 'roof', †*sohlen* 'sole') is avoided because the metonymic and hence purely conceptual verbalization process takes place in the context of the inseparable prefixes. The prefixes neither change the word-class of their bases nor provide argument structures, which are predicted by a small set of conceptual event schemata. The function of the prefixes is rather to add semantic or aspectual information. Synchronic support for the proposal to be presented first of all comes from the fact that conversion, which historically preceded prefixation in German, is still active. Contrastive analyses of English and German non-derived denominal verbs will illustrate this point. Moreover, many prefix verbs still co-exist with non-derived denominal verbs (e. g. *schottern* (< *Schotter* 'gravel, ballast') vs. *beschottern*, *entschottern*, *verschottern*). A more general observation is that the compatibility of denominal verbs with the holistic (or 'synoptic') perspective conveyed by the inseparable prefixes depends on the metonymic patterns underlying these verbs.

1 Introduction

This article offers an innovative answer to the controversially discussed question where the verbal properties of prefix verbs with non-verbal bases come from. In English, prefixes generally preserve the lexical category of the derivatives they form, e. g. *friendly*$_{A}$ → *unfriendly*$_{A}$,

* I am very grateful to the Fritz-Thyssen-Stiftung (Cologne) whose support of the research project "Conversion in English: The interaction of generic knowledge, contextual information, and syntactic constructions" enabled me to write this article. This project is headed by Gert Webelhuth, whom I would like to thank for his kind cooperation. Further thanks go to two anonymous reviewers for their helpful comments and to Elke Hentschel for publishing this article in her journal.

argument$_N$ → *counter-argument*$_N$. In this respect, they differ from suffixes, which always determine the category of their output and thus constitute the heads of the derivatives they form. Prefixes deriving verbs from nouns have a special status because they seem to change the word-class of their bases, e. g. *cage*$_N$ → *encage*$_V$, *witch*$_N$ → *bewitch*$_V$. If these prefixes – like suffixes – had the status of heads, they would violate the *Righthand-Head Rule* (RHR) postulated by Williams (1981: 248). This rule states that "[i]n morphology, we define the head of a morphologically complex word to be the righthand member of that word." Since prefixation – as compared to the dominance of conversion and *-ize/-ify* suffixation – plays a subordinate role in Modern English verb formation, there are only a few exceptions to the RHR, e. g. *bewitch*, *encage*, *dethrone*, *disarm*, *unmask*.[1] However, in languages like German, where verbs are more productively derived from nouns by means of prefixes or particles, systematic exceptions to the RHR would have to be accounted for. Thus, the focus of this article will be on German prefix verbs – especially on those displaying the inseparable prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-* in whose context nominal bases occur quite frequently.

Analyses of verbal prefixes combining with non-verbal bases roughly fall into two types. Analyses of the first type (e. g. Lieber 1981; Selkirk 1982; Olsen 1986, 1990; Eschenlohr 1999; Štekauer 2000; Donalies 2005) allow right- and left-headed constituents to determine the grammatically relevant properties of complex words. Thus, class-changing prefixes are assigned head status, and it is accepted that prefix verbs with non-verbal bases constitute exceptions to the RHR. Analyses of the second type (e. g. Marchand 1969; Wunderlich 1987, 1997; Scalise 1988; Stiebels 1998; von Heusinger/Schwarze 2006) are based on the assumption that non-verbal bases of prefixes are formally converted into hypothetical verbs prior to prefixation. Thus, prefix verbs displaying non-verbal bases become compatible with the RHR. The latter position is also reflected by the notion of *Präfixkonversion* ('prefix conversion') introduced by Fleischer/Barz (1992: 308) for verbs like *bewirten* 'host', *verarzten* 'give someone medical treatment', or *entkeimen* 'sterilize'.

Given these routes to prefix verbs, two fundamental problems remain. As far as the first option is concerned, the fact that the German prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-* have their origin in prepositions and adverbs (Habermann 2015: 1805) calls their verbalizing potential into question. A problem with the alternative view is an overgeneration of hypothetical verbs, i. e. of verbs which are either obsolete (e. g. †*sohlen* 'sole', †*helmen* 'helmet' as in *besohlen*, *behelmen*) or which have never been attested (e. g. **dachen* (< *Dach* 'roof') as in *bedachen*, **muttern* (< *Mutter* 'mother') as in *bemuttern*). In other words, a proposal according to which conversion takes place prior to prefixation would have to account for the (synchronic) non-existence of these unprefixed verbs.

The aim of this article is to present a new proposal according to which well entrenched material concepts (i. e. concepts expressed by simplex nouns like *Sohle* 'sole', *Dach* 'roof', *Schimmel* 'mould', to name but a few) are metonymically reanalysed as events in the context of the inseparable prefixes.[2] This proposal is based on the cognitive view that noun-verb conversion is

[1] According to Lieber (2004: 89), "[v]irtually the only means of creating new verbs in English – besides affixation of *-ize* and *-ify* – is conversion."

[2] The preservation of the RHR is merely an epiphenomenon.

an instance of metonymy, or, more precisely, of event-schema metonymy (Kövecses/Radden 1998; Dirven 1999; Ruiz de Mendoza Ibáñez/Pérez Hernández 2001; Bauer 2018b; Baeskow 2021, 2022a, 2022b). According to this view, the role played by the participant a base noun denotes is so salient for the event to be expressed that this participant can metonymically represent the event as a whole, e. g. *to shampoo one's hair* → INSTRUMENT FOR ACTION, *to bottle the wine* → GOAL FOR CAUSED MOTION.[3] The metonymic construal of events is based on event schemata which are defined over a small set of thematic roles and hence make predictions as to the argument structures of metonymically created verbs. As far as German prefix verbs are concerned, it will be shown that event-schema metonymy interacts with prefixation in that the inseparable prefixes operate on classes of metonymically analysable events. Rather than changing the word-class of their bases from noun to verb, these prefixes impose a synoptic perspective in the sense of Dewell (2015) on the metonymically construed events. In this function, they focus on event-internal factors like direction of motion, energy, or attention, an entity's transformation in a setting, or a moment of change, which is more in line with their genesis.[4]

Diachronic support for the proposal that prefixation interacts with event-schema metonymy comes from the fact that the reanalysis of material concepts or qualities as events without overt derivational markers has been an option at least since the Middle High German period. As pointed out by Eschenlohr (1999: 104), conversion even preceded prefixation in the history of the German language. Synchronic evidence for the cognitive proposal comes from two factors which will be dealt with in this article. First, noun-verb conversion is still active in German – though not as productive as in English – and all the metonymic relations identified for English non-derived denominal verbs in Baeskow (2021) are also available for German. Secondly, quite a few non-derived denominal verbs still co-exist with semantically similar prefix verbs, e. g. *hämmern* vs. *behämmern* (< *Hammer* 'hammer'), *wässern* vs. *bewässern*, *entwässern*, *verwässern* (< *Wasser* 'water').

As far as the data collection is concerned, 319 German prefix verbs displaying nominal bases were extracted from six sources, namely Balmer/Brennenstuhl (1986); Fleischer/Barz (1992); Donalies (2005); Dewell (2015); the *Digitales Wörterbuch der deutschen Sprache* (DWDS); and the German Web 2020 (deTenTen20) provided by Sketch Engine. The DWDS is online accessible, and lists of prefix verbs become available by entering the sequences *be-*, *ent-*, *er-*, *ver-*, or *zer-* into the search field. In Sketch Engine, word lists were created for verbs beginning with these prefixes, and the first 1000 hits (per prefix) were searched for types of denominal prefix verbs. A list of data thus collected, which also illustrates the distribution of the prefixes over the metonymic patterns that underlie the verbalized nouns, is provided in the appendix. This list does not claim to be exhaustive, but it is large enough to reveal tendencies.

The article is structured as follows: Section 2 offers an overview of conversion as event-schema metonymy and its relevance for German prefix verbs. In section 3, evidence for the interaction

[3] Throughout this article, metonymic (and metaphorical) relations as well as cognitive terminology (e. g. LANDMARK) and concepts (e. g. TOOL) will be represented in small caps. Beyond metonymic relations, thematic roles such as Instrument or Proto-Agent will be capitalized.

[4] Some of these factors have been subsumed under the label of *Aktionsart* (e. g. Deutschbein 1939; Zifonun 1973; Fleischer/Barz 1992).

of event-schema metonymy and prefixation in German prefix verbs with nominal bases will be provided. Section 3.1 shows that although noun-verb conversion is less productive in German, it is based on the same metonymic relations as in English. In section 3.2, the synchronic co-existence of non-derived denominal verbs and semantically similar prefix verbs will be discussed in order to support the view that both types of verbs are subject to event-schema metonymy. Section 3.2.1 provides a brief overview of diachronic and synchronic properties of the inseparable German verbal prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-* and introduces two perspectival modes which according to Dewell (2015) underlie the conceptualization of events, namely sequential and synoptic. In section 3.2.2, a case study involving the polysemous verb *schottern* (< *Schotter* 'gravel, ballast') and three prefixed competitors is intended to show that the prefixes do not have a verbalizing function, but impose a synoptic perspective on the conceptually reanalysed events. A generalization proposed in section 4 is that the distribution of the inseparable prefixes depends on the metonymic patterns underlying types of verbalized nouns. Section 5 summarizes the insights gained in this article and provides a brief outlook on the role of metonymy in word-formation, including limits and prospects.

2 Conversion as metonymy and implications for German prefix verbs

Representatives of Cognitive Linguistics recognized a long time ago that metonymy and metaphor, which were traditionally conceived of as figures of speech, are omnipresent in everyday discourse (e. g. Lakoff/Johnson 1980; Lakoff 1987; Grady 1997; Koch 1999). Thus, for example, the names of famous creators can be used to refer to these people's oeuvre (*He is reading Shakespeare* → PRODUCER FOR PRODUCT), and conceptual metaphors such as LIFE IS A JOURNEY (e. g. "His life has taken a good course"; Grady 1997: 113) or A BODY IS A CONTAINER FOR EMOTIONS (e. g. "She couldn't contain her joy"; Lakoff 1987: 383) are well established. According to Brdar/Brdar-Szabó (2014: 332), the basic function of metonymy is that of a "mental shortcut" which allows speakers to refer to concepts whose expression would otherwise be linguistically complex in a more economical way (e. g. *the ham sandwich* vs. *the person ordering a ham sandwich*).[5]

A semantic alternative to zero-derivation as a morphological process is proposed already by Langacker (1987: 473f.). Although Langacker does not describe conversion as metonymy, he observes that deverbal nouns like *cheat* may be the result of "semantic extension". However, the observation that the semantic classes of English non-derived denominal verbs identified by Clark/Clark (1979) are reanalysable as metonymic relations was first made explicit by Kövecses/Radden (1998). The major classes, which Clark/Clark label according to the case roles (cf. Fillmore 1968) of their parent nouns, comprise locatum verbs (*saddle the horse*), location verbs (*bottle the wine*), duration verbs (*summer in Paris*), agent verbs (*author the book*), goal verbs (*orphan the children*), and instrument verbs (*hammer*, *taxi*). If these verbs are reanalyzed metonymically, the role played by the base-noun participant is the metonymic vehicle

[5] As pointed out by an anonymous reviewer, this definition implies that metonymy is also a formal shortcut. This observation is fully compatible with Panther's (2008: 358) definition of *linguistically manifest metonymy*, according to which a source meaning is related to a target meaning by means of a *linguistic vehicle*, i. e. a linguistic form such as a morpheme, a word, a phrase, or a sentence. Although the term "mental shortcut" will be used in this article, it should be kept in mind that metonymy also has a formal effect.

which provides mental access to an event in which this participant plays a salient role (i. e. the metonymic target).[6] Thus, for example, the metonymic relation underlying verbs like *to hammer* is INSTRUMENT FOR ACTION, whereas verbs of the type *to bottle* are reanalysable as GOAL FOR CAUSED MOTION.

While Kövecses/Radden deal with conversion only marginally, the metonymic approach to noun-verb conversion was elaborated by Dirven (1999) and applied to innovative denominal verbs from the *Oxford English Dictionary* (OED) by Baeskow (2021). As observed by Dirven (1999), event-schema metonymy (i. e. noun-verb conversion in traditional terminology) is describable on the basis of a small set of schematic events which are defined by configurations of thematic roles and which – as we shall see in section 3.1 – are also applicable in German. The schemata represented in (1) are slightly modified variants of those postulated by Dirven (1999: 285).

(1) Action schema: Proto-Agent, Proto-Patient, Instrument, Manner
Motion schema: Patient‘Locatum’, Source, Path, Goal
Location schema: Patient, Location
Transfer schema: Proto-Agent, Proto-Recipient, Proto-Patient, Means

These representations differ from Dirven's event schemata in two ways. First, the essive schema (or schema of "beingness") postulated by Dirven for verbs like *to author* or *to nurse* has been omitted because these verbs are highly dynamic and profile the Agent rather than stative relations of beingness. Secondly, three of the event-defining roles – namely the Agent and the Patient of the action schema and the transfer schema as well as the Recipient of the transfer schema – are conceived of here as proto-roles in the sense of Dowty (1991) and Primus (1999, 2012). As such, they are composed of sets of verbal entailments like "control", "causation", "causally affected", "incremental theme", or "addressee", which make predictions as to argument linking (cf. Baeskow (2022b) for a detailed analysis).

Following Primus (2012: 32), it is assumed here that the Proto-Patient is always defined relative to a Proto-Agent's activity. Thus, this complex role only occurs in the action and transfer schema. By contrast, the Patient of the motion schema may undergo a change of position or change of state without being causally affected by a Proto-Agent, and the Patient of the location schema is spatially located (e. g. *Pete motelled in Australia*).[7] A further important aspect adopted from Radden/Dirven (2007: 272) is that the event schemata can be instantiated in different "worlds of experience". For example, while the action schema abstracts over events in the force-dynamic world in which a human agent deliberately and responsibly acts on an entity or individual – possibly by using an instrument and performing the action in a certain manner – motion can occur either in the force-dynamic world or in the material world. If it occurs in the force-dynamic world, an Agent either instigates its own motion (self-motion) or causes another entity to move towards a Goal (caused motion). If it occurs in the material world, it is not

[6] According to Langacker (1993: 30), the concept which provides mental access to a target in a metonymic relation can be conceived of as a "reference point".

[7] In order to delineate the Patient of the motion schema from the Proto-Patient of the action schema, the former will be referred to here as the *Locatum*, i. e. the entity undergoing a change of position or change of state. This notion is in line with Clark/Clark's (1979: 770) semantic class labelled "locatum verbs" (e. g. *saddle*, *roof*).

induced by an Agent (e. g. *The ball rolled down the hill*). As far as non-derived denominal verbs are concerned, it is important to note that motion towards a Goal can be metaphorically interpreted as an entity's change of state (e. g. Kastovsky 1996: 205). Examples from the OED are *to scapegoat someone* (GOAL FOR CAUSED MOTION) or *to gel* "become a gel" (GOAL FOR MOTION). The image schema underlying both a change of position and a change of state is that of SOURCE-PATH-GOAL. If a quality appears as the Goal, it is also reinterpretable as a final state (e. g. *to clean*, *to empty*).

While there are only a few formal constraints on noun-verb conversion in English and German[8], the interpretation of (innovative) non-derived denominal verbs is mainly guided by three factors. These factors comprise the discourse context, which also provides the syntactic context (cf. Clark/Clark 1979; Aronoff 1980; Neef 2005; Schönefeld 2018), world knowledge as to the base nouns (cf. Clark/Clark 1979; Karius 1985; Kiparsky 1997; Štekauer 1996, 2005; Baeskow 2006, Štekauer/Díaz-Negrillo/Valera 2011; Fabrizio 2013), and cognitively grounded knowledge. While the first two factors are well-documented, cognitively grounded knowledge – which is directly grounded in sensorimotor experience and hence embodied (cf. e. g. Gallese/Lakoff 2005; Barsalou 2003, 2009, 2020; Bergen 2012; Ruiz de Mendoza Ibáñez/Pérez Hernández 2011: 172f.; Ruiz de Mendoza Ibáñez/Galera Masegosa 2014: 63–65) – has been largely neglected in the literature on conversion. In this context, it is important to note that many base nouns of converted verbs denote basic-level objects in the sense of Rosch et al. (1976), e. g. English: *hammer*, *bicycle*, *saddle*; German: *Bürste* 'brush', *Harke* 'rake', *Schaufel* 'shovel'. Since most speakers know how to interact with these objects in everyday life, cognitively grounded knowledge accounts for the effortless conceptualization of material concepts as events. Moreover, as shown by Baeskow (2022a, 2022b), this kind of knowledge is also relevant for the mental simulation (or imagination) of events in which no referent of the base noun, but only a multi-modally accessible 'impression' of this concept is implied. Such an impression may be the perceptually salient shape of an object (e. g. *The car pretzeled itself around a tree*), an acoustic signal (e. g. *Someone was hammering on the door*), a movement typically performed when interacting with an object (e. g. *She bicycled her legs*), or a dynamic mental image like that of a hovering helicopter (e. g. *parents helicoptering over their children*).

However, despite its creative potential, event-schema metonymy is not fully productive. For example, while *to bottle the wine* is well-established, phrases like ?*to glass (the wine)* or ?*to vase (the flowers)* are not attested although they are perfectly interpretable. While it has to be admitted that there are accidental gaps in the system, explanations which cover at least a subset of possible but non-existent verbs are provided by Rimell (2012: 154) and Baeskow (2022b: 610). As pointed out by Bauer (2018b: 179f.), gaps in the paradigms of figurative readings are as common as gaps in the paradigms of derivational affixes (?*possibleness*, ?*swanling*). For example, although nouns like *head*, *hand*, or *foot* can be used metonymically to refer to persons, nouns denoting body parts do not systematically motivate such PART-FOR-WHOLE readings.

[8] Formal constraints are for example competition with entrenched verbs (*to imprison* vs. **to prison*), ancestry (English *to bake* vs. **to baker*; German *fegen* 'sweep' vs. **besen*), or homonymy (English *to spring*, *to fall*; German *lauten* *'play the lute'); cf. Clark/Clark (1979); Neef (2005).

Before we proceed to the analyses, a remark as to the status of event-schema metonymy is required. As pointed out by a reviewer, a problem with the metonymic approach to conversion is that vehicle and target belong to different types of categories (i. e. THING and EVENT, respectively). Thus, the shift between a participant and an event is conceptually more complex than metonymic reanalysis. It should be noted, however, that according to Dirven (1999), event-schema metonymy is a special case of metonymy. Unlike reference metonymy, which serves to identify an anonymous individual in a communicative situation (*The hamburger left without paying* → ORDERED FOOD FOR CUSTOMER), event-schema metonymy operates over schematic events at a higher level of abstraction, namely that of predicate-argument structure; cf. Schönefeld (2005) for a detailed discussion. Moreover, as argued by Cetnarowska (2011), a metonymy like *We don't need another Einstein* also correlates with a categorial shift, which in this case involves different subcategories of the category THING (proper noun → common noun).

3 Evidence for the interaction of event-schema metonymy and prefixation in German prefix verbs with nominal bases

3.1 Conversion as event-schema metonymy in German and English

The fact that noun-verb conversion (or event-schema metonymy in terms of Cognitive Linguistics) is active in Modern High German synchronically supports the hypothesis that non-verbal bases occurring in the context of German inseparable prefixes, too, are metonymically reconceptualized as events. German displays the major semantic classes of converted verbs – namely instrument, locatum, goal, patient, agent and manner verbs – as well as a small number of means verbs, duration verbs, and stative location verbs. In the following sections, the major classes will be discussed in comparison with English. Each class will be labelled by its underlying metonymic relation.[9]

As a preliminary, it should be pointed out that German infinitival *-en* is no obstacle to the metonymic reinterpretation of non-verbal bases as events because there is a consensus in the pertinent literature that this morpheme does not have the status of a word-formation element (cf. for example Fleischer/Barz 1992: 44; Vogel 1996: 28f.). In this respect it differs from the morpheme *-ier-* and its variants *-isier-*, *-ifizier-*, which typically verbalize non-native bases although native bases occur sporadically (Eisenberg 2012: 293; Eisenberg 2020: 298). Verbs like *betonieren* 'concrete', *archivieren* 'archive', *stolzieren* 'strut' etc. are explicitly excluded here from the metonymic approach because of their overt derivational marker, which – unlike infinitival *-en* or the inseparable prefixes – determines the verbal properties of its output.

3.1.1 Instrument for Action/Motion

As in English, the base nouns of many instrument verbs denote basic-level objects in the sense of Rosch et al. (1976). The effortless interpretability of concepts like HAMMER 'hammer', SCHAUFEL 'shovel', or BÜRSTE 'brush' as events can be explained by considering that most speakers share not only general (or encyclopaedic) knowledge as to these objects, but also know

[9] Cf. for example Jespersen (1942); Marchand (1969); Clark/Clark (1979); Karius (1985); Štekauer (1996); or Baeskow (2021) for comprehensive English data sets. Very insightful contrastive analyses of converted denominal verbs in English, French, and German were performed by Marchand (1963, 1964).

how to physically interact with them. This kind of cognitively grounded knowledge can be activated to mentally simulate events in which these objects play a salient role; cf. Baeskow (2022a) for a detailed discussion. Even if speakers lack personal experience as to the use of certain basic-level objects (e. g. saddling a horse or riding a bicycle), they are nevertheless able to imagine these activities and related movements. Given these preliminaries, it is not surprising that instrument verbs form the largest class of non-derived denominal verbs not only in English (cf. e. g. Clark/Clark 1979: 776; Bauer/Lieber/Plag 2013: 285), but also in German (cf. Marchand 1964: 112).[10] The vehicle concepts of numerous instrument verbs belong to the conceptual category TOOL, and in many cases there are direct correspondences between the verbs of both languages, e. g. *sägen* 'saw', *nageln* 'nail', *schrauben* 'screw', *harken* 'rake', *hobeln* 'plane', to name but a few.

A further subclass of instrument verbs shared by English and German is created from concepts of the category MEANS OF TRANSPORT, e. g. English: *helicopter*, *taxi*, *rollerblade*; German: *segeln* 'sail', *gondeln* 'gondola', *karren* 'cart'. Some verbs of this subclass involve the application of two metonymic relations, namely *segeln* 'sail', *steuern* 'steer', *paddeln* 'paddle', *rudern* 'row' (< *Ruder* 'rudder'), *düsen* 'whiz' (< *Düse* 'jet, nozzle') and English *to wheel (up)*. In these cases, the source concept metonymically represents the means of transport of which it is a salient part (PART FOR WHOLE). According to Kövecses/Radden (1998: 65), the relative salience of these parts is motivated by the cognitive principle FUNCTIONAL OVER NON-FUNCTIONAL. For example, since the wheels are more functional in driving a car than the doors, the windshield wipers, or the fenders, they can stand for the car as a whole. Similarly, the sail is a functionally relevant part of a sailing boat, and the paddle is required to steer a canoe. In a next step, the means of transport conceptualized from the functionally salient part serves as the conceptual input to the verbalization process (INSTRUMENT FOR MOTION). Although German noun-verb conversion typically follows the criterion of strict simplicity (cf. Eisenberg 2020: 308) in that it proceeds from concepts which are expressed by morphologically simplex nouns, some morphologically complex anglicisms like *mountainbiken*, *snowboarden*, or *longboarden* are well established in the German vocabulary. A further complex innovative instrument verb is *buzzern* 'to press the buzzer', which occurs for example in casting scenarios like blind auditions.

Yet another subclass of denominal instrument verbs shared by English and German comprises verbs whose motivating concepts belong to the conceptual category BODY PARTS, e. g. English: *eyeball*, *mouth*, *hand*, *elbow*, *muscle*; German: *nasen* 'nose' (cf. Donalies 2005: 131), *äugen* 'eye', *fingern* 'temper with the fingers', *buckeln* 'bow and scrape' (< *Buckel* 'hump'). In both languages, the respective activities are readily inferred because they are embodied by all speakers in the most literal sense. Nevertheless, this subpattern of the metonymic relation INSTRUMENT FOR ACTION is productive neither in English nor in German because it is restricted by highly entrenched simplex verbs denoting activities that are performed with the body parts in question, e. g. *riechen* 'smell', *sehen* 'see', *schauen* 'watch', *sprechen* 'speak, talk', or *geben* 'give'. If these verbs co-exist with denominal verbs, the latter convey connotative nuances which are not inherent to the former. For example, in English, the verb *eyeball* 'to stare at from

[10] In this context, it is worth noting that there are no instrument-verb-forming affixes in English (Burgschmidt 1975: 30) and German.

a short distance away in an intimidating or disapproving manner' (OED) conveys a higher degree of intensity than *look* or *watch*. In German, the semantically similar verb *äugen* (< *Auge* 'eye') differs from *sehen* or *schauen* in that it is predicted of animals in its literal sense – although a metaphorical transfer to the human domain is possible, e. g. *Vorsichtig, ängstlich äugte er nach allen Seiten* 'Cautiously, anxiously, he looked in all directions' (DWDS). In its metaphorical reading, the verb also signals intensity, but the negative connotation ascribed to *eyeball* by the OED is missing. The intensity of perception is rather due to distrust or curiosity (DWDS). The German verb *buckeln* differs from the reflexive verb *sich verbeugen* 'to bow' in that it implies submissiveness.

3.1.2 Locatum for Caused Motion and Goal for (Caused) Motion

A further metonymic pattern that is well represented in both languages is LOCATUM FOR CAUSED MOTION. As in English, most locatum verbs display an applicative (or ornative) reading. Typical instances of the motivating concepts (i. e. the metonymic vehicles) are movable entities – or "placeables" in Clark/Clark's (1979: 791) terminology – each of which has a function with respect to the Goal it is brought into contact with. Thus, for example, a saddle has a function with respect to a horse, but not vice versa. Functionally relevant entities to be located with respect to other participants are either concrete objects (e. g. *satteln* 'saddle', *kacheln* 'tile', *polstern* 'upholster') or substances (e. g. *ölen* 'oil', *fetten* 'grease', *wässern* 'water', *botoxen* 'botox'). In both languages, concepts of the category SPICE are suitable mental shortcuts to activities that consist in adding ingredients to dishes, e. g. *salzen* 'salt', *pfeffern* 'pepper', *zuckern* 'sugar', *trüffeln* 'truffle'. A relatively new German locatum verb which was borrowed from English is *chippen* 'to implant a microchip under the skin of an animal, which contains the registration data of the owner and the animal' (Steffens/al-Wadi 2014: 83f.). To a lesser extent, the class of locatum verbs also comprises privative verbs. In this case, the Locatum is the entity which is caused to be removed from a Source entity of which it is an integral part. Examples from German are *schälen* 'peel', *lausen* 'delouse', *sich schuppen* 'scale', *köpfen* 'behead', *häuten* 'skin'. These verbs pattern with English *skin*, *peel*, *feather*, *bark*, or *pit*.

A further class of non-derived denominal verbs shared by English and German is that of goal verbs (or "location verbs" in Clark/Clark's (1979: 772) terminology). If the metonymic vehicles are physical goals, these verbs display either literal or metaphorical meanings, e. g. *landen* 'land', *stranden* 'strand', *betten* 'bed', *bunkern* 'bunker', *lagern* 'store', *listen* 'list', *Schanghaien* 'Shanghai', *speichern* 'store' (metaphorically *die Daten speichern* 'save the data').

The Goal is also reinterpretable as a final shape or a final state. Especially in English, there are quite a few denominal verbs whose vehicle concepts have a perceptually salient shape. If this shape is mapped onto an entity, a (metaphorical) change-of-state reading is obtained. Among the English 20th century neologisms from the OED there are verbs like *mushroom* '(cause to) expand into the shape of a mushroom', *sickle* 'of red blood cells: to become crescent- or sickle-shaped', *dog-leg* 'of a course, route, etc., or a person following it: to turn or bend', or *rosette* 'cause (cells, parasites, etc.) to form a rosette or rosettes'. Although these examples suggest that the underlying metonymic pattern GOAL 'final shape' FOR (CAUSED) MOTION is used more creatively in English, it is also attested in German. Examples of German denominal verbs exploiting the primary concept SHAPE are *bündeln* 'bundle', *knoten* 'knot', *würfeln* 'cut into cubes', or

stapeln ‘pile’, which display more literal meanings. Moreover, in contrast to English, some of these goal verbs are reflexives, e. g. *sich kringeln* ‘coil’, *sich kugeln* ‘roll over’, *sich wellen* ‘curl; become wavy’, *sich türmen* (< *Turm* ‘tower’) ‘pile (up)’, or *sich locken* ‘curl’. In each case, the visually perceptible distinctive shape of the underlying object outranks this object’s function in salience and serves as a reference point for the event construal.

The set of German goal verbs also comprises unaccusative verbs like *schimmeln* ‘mould’, *rosten* ‘rust’, *rußen* ‘soot’, *schäumen* ‘foam’, or *klumpen* ‘lump’, which denote internally caused events in the material world. According to Levin/Rappaport Hovav (1994: 52), events are internally caused if an entity or substance undergoes a change of state without the intervention of an Agent (e. g. *Das Brot schimmelt* ‘The loaf is getting mouldy’). In their unaccusative reading, these verbs only activate the motion schema (GOAL FOR MOTION). Verbs like *krümeln*, *bröseln* ‘crumble’, or *splittern* ‘splinter’ conceptualize the Goal as scattered particles that detach from a substance or entity.

The subset of goal verbs created from human roles such as *fool*, *beggar*, *knight*, *orphan*, or *widow* is restricted in both languages though slightly better represented in English. Established German verbs listed by Marchand (1964: 111) are *knechten* ‘enslave’ and *narren* ‘fool’. More recently, speakers of German borrowed the English verb *to friend* in its innovative reading ‘to add (a person) to a list of friends or contacts on a social networking website’, e. g. *Jeder darf sie frienden und unfrienden, wie er lustig ist* ‘Everyone may friend and unfriend her as they please’ (tip.berlin.de). As observed in Baeskow (2017), *frienden*, which contrasts with *sich mit jemandem befreunden* ‘become friends with someone’, is one of a set of verbal anglicisms that allow for a distinction between virtual-world and real-world activities. Further examples are *chatten* vs. *schwätzen*, *liken* vs. *mögen*, *haten* vs. *hassen*, or *followen* vs. *folgen*.

3.1.3 Proto-Patient for Action

Verbs created by the metonymic relation PROTO-PATIENT FOR ACTION are those whose base-noun concepts are classifiable as either effected objects (i. e. objects caused to come into existence by a Proto-Agent) or affected objects (i. e. entities which are acted on by a Proto-Agent without being caused to undergo a change of state). It is this dependency on a Proto-Agent in the force-dynamic world that distinguishes patient verbs from goal verbs like *schimmeln* ‘mould’, *krümeln* ‘crumble’, or *splittern* ‘splinter’, which occur without a Proto-Agent’s intervention. Both English and German display patient verbs that highlight effected and affected objects. Examples of English verbs highlighting effected objects are *muscle up* ‘develop larger muscles’, *pothole* ‘produce potholes in (ground, a roadway, etc.)’, *newspaper* (in the sense of ‘write for a newspaper’), *pastiche* (in the sense of ‘create a pastiche or parody’), or *selfie* ‘take a selfie’. In German, classical patient verbs formed from the perspective of effected objects are *buttern* ‘make butter’, *wursten* ‘make sausages’, *käsen* ‘make cheese’, *reimen* ‘rhyme’, or *münzen* ‘coin’. German verbs whose base nouns denote representations in the sense of Dowty (1991: 569) surface as non-derived patient verbs only if they were borrowed from English, e. g. *filmen* ‘film’, *texten* ‘text’, *scripten* ‘script’, *scannen* ‘scan’, *podcasten* ‘podcast’, *storyboarden* ‘storyboard’. The relative salience of the effected object also manifests itself in unergative verbs of the type *kalben* ‘calve’, *fohlen* ‘foal’, *lammen* ‘lamb’. However, the pattern according to which

the young animal (i. e. the Proto-Patient of the action schema) metonymically stands for the activity of giving birth to this animal is unproductive in both languages.

As indicated above, Proto-Patients are also interpretable as affected objects. As such, they are part of the objective aimed at by an Agent (cf. Primus 1999: 32). Verbalized nouns that give relative salience to affected objects are first of all those which denote activities related to the catching of animals (e. g. English: *mouse*, *fish*, *eel*, *snoek*, *yabby*, *otter*; German: *fischen* 'fish', *mausen*[11] 'mouse', *krebsen* (literally) 'catch crayfish') or the gathering of natural products (e. g. English: *mushroom*, *fowl*, *apple* (< *fir apple*) 'gather fir cones', *blackberry*, *egg* 'collect (wild fowls') eggs'; German: *ernten* 'harvest', *heuen* 'hay', *beeren* 'berry'). This pattern has been slightly more productive in English than in German. Following Marchand (1963: 177), it is assumed here that meals metonymically conceptualized as events are affected objects, too. Apart from *frühstücken* 'breakfast', further German verbs following this pattern – namely *picknicken* 'picknick', *lunchen* 'lunch', and *brunchen* 'brunch' – are again mediated by English.

From a contrastive perspective it is interesting that English displays a number of 'verbs of entertainment' related to games (*ping-pong*, *pat-a-cake*, *bridge*), sports (*golf*, *cricket*, *ski*), music (*guitar*, *fiddle*, *drum*), dancing (*quadrille*, *boogie*, *boogaloo*), and other leisure activities (*party*, *potlatch*, *rally*, *winter-sport*). The patient-like character of these verbs manifests itself in collocations like *play bridge*, *play golf*, *play the guitar*, *do/dance the boogie*, or *throw a party*, which signal affectedness because games, dances, or parties do not unfold independently of human agents. Similarly, musical instruments do not produce sounds on their own. The construal of events in which someone plays a musical instrument is slightly more productive in German (e. g. *trompeten*, *flöten*, *geigen*, *trommeln*, *klampfen*, *orgeln* 'play the trumpet, flute, violin, drum, guitar, organ'). In both languages, some verbs formed from the names of musical instruments also have metaphorical interpretations, and the images thus created may differ considerably, e. g. English *to trombone* 'move to and fro as in playing the trombone' (OED) vs. German *etwas (aus-)posaunen* 'make internal information public'. While the English image is based on the perceptually salient arm movements typically performed by someone playing the trombone, the German metaphor evokes the sound made by this instrument.

As far as German verbs formed from the names of games are concerned, Marchand (1964: 113, 117) lists *kegeln* 'bowl', *skaten* 'play skat', *würfeln* 'dice', dialectal *binokeln*, and *pokern* 'play poker', the latter of which was borrowed from English. A neologism to be added to this subclass is *gamen* (< English *game*), which developed a specific meaning 'engage in computer games' in German and hence contrasts with the more general verb *spielen* 'play'. A subclass which is extended productively according to the English model is the one containing verbs of dancing, e. g. *twisten*, *steppen*, *rocken*, *rappen*, *raven*, *hip-hoppen*, *breakdancen* (cf. Baeskow 2018).[12] Nouns ending in a vowel are excluded for phonological reasons (**boogie-en*, **tango-en*,

[11] The verb *mausen* is no longer used beyond the proverb "Die Katze lässt das Mausen nicht". The corresponding English proverb is "The leopard doesn't change his spots".

[12] Depending on the perspective, verbs of dancing can also be considered instances of the metonymic relation MANNER OF MOTION FOR MOTION (cf. section 4).

**boogaloo-en*). The only native verb of dancing is *walzen*, which occurs in Goethe's novel *Die Leiden des jungen Werther* in the sense of 'to dance a waltz'.[13]

(2) […] und ich habe im Englischen gesehen, dass Sie gut *walzen* […] und da wir nun gar ans Walzen kamen und wie die Sphären umeinander herumtollten […].
(*Reclam*, reprinted 2012: 26)
'[…] and in the English dance, I saw that you waltz well […] and now that we were waltzing and frolicking around each other like the spheres […]'
(Translation by HB).

Generally, however, speakers of German make use of the syntactic phrase *X tanzen* (e. g. *Walzer tanzen*, *Tango tanzen*), which in English constitutes an alternative (*do/dance the boogie*).

3.1.4 Means for Action

The extension of a further class, namely that of means verbs, is motivated by the need to verbalize for example the use of popular online services or the application of approved methods. Although German verbs like *googeln*, *skypen*, *twittern*, *facebooken*, *zoomen*, or *airbnben* are influenced by English because the motivating concepts were developed in the United States (cf. Baeskow 2017), verbs such as *faxen* 'fax', *kabeln* 'cable', or *funken* 'radio' show that the metonymic relation MEANS FOR ACTION was already established before the Digital Age. As in English (e. g. *Marconi*, *Rolf*, *Hobday*), some verbs are created from the names of inventors, e. g. *morsen* (< (Samuel F. B.) Morse) 'morse', *röntgen* (< (Wilhelm Konrad) Röntgen) 'x-ray', *kneippen* (< (Sebastian) Kneipp) 'undergo a Kneipp therapy', or, more recently, riestern (< (Walter) Riester) 'make private provision for old age with a Riester pension'. From a cognitive point of view, the inventor metonymically stands for the method he or she developed, and this method then serves as a reference point for the activity of applying this method.

3.1.5 Manner of Action for Action and Manner of Motion for Motion

Means verbs of the type *Hobday*, *röntgen* are to be semantically distinguished from verbs like *Houdini* (< (Harry) Houdini), *Wayne* (< (John) Wayne), *Richard Nixon* (Clark/Clark 1979), *hegeln* (< (Georg Wilhelm Friedrich) Hegel), *genschern* (< (Hans-Dietrich) Genscher, the former German Foreign Minister), or *merkeln* (< (Angela) Merkel), which are created by the metonymic relation MANNER OF ACTION FOR ACTION. In these cases, the metonymic vehicle merely functions as a *tertium comparationis*. As pointed out by Pang (2010: 1338), eponymy is first of all a WHOLE-FOR-PART relation because a person's biography (or macronarrative) stands for one life-narrative, or, more precisely, for one "act or behavior embedded in one of the life-narratives" which is (contextually) salient.[14] Such an act or behaviour is referred to as a minimal narrative by Pang. Since a person's life-narrative is a complex network of information, it is not surprising that speakers of different languages may foreground and verbalize different minimal narratives ascribed to a personality. For example, according to the website fremdwort.de, the verb *to Merkel* was coined by the British press in order to denote an event in which someone expresses their disapproval in a way that is ascribed to the former federal chancellor Angela

[13] Throughout the text, the denominal verbs occurring in the examples will be highlighted by the use of italics.

[14] A life-narrative is a representation of a person's experiences which makes up this person's biography.

Merkel. In Germany, a different biographical aspect ascribed to Angela Merkel serves as a reference point to the event construal, namely her alleged reluctance to make decisions. Eponymous verbs are likely to disappear if the name bearer ceases to be a focus of public interest. German verbs like *barzeln* (< (Rainer) Barzel), *genschern*, or *beckern* (< (Boris) Becker) are a case in point (cf. Neef 2005: 111). English manner-of-action verbs like *to Uncle Tom*, *to Micawber*, *to Mickey Mouse* (OED), *to Superman* (Davies (2018–), or *to Sherlock Holmes* (nzetc.victoria.ac.nz) and German *schlumpfen* 'smurf' reveal that the verbal eponyms may also be created from the names of fictional characters, each of which is ascribed a set of life-narratives by its creator from which (contextually) salient minimal narratives can be selected and verbalized.

If the motivating concept is of the category ANIMAL, a behavioural trait or cluster of behavioural traits the animal is conventionally or contextually perceived to display is mapped onto a person's way of acting (e. g. English: *watchdog*, *tomcat*, *pussy*; German: *hamstern* 'hoard', *bocken* (< *Bock* 'ram') 'sulk', *stieren* (< *Stier* 'bull') 'stare', *büffeln* (< *Büffel* 'buffalo') 'cram') or a person's way of moving (e. g. English: *crayfish*, *beetle*, *eel*; German: *robben* 'crawl', *tigern* 'pace (like a tiger)', *dackeln* 'move about like a dachshund'). Again, there may be language-specific contrasts. For example, while English *to crayfish* conveys the meaning components 'to move like a crayfish' or 'to act in a cowardly or scheming manner' (OED), the corresponding German verb *krebsen* in its manner reading conveys the image of someone labouring unsuccessfully. Similarly, *to eel* maps the animal's habit of moving sinuously onto a human being, whereas German *sich aalen* means 'to stretch out comfortably', 'to loll (about)'. In both languages, the metonymic relation MANNER OF MOTION FOR MOTION also underlies verbs created from material concepts that evoke dynamic mental images, such as *to cartwheel*, *to screwball*, *to yo-yo (up and down)* in English or *eiern* (< *Ei* 'egg') 'wobble', *wogen* (< *Woge* 'wave') '(poetically or metaphorically) surge, welter', *kreisen* (< *Kreis* 'circle'), *kurven* (< *Kurve* 'curve') in German. A more innovative verb coined by Erwin Strittmatter is *pfeilen* (< *Pfeil* 'arrow'), which depicts the swallows' way of moving through the air like arrows; cf. Fleischer/Barz (2012: 436).

3.1.6 Proto-Agent for Action

The metonymic relation MANNER OF ACTION FOR ACTION presented in the previous section helps to distinguish between verbs of the type *to fool (about)*, *to doll* (*up*), *to Donald Trump*, which only allow for a manner interpretation, and verbs formed from occupational nouns like *to nurse*, *to butler*, or *to nanny*, which highlight the Proto-Agent although a manner reading is contextually available, too. Consider for example the following sentences from the Internet:

(3) a. Servants would normally live in the home of their employer, but in this case, it would seem likely that he *butlered* at a large Victorian house just across the road called Spring Cottage […]

(davenportstation.org.uk)

b. The waiters and waitresses also *butlered* a variety of other appetizers.

(tripadvisor.co.uk)

Without contextual information, the concept BUTLER evokes a scenario in which a (male) individual serves another individual of superior rank in a feudal setting. Serving is the activity or

function which typically defines the role of a butler. In (3a), the context signals that the referent of *he* was a butler by profession and hence displayed class-membership. The metonymic relation underlying the verb *to butler* in this sentence is PROTO-AGENT FOR ACTION. In sentence (3b), which is part of a customer review of a noble restaurant, the concept BUTLER provides mental access to a similar scenario, namely that of serving. However, the Proto-Agents of the sentence – namely the referents of *the waiters and waitresses* – are not professional butlers, but perceived to serve the appetizers in a butler-like manner. These examples show that the interpretation of an occupational noun as an agent or manner verb strongly depends on the context.

As far as German is concerned, verbs like *quacksalbern* 'quack', *lümmeln* 'sprawl', *schulmeistern* (< *Schulmeister* 'schoolmaster') 'lecture', *doktern*, and even *schauspielern* (< *Schauspieler* 'actor') 'play, act' are considered here to be manner-of-action verbs rather than true agent verbs because they denote temporary activities in which an individual is perceived to act like a quack, a schoolmaster, an actor, etc. Moreover, as pointed out by Marchand (1963: 174), verbs like these tend to display a pejorative connotation which, however, is not necessarily inherent to the motivating concepts. For example, the verb *schauspielern* evokes an everyday scenario in which someone 'plays a role' that does not correspond with his or her real character or nature. In other words, a person pretends to be what he/she is not in order to deceive other people.

Significantly, the set of non-derived denominal verbs following the pattern PROTO-AGENT FOR ACTION is restricted in both languages. In the pertinent literature, two explanations are offered for the underrepresentation of the Proto-Agent in noun-verb conversion and hence of a participant that is "by default given more prominence in linguistic structures than participants in other roles" (Himmelmann/Primus 2015: 48). First, English (as well as German) displays a large number of deverbal agent nouns formed from simplex verbs. If these nouns were reverbalized (e. g. **to teacher*, **to baker*; **lehrern*, **bäckern*), the resulting denominal verbs would be synonymous with the verbs that served as an input to the verbalization process (cf. Jespersen 1942: 99; Marchand 1969: 373; Clark/Clark 1979: 799f.; Bauer 1983: 279). The second explanation is directly related to the first one. As observed by Clark/Clark (1979: 799f.), a verb like *butcher* – to which we may add for example *butler*, *author*, *lawyer*, *chauffeur*, *monger*, *puppeteer* and German agent verbs like *schriftstellern* (< *Schriftsteller* 'author') 'compose literary texts', *schreinern*/*tischlern* (< *Schreiner*/*Tischler* 'carpenter') 'do carpentry', *schneidern* (< *Schneider* 'tailor'), *gärtnern* (< *Gärtner* 'gardener'), or *schiedsrichtern* (< *Schiedsrichter* 'umpire') – lack a verbal ancestor. In each case, the occupation serves as a mental shortcut to the activity or a set of activities typically associated with it. A further, more general explanation for the underrepresentation of the Agent is that event-schema metonymy provides speakers with the means to give relative salience to minor participants such as the Instrument or the Goal and to create events from those participants which would otherwise have to be expressed periphrastically, e. g. *to bottle the wine* vs. *to put the wine in bottles*; *den Nagel in die Wand hämmern* 'hammer the nail into the wall' vs. *den Nagel mit dem Hammer in die Wand schlagen* 'drive the nail into the wall with/using a hammer'. The criterion of economy of expression is vital to the formation and interpretation of non-derived denominal verbs.

The contrastive analyses performed in this section have shown that non-derived denominal verbs follow the same metonymic patterns in English and German. As compared with the wealth of denominal verbs listed by Clark/Clark (1979) and the considerable number of

20th/21st-century neologisms from the OED (cf. Baeskow 2021), the inventory of German converted verbs is more restricted. However, the overall picture changes if we take into consideration that event-schema metonymy is also operative in more complex German verbs which according to Fleischer/Barz (1992: 308) are the product of *Präfixkonversion* ("prefix conversion"). This point will be discussed in the following sections.

3.2 The co-existence of unprefixed and prefixed verbs

As pointed out in section 1, conversion competes with native prefixation especially in German. Although quite a few German prefix verbs – especially those displaying inseparable prefixes – have non-verbal bases, it will be shown in this section that these verbs do not violate the RHR because their bases, like those of converted verbs, are reinterpretable as events. So far, this proposal is in line with Wunderlich (1987, 1997) and Stiebels (1998). However, it differs from these approaches in two significant ways. First, it allows us to dispense with the rather complex theoretical apparatus required by these authors because the reinterpretation of material concepts (i. e. nouns) as events is again a matter of event-schema metonymy – as in the case of conversion proper.[15] Secondly, the metonymic reconceptualization does not take place prior to prefixation, but inside the derivative. Thus, the generation of virtual verbs which are not or no longer attested outside the derivatives (e. g. **dachen*, **schriften*, †*sohlen*, †*golden*) is precluded. Before this proposal is presented in more detail, a brief overview of the diachronic and synchronic properties of the inseparable prefixes is required.

3.2.1 Diachronic and synchronic properties of inseparable verbal prefixes

The German inseparable prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-* have their origin in local adverbs or prepositions. According to Habermann (2015: 1805), they show the highest degree of desemanticization because they lost not only their stress, but also their status as free morphemes. In this respect they differ from particles like *aus-* (e. g. *ausschlüpfen* 'hatch out'), *durch-* (e. g. *durchschimmern* 'shimmer through'), or *herum-* (e. g. *herumsitzen* 'sit around'), which are less grammaticalized and still exist as prepositions or adverbs.[16] Verbal particles bear primary stress and become separated from their bases in verb-first and verb-second constructions (cf. for example Ackerman/Webelhuth 1998: 314; König/Gast 2007: 277–279; Eisenberg 2020: 265). In the present study, the focus will be on inseparable prefixes, which are more relevant for the problem of headedness outlined in section 1 because they occur much more frequently in the context of non-verbal bases than separable ones.[17]

According to the etymological dictionary of German compiled by Pfeifer et al. (1993), which is online accessible, the prefix *be-*, which co-existed with Old High German/Middle High German *bī* (New High German *bei* 'at, near'), lost its independence already in Old High German when the adverb *bī* assumed a prepositional function. Because of its original spatial meaning "um…herum" ('around'), the inseparable prefix predominantly signals that there is a strong

[15] Both Wunderlich and Stiebels make use of semantic decomposition and meaning postulates.

[16] Note that the morphemes *über-*, *unter-*, *um-*, and *durch-* can function as inseparable prefixes and as particles (Olsen 1996: 262; Eisenberg 2020: 265). Formally, they are identical with prepositions (Fritz 2011: 42).

[17] Cf. for example Dewell's (2015: 279–284) index of verbs, prefixes, and particles.

impact on an object which affects this object as a whole and which is grammatically reflected by the transitivity of *be-* verbs.

The prefix *ent-* presumably has its origin in a Proto-Germanic prefix **and(a)-* which – like Old Indo-Aryan *ánti* 'opposite, in front of, near', Greek *antí* (*ἀντί*) 'in view of, as opposed to', or Latin *ante* 'before, in front of' – belongs to Indo-European **ant-* 'front, forehead'. Synchronically, *ent-* verbs denote the reversal of a process (e. g. *entkleiden* 'undress') and/or removal (e. g. *entrinden* 'bark'). A further synchronic function of *ent-* is to signal the inchoative or ingressive *Aktionsart* (e. g. *entbrennen* 'catch fire'). Diachronically, however, *ent-* in this function has different predecessors. Pfeifer et al. (1993) assume that the prefix *ent-* displayed by inchoative verbs goes back to Old High German *in-*, Middle High German *in-*, *en-*, and that these prefixes collapsed into one synchronically indistinguishable form.

The prefix *er-* originates from the Old High German preposition *ur* 'from', 'out of', or 'up, upwards', which according to Pfeifer et al. is still retained in the German noun *Urlaub* 'vacation, holiday'. While the original prepositional meaning, which still surfaces in verbs like *sich erheben* 'rise' or *ersprießen* 'sprout', has become obsolete, *er-* now mainly signals a resultative 'attainment' reading (e. g. *ergaunern* 'scam') or functions as an *Aktionsart* marker. Examples of the latter function are perfective *erschießen* 'shoot' and inchoative *erröten* 'blush'.

According to Habermann (2015: 1805) and Pfeifer et al. (1993; s. v. *ver-*), the prefix *ver-* has three Gothic ancestors, namely the prefixes *fra-* 'away', *faír-* and *faur-*. These prefixes are semantically traceable to an Indo-Germanic root noun **per* 'going beyond' which occurs in prepositions and adverbs. Habermann also points out that the local meaning is still discernible in New High German verbs like *verrücken* 'to push something somewhere', *verschwinden* 'to disappear', or *verführen* 'to seduce'. Verbs like *vergolden* 'gild' ('applicative'), *verspeisen* 'eat up' ('consumption'), *verschmelzen* 'merge' ('loss of independence'), *sich verlaufen* 'go astray' ('deviation from a course'), *verwelken* 'fade' ('inchoative'), or *verbleiben* 'remain' ('intensive') show that beyond this diachronically motivated local meaning, the semantics of *ver-* is rather heterogeneous (cf. Fleischer/Barz 1992; Dewell 2015; Baeskow 2017).

Finally, the prefix *zer-* has its origin in the Old High German morphemes *za-*, *zi-* and *zar-*, *zir-* which share their meaning 'auseinander' ('apart') with Latin *dis-* and Indo-Germanic **dis-*, **dṷis-* 'apart' or **dṷi*s 'twice' (Habermann 2015: 1805). By conveying the impression of destruction, which manifests itself for example in verbs like *zerfleischen* 'mangle', *zerbrechen* 'break up', or *zerlaufen* 'melt', the prefix *zer-* fills a semantic niche.

As shown by Fritz (2011: 45f.), who provides an etymological treatise of originally local adverbs, *be-*, *ent-*, *er-*, *ver-*, and *zer-* reached the last of four diachronic stages, which is characterized by loss of stress, phonological change, and formal independence of adverbs or adpositions.

The diachronic development sketched above shows that the prefixes never displayed verbal properties. This state of affairs raises the question where the verbalizing potential synchronically ascribed to these morphemes should come from (cf. Wunderlich 1987: 325 and Olsen 1990: 43 for a similar view). Moreover, since denominal verbs like *hämmern* 'hammer', *lüften* 'ventilate', *wässern* 'water', *salzen* 'salt', *schimmeln* 'mould' and many more are well-established in German (cf. section 3.1), no further verbalization by means of prefixes is required. As

predicted by Lieber's (2004: 161) Redundancy Restriction, affixes do not add (semantic) information that is already inherent to their bases. Nevertheless, each of these verbs may co-occur with at least one of the inseparable prefixes. An important link between the original meanings of grammaticalized spatial morphemes and their synchronic functions as prefixes or particles is revealed by Brinton (1988: 194f.). Drawing on insights from Bolinger (1971) and Traugott (1978), according to which the development of situations through time is conceived of in spatial terms, she argues that the originally spatial meanings of these morphemes have an effect on the synchronic (a)telicity of situations. Thus, "particles which express movement from, to, over, or through come to indicate situations orientated or headed towards a goal (telic situations), whereas particles which express stasis or location [e. g. English *on*; HB] come to indicate situations atelically continuing or repeating at a particular time." Some concrete examples are provided by Traugott (1978: 391–393), who observes that 'terminative/resultative' (telic) markers derive from terms denoting source (e. g. Gothic *fra-*, German *ver-*, *er-*, *aus-*), goal, path (e. g. German *ver-*), and the vertical plane (e. g. German *auf-*). While there are no clues as to verbal behaviour in the history of the German inseparable prefixes, they obviously adopted the function of aspectual markers. Moreover, while a prefix may synchronically express more than one *Aktionsart* (cf. Fleischer/Barz 1992: 320–327), there is not much semantic overlap because the prefixes tend to occupy semantic niches, and this behaviour is not entirely arbitrary either. For example, recall that according to Habermann (2015: 1807), the local meaning of *ver-* is still discernible in New High German verbs of the type *verrücken* 'to push something somewhere'.

A unified approach which accounts for the synchronic aspectual and semantic diversity of the five inseparable prefixes and which is in line with their historical development is provided by Dewell (2015), who adopts a cognitive framework. According to Dewell, these prefixes impose a different 'perspective' on the verbs they combine with. Following Talmy (2000: 68–76), Dewell distinguishes two perspectival modes that serve to conceptualize an object or event: sequential and synoptic. The sequential construal is more dynamic and allows us to keep a close track of a moving entity and the activity it is involved in. The synoptic construal, by contrast, is more holistic because the focus of attention is directed from a distance at the setting as a whole and on what is going on in this setting. Thus, it is comparable to a bird-eye's view. Given these perspectives, we may state that event-schema metonymy *per se* prompts a sequential construal: A salient participant (which corresponds to the base noun) is selected from a set of participants interacting in a schematic event in order to provide mental access to the whole event. This participant is the attention centre (cf. Baeskow 2020), and by zooming in on this participant we see the course of the event unfold; cf. section 3.1. By contrast, prefixation involving inseparable prefixes prompts a synoptic construal. In this case, the overall scene as a "shaped whole" (Dewell 2015: 263) is more relevant than the participants interacting therein. At the level of primary experience, we are dealing here with a FIGURE-GROUND effect. While the focus of attention is on the FIGURE (i. e. on a salient participant such as the Instrument, the Proto-Agent, or the Locatum) in event-schema metonymy, the overall scene and hence the GROUND (or LANDMARK in Dewell's terminology) is taken into view in the case of prefixation involving inseparable prefixes. As far as causative verbs are concerned, the scene or LANDMARK is often represented by a Proto-Patient that surfaces as the accusative object, e. g. *Sie bewässerten die städtischen Grünanlagen* 'they irrigated the urban green areas'. Significantly, the base-noun participant (e. g. the Locatum *Wasser* in the case of *bewässern*) remains a noteworthy part of the

scene, but its degree of salience is not as high as in the event denoted by the unprefixed verb (i. e. *wässern*) because our attention is distributed over the scene as a whole. The prefixes direct our attention to event-internal factors such as motion along a set of directed paths, an entity's transformation in a setting, or a moment of change. This function will become more concrete as we proceed.[18]

Moreover, although particles and prefixes display a relatively high degree of polysemy (e. g. Henzen 1957: 103), Dewell succeeds in identifying highly abstract schematic images not only for particles, but also for *be-*, *ent-*, *er-*, *ver-*, and *zer-*. Each schematic image abstracts over the various meanings associated with a particle or prefix and hence functions as a least common denominator for these morphemes' semantics. To render these highly abstract issues more tangible, an interesting sample of verbs that developed around the German concept SCHOTTER 'gravel, ballast' will be analysed from a cognitive perspective in the following section.

3.2.2 A case study: The verb *schottern* and its prefixed competitors

A possibility emerging from the cognitive view outlined above is the combination of derivation and event-schema metonymy in the case of the so-called German "prefix conversion" (Fleischer/Barz 1992: 308). Under the present approach, the inseparable prefixes function as triggers for the metonymic reanalysis of their non-verbal bases as events – independently of whether or not a corresponding verb is synchronically attested (e. g. *schottern*), obsolete (e. g. †*sohlen*), or non-existent (e. g. **kernen*). At the same time, they impose a synoptic perspective on the conceptually renanalysed events, thus deprofiling the salient participant denoted by the non-verbal base while focussing on the setting as a whole. However, since the base-noun participant remains an integral part of the metonymically analysed event, the sequential perspective is mentally implied but conceptually backgrounded in the context of inseparable prefixes. Note that the sequential construal is also backgrounded by the prefixes if the base is an existing simplex verb (e. g. *die Blumen gießen* 'to water the flowers' vs. *die Blumen begießen* '*be*-water the flowers'). Strong synchronic support for the hypothesis that the inseparable prefixes operate on metonymically construed events comes from the co-existence of synchronically attested unprefixed and prefixed verbs. Consider for example the verb *schottern* (< *Schotter* 'gravel, ballast'), which is polysemous in isolation and which also occurs in the context of the prefixes, *be-*, *ent-*, and *ver-*.

---

[18] Evidence for the cognitive reality of the two types of construal comes from the fact that they also surface in the syntax. Consider for example the following sentences from Talmy (2000: 71), both of which describe a scene in which a few houses are dispersed over a valley.

(i) There is a house every now and then through the valley. (Sequential mode)

(ii) There are some houses in the valley. (Synoptic mode)

The difference between the two sentences manifests itself in the selection of forms that convey the impression of either dynamism (sequential mode) or inertness (synoptic mode). In (i), the singular form of *house*, the subject agreement, the adverbial expression of moderate temporal dispersion (*every now and then*), and the motion preposition *through* encode the sequential and hence more dynamic perspectival mode. This example shows that a sequential construal is suited to express fictive motion. In (ii), plural number and agreement, the quantifier *some*, which indicates a moderate total quantity, and the locative preposition *in* convey a more static impression of the same scene.

(4) a. Im Februar hatte man gerade mal die Trasse *geschottert*, jetzt liegen immerhin schon die Schienen.

(DWDS)

'In February, the track had only just been gravelled, but now the rails are already in place.'

b. Mehrere Bundestagsabgeordnete und der Vorstand der Linken in Nordrhein-Westfalen gehören zu den Unterzeichnern eines Aufrufs zur Aktion „Castor *schottern*".

(Steffens/al-Wadi 2014: 386)

'Several members of the Bundestag and the executive committee of the Left Party in North Rhine-Westphalia are among the signatories of a call for the action "Castor schottern"'.

c. […] auf dem Mountainbike *schotterte* er zuletzt beim Dolomitenmann in Lienz mutig die Wanderwege hinunter. „So etwas mach' ich nimmer, das war echt brutal", […]

(COSMAS II)

'[...] on his mountain bike, he last bravely gravelled down the hiking trails at the Dolomitenmann in Lienz. "I'll never do anything like that again, it was really brutal", [...].'

(5) a. Unser Firmeninhaber Heinrich Knorr hatte nach einer Methode gesucht, wie man Wald- und Forstwege auf effizientere Art und Weise *beschottern* kann. Bisher wurde der Schotter undosiert auf der gesamten Fläche eines Waldwegs aufgetragen […] Im Jahre 2006 entwickelte er daher eine patentierte Methode, wie man die Menge des Schotters zielgerichtet und dosiert auf den Wald- und Forstwegen streuen kann.

(knorr-transporte.de)

'Our company owner Heinrich Knorr had been looking for a method to gravel forest and forestry roads in a more efficient way. So far, the gravel has been applied unmetered over the entire surface of a forest road. […] In 2006, he therefore developed a patented method of spreading the amount of gravel in a targeted and dosed manner on the forest and woodland paths.'

b. Auch Ludwigshafener, die ihren Garten *entschottern* wollen, können sich bei der ILA bewerben.

(rheinpfalz.de)

'Ludwigshafen residents who want to clear their garden of gravel can also apply to the ILA.'

c. Wenn niemand der Hinterbliebenen den Grabstein wolle, werde er in der Regel *verschottert*.

(COSMAS II)

'If none of the surviving relatives want the gravestone, it is usually turned into gravel.'

Since gravel or ballast is a coarse, hard material used in road building or rail construction, the concept SCHOTTER is suited to provide mental access to a situation in which a street or railway bed (i. e. the Proto-Patient of the action schema) is covered with this material. This situation corresponds with the conventionalized LOCATUM-FOR-CAUSED-MOTION reading of the verb *schottern*, which is activated in (4a). More recently, this verb assumed a further meaning component, namely 'to obstruct train traffic by removing the ballast from the bed of a railway.' According to Steffens/al-Wadi (2014), this reading is datable with some precision because it was created for the protest action "Castor schottern" initiated in September 2010. The purpose of this activity was to prevent the Castor transport to the interim nuclear waste storage in Gorleben (Lower Saxony) by removing lots of gravel from the railway bed.[19] Presumably, the

[19] In 2010, *schottern* in this privative sense was nominated for the "Word of the Year" by the *Gesellschaft für deutsche Sprache*.

unexpected though perfectly imaginable privative reading was intended to attract public interest, and its creative force is enhanced by an additional metonymy according to which the concept CASTOR (i. e. a container in which nuclear waste is stored) stands for the route to be cleared of ballast.[20] Yet another innovative reading of the verb *schottern* can be observed in (4c). In this example, the manner of motion stands for the whole motion event. The context evokes a scenario in which the mountain biker (i. e. the Proto-Agent of the action schema) cycles down the hiking trails, with the wheels of his bike making their way through the gravel that covers the routes. This innovative use of the verb *schottern* conveys a very dynamic and vivid impression of the activity going on in this setting. What is interesting about the examples in (4) is that apart from the established applicative reading, the innovative privative and manner-of-motion readings, too, are readily available in the given contexts by event-schema metonymy alone, i. e. without the intervention of inseparable prefixes. In each case, the metonymic reconceptualization of the material concept SCHOTTER as an event gives rise to a sequential construal which in (4c) is reinforced by the adverbial particle *hinunter* 'down'.[21]

The examples in (5) show that the verbalized noun *Schotter* also occurs in the context of inseparable prefixes. Obviously, however, the existence of the unprefixed verb *schottern* and its various readings strongly suggests that these prefixes neither change the word-class of their base nor function to provide verbal arguments, which are available from the small set of event schemata introduced in section 2. This state of affairs raises the question how the metonymically created verb *schottern* can be distinguished from its prefixed competitors, which do not seem to be redundant. At this point, Dewell's differentiation between a sequential and synoptic construal gains relevance. Let us begin by looking at the context in (5a), which provides a good illustration of this distinction. The passage "[…] wie man Wald- und Forstwege auf effizientere Art und Weise beschottern kann" ('[…] how to *be*-gravel forest and forestry roads in a more efficient way') depicts the main function of the prefix *be-*, which is to locate a path from a source of energy (usually the Proto-Agent, which is not mentioned in (5a)) to a focal accusative LANDMARK (realized as *Wald- und Forstwege*). This path, which in the example represents the directed motion of particles, is diffuse in that it does not end at a specific point on the LANDMARK. More technically, the path defined by *be-* consists of a set (or multiplex) of vectors which have a common starting point and whose endpoints are randomly distributed over the LANDMARK'S surface, as illustrated in Figure 1.[22]

[20] *Castor* is an acronym consisting of the initials of *Cask for Storage and Transport of Radioactive Material*.

[21] In this context, it should be noted that German particle verbs, i. e. verbs displaying separable prefixes like *auf-*, *unter-*, *ein-*, *hinunter-*, etc., always prompt a sequential construal (cf. Dewell 2011; Dewell 2015: 11–51).

[22] Dewell's (2015: 57, 182) schemata for the prefixes *be-* and *ver-* are reproduced here with kind permission of John Benjamins Publishing Company. No part of this book may be reproduced in any form, by print, photoprint, microfilm, or any other means, without written permission from the publisher.

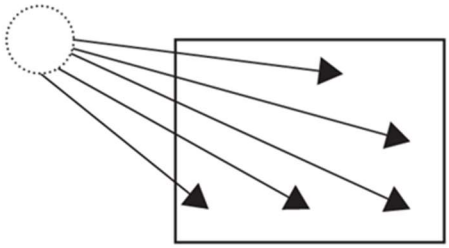

Figure 1: Schematic *be-* (Dewell 2015: 57)

Although the method developed by Heinrich Knorr allows for a controlled and well-dosed distribution of the gravel, the path of the particles that make up the coarse material consists of numerous vectors, and the final location of the individual particles on the surface remains undetermined, or diffuse. The prefix *be-* profiles the directed though random distribution of the particles on the forestry roads, thus focusing on the setting as a whole. This is the synoptic perspective. By contrast, the subsequent passage "Bisher wurde der Schotter undosiert auf der gesamten Fläche eines Waldwegs aufgetragen" ('So far, the gravel has been applied unmetered over the entire surface of a forest road') reflects a sequential construal which directs the reader's attention from the moving gravel to the changing surface of its final destination. Moreover, as observed by Dewell (2015: 83), *be-* verbs often contrast with their unprefixed variants in that they denote complex technical routines rather than everyday activities. This semantic nuance, which accounts for doublets like *wässern* 'water' vs. *bewässern* 'irrigate', *lüften* vs. *belüften* 'ventilate', or *tanken* vs. *betanken* 'refuel', also becomes most evident in (5a). Another important observation made by Dewell (2015: 55) is that the *be-* variants of doublets like those listed above convey the impression of "sustained activities" because the activities denoted by these verbs do not have concrete endpoints. Thus, the *be-* paths are also temporally diffuse.

In sentence (5b), the verb *schottern* is prefixed by *ent-*, which roughly describes removal, or separation (cf. Eisenberg 2020: 274; Dewell 2015: 100). In their reversative reading, *ent-* verbs like *entschottern* are in an antonymous relation to applicative *be-* verbs because they denote the undoing of a prior process referred to by the base or associated with the base. In (5b), the process to be reversed is that of covering the garden with gravel – as practiced by some garden owners nowadays. Like *be-*, the prefix *ent-* profiles a multiplex of homogeneous paths which, however, does not extent from a source of energy (the Proto-Agent) towards an accusative LANDMARK, but leaves this bounded region.[23] Once again, the prefix verb – unlike its unprefixed variant – induces a synoptic construal because the focus of attention is not on the gravel and the role it plays in the event, but on the departure of material from an accusative LANDMARK, which is the garden that is cleared of the gravel it was covered with in (5b).

As far as the verb *verschottern* in (5c) is concerned, the gravel is the Goal or, more precisely, the result of the causative activity. Although the class of German *ver-* verbs is semantically heterogeneous, Dewell convincingly shows that an entity's loss of its original status is the (highly abstract) core meaning underlying all verbs of this class. Significantly, however, the focus of attention is not on this entity's change of state. Dewell's (2015: 182) very abstract

[23] For more detailed analyses of the individual meaning components underlying the abstract *be-* and *ent-* schema the reader is referred to Dewell (2015: 53–98, 102–125).

schema for *ver-*, which is represented below, consists of two images. The first one depicts a setting in whose centre a FIGURE is located. Due to the synoptic perspective, we do not concentrate on what happens to this entity, but on the setting, which in the second image no longer contains the FIGURE (at least in its original form).

Figure 2: *Ver-* as synoptic displacement (Dewell 2015: 182)

According to this schema, the prefix *ver-* profiles the "moment when a FG [FIGURE; HB] loses its original status and can no longer be recognized or defined in its original role in the synoptic setting." (Dewell 2015: 190) Applied to (5c), the tombstone schematically contained in the first image is no longer part of the second image after its transformation into gravel, which rendered it unrecognizable.

The discussion of the verb *schottern* and its prefixed variants confirms that the prefixes do not have a verbalizing function, but induce a shift from the sequential to the synoptic perspective, thus requiring non-verbal bases to be metonymically reinterpreted as events. The discussion further reveals that a successful shift of perspective from sequential to synoptic depends on the metonymic relations underlying verbalized nouns. For example, the verb *schottern* is compatible with inseparable prefixes only in its applicative or privative locatum reading (*beschottern*, *entschottern*) and in its goal reading (*verschottern*). By contrast, its highly dynamic manner-of-motion reading 'to move by cycling down the gravelled hiking trails' does not motivate a synoptic construal. This observation, which will be elaborated in section 4, allows for the hypothesis that the inseparable prefixes operate over metonymic patterns that underlie verbalized nouns, or, more specifically, over the event types represented by these patterns.

4 Generalizing observations

The data collected for this study, which are displayed in the appendix, show that there is no one-to-one relation between prefixes and metonymic patterns and that some degree of semantic overlap is tolerated. Nevertheless, each prefix shows preferences for certain patterns – depending on its semantic properties. In German, unprefixed verbs which follow the metonymic pattern LOCATUM FOR CAUSED MOTION are in competition with verbs prefixed by *be-*, *ent-*, and *ver-*. If *be-* operates on events which are analysable in terms of this metonymic relation, an abstract set of paths which extend from a source of energy to a focal accusative LANDMARK is being profiled. The elements which make up the path vectors are quite heterogeneous and include for example particles (*beschottern*, *bestäuben* 'dust'), placeable objects (*bestuhlen* 'provide with chairs', *beschildern* 'signpost'), substances (*bewässern* 'irrigate', *beschmutzen* 'pollute'), or abstract concepts (*bemitleiden* 'pity', *bespaßen* 'entertain'). In the latter case, the transfer of energy along the *be-* paths takes place in the psychological world. As far as verbs like *beauskunften* 'provide information', *begutachten* 'review', or *beweihräuchern* 'adulate' are concerned, the semantic criterion of 'sustained activity' is activated. In examples like these,

be- also signals that an accusative LANDMARK is provided with "more extensive and adequate attention" (Dewell 2015: 62).

If the prefix *ent-* operates on events which are analysable in terms of the metonymic relation LOCATUM FOR CAUSED MOTION, it induces a privative or reversative reading. Although the boundaries between privative and reversative readings are not always clear cut, denominal verbs like *entrinden* 'bark' or *enthaaren* 'depilate' suggest that a privative reading is typically (though not necessarily) activated if the Locatum is in a PART-WHOLE relation with the entity from which it is removed (cf. Baeskow 2006). In their reversative reading, *ent-* verbs signal the undoing of a prior process denoted by or associated with the base – as illustrated in (5a) and (5b) for *beschottern* and *entschottern*. However, since privative and reversative readings are closely related (cf. Dewell 2015: 114–115), *ent-* verbs often unify both readings in that they denote not only a LANDMARK'S deprival of something ('privative'), but also the reversal of a prior process ('reversative'). This observation also holds for denominal verbs like *entwaffnen* 'disarm', *entkorken* 'uncork', *entkleiden* 'undress', *entgiften* 'detoxify', etc.[24] Consider for example the following sentence from the Internet:

(6) So wurden schon Reichsbürger wieder *entwaffnet*: „Wir haben zwei Widerrufe von Waffenerlaubnissen aufgrund dieser Basis und ein derzeit laufendes Widerrufsverfahren."
(merkur.de)
'Thus, Reich citizens have already been disarmed again: "There are two revocations of firearms permits on this basis and one revocation procedure that is currently underway."'

In this context, the verb *entwaffnen* conveys a privative reading according to which the referents of *Reichsbürger* were deprived of their arms. At the same time, the context reveals that firearm permits had previously enabled these people to arm (*bewaffnen*) themselves, and it is precisely this process which is now reversed by the new regulation. Thus, *entwaffnen* also activates a reversative reading. As observed already by Kastovsky (1996: 206), the interpretation of verbs as reversative, locative, or ablative on the one hand and ornative/privative on the other is basically a matter of perspective.

While *be-* in its applicative reading productively modifies denominal verbs that follow the metonymic pattern LOCATUM FOR CAUSED MOTION, the polysemous prefix *ver-* does so to a lesser extent. As outlined in section 3.2.2, this prefix profiles a setting in which a Proto-Patient (or FIGURE) loses its original status in that it becomes unrecognizable, obscure, hidden, etc. or disappears. Given the semantics of the prefix thus depicted, it is not surprising that a number of base nouns denote (chemical) substances which have the potential to alter the state of the entities they are caused to get in contact with, e. g. *vergolden* 'gild', *versilbern* 'silver', *verzinken* 'zinc', *vernickeln* 'nickel-plate', *vergiften* 'poison', *verwässern* 'dilute'. As far as the verb *verwässern* is concerned, the synoptic construal of the event denoted by the simplex verb *wässern* induces a shift of attention from the salient 'water' participant and its effect on a LANDMARK (e. g. *die Blumen* 'the flowers') to a more global setting in which a substance loses its original physical quality. If a substance such as milk, a soup, or a sauce is 'verwässert', it is caused to

[24] As far as *ent-* verbs with an intensive reading (e. g. *entfliehen* 'escape', *entweichen* 'leak', *enteilen* 'flee, slip away') or an inchoative reading (e. g. *entflammen* 'catch fire', *entschlafen* 'pass away', *entspringen* 'spring from') are concerned, the focus of attention is on the moment of separation (cf. Dewell 2015: 111).

become too thin because too much water has been applied to it. Significantly, the synoptic construal of events also accounts for metaphorical extensions of verb meanings. For example, a situation in which a substance is caused to become too thin due to the excessive addition of water is readily mapped onto a situation in which a theory, a text, an argument, etc. is flawed and hence reduced in quality, e. g. *Man versuchte, seine Theorie zu verwässern* 'They tried to weaken his theory' (DWDS).

While *be-* and *ver-* partially overlap with respect to applicative locatum verbs, the prefix *ver-* productively operates on verbs following the metonymic relation GOAL 'final state' FOR MOTION, which is not available for *be-*, e. g. *verschimmeln* 'mould', *verrosten* 'rust, erode', *verkrusten* 'crust'. Again, the focus of attention is on a synoptic setting in which a FIGURE undergoes a definite change of state. However, since this physical transformation is not caused by an Agent, but takes place in the material world in the sense of Radden/Dirven (2007), this participant surfaces as the subject in the syntax, e. g. *Damit das Haar nicht verfilzt, sollte man es gut durchkämmen* 'To prevent the hair from matting, comb it well.' Given the cognitive approach adopted in this study, the contrast between verbs like *schimmeln* vs. *verschimmeln*, *rosten* vs. *verrosten*, or *dampfen* 'steam' vs. *verdampfen* 'evaporate' is a matter of perspective, i. e. 'sequential' (tracing an entity's change of state) vs. 'synoptic' (focusing on the setting which loses its FIGURE). In a more figurative sense, the prefix's tendency to profile the moment when an entity loses its original status also renders it suitable to indicate that an individual loses its identity or social status, e. g. *vertrotteln* 'get senile', *verbauern* (< *Bauer* 'peasant') 'become countrified', *verwaisen* 'become an orphan', *verwitwen* 'become a widow'. Note that although *verwaisen* and *verwitwen* predominantly occur as adjectival participles (*verwitwet*, *verwaist*), occurrences of the underlying verbs *verwitwen* and *verwaisen* are attested, e. g.

(7) a. Auch wenn Frauen *verwitwen*, ist es schwerer für sie, als für verwitwete Männer, noch mal ein neues Glück zu finden.
(domradio.de)
'Likewise, when women become widowed it is more difficult for them than for widowed men to find a new happiness again.'

b. Städte *vergreisen*, Dörfer *verwaisen*. Der demographische Wandel trifft Städte und Gemeinden mit voller Wucht.[25]
(deutschlandfunk.de)
'Cities are aging, villages become orphaned. Demographic change is hitting cities and local communities with full force.'

Ver- verbs following the metonymic relation GOAL 'final state' FOR CAUSED MOTION typically refer to events in which the transformation of a FIGURE in a setting is caused by an Agent (e. g. *verschrotten* 'scrap', *vertonen* 'set to music'). Thus, these verbs are inherently transitive. Causative denominal *ver-* verbs formed from human roles are rare. While *versklaven* 'enslave' and *verhexen* 'bewitch' are conventionalized, a more recent formation listed in the DWDS is *verpartnern*, which is restricted to the context of same-gender civil unions. Two further examples found in the literature are *verknechten* (< *Knecht* 'servant, menial, farm hand'), which semantically corresponds with *versklaven*, and *verpreußen* 'make Prussian'. Individuals thus

[25] In (7b), the concept CITY metonymically represents the cities' ageing inhabitants, and the image of children becoming orphans is metaphorically transferred to villages that are abandoned by their inhabitants.

affected are caused to lose their independence, which is in line with the semantics of the prefix *ver-*.

A further prefix that operates on a small subpattern of the metonymic relation GOAL FOR (CAUSED) MOTION is *zer-*, which according to Dewell (2015: 165–169) signals that an entity loses its internal structure, so that it becomes unrecognizable. In this case, the Goal consists of scattered particles, e. g. *zerkrümeln*, *zerbröseln* 'crumble to pieces', *zersplittern* 'splinter to pieces'. Once again, doublets like *krümeln* vs. *zerkrümeln*, *bröseln* vs. *zerbröseln*, or *splittern* vs. *zersplittern* show that the events unfold from the perspective of the salient base-noun participant in the case of the non-derived denominal verbs, whereas the prefix verbs prompt a synoptic construal. Specifically, the prefix *zer-* focuses on the moment of disintegration in a setting while deprofiling the Goal which motivates the sequential construal. Additionally, the semantics of the prefix *zer-* evokes an impression of destruction (cf. Habermann 2015: 1806), which imposes a negative connotation on verbs displaying this prefix. This semantic niche is also occupied by deverbal *zer-* verbs in their resultative reading, e. g. *zerdrücken* 'crush', *zerreden* 'talk down', *zerbeißen* 'bite to pieces'.

If a synoptic setting is created for the restricted set of verbs whose underlying metonymic relation is PROTO-AGENT FOR ACTION, the prefix *be-* signals that the Proto-Agent is strongly focussed on the Proto-Patient or pays special attention to this participant – either in a positive or in a negative sense, e. g. *jemanden bemuttern* 'mother someone', *jemanden bewirten* 'host someone', *jemanden bespitzeln* 'spy on someone', *jemanden bevormunden* 'patronize someone'. By contrast, the prefix *er-* conveys the semantic nuance of 'attainment'. Consider for example the pair *schreinern* 'do carpentry' vs. *erschreinern* 'obtain by doing carpentry' discussed by Stiebels (1998: 285f.), to which we may add *gaunern* 'scam' vs. *ergaunern* 'obtain by scamming' and *schneidern* 'tailor' vs. *erschneidern* 'obtain by tailoring'. While the unprefixed members of these pairs place the focus on the Proto-Agent acting as a carpenter, a crook, or a tailor, the *er-* variants profile the moment of achievement, i. e. the moment when the Proto-Agent attains his or her goal. According to Dewell (2015: 132), *er-* verbs imply "a gradually extending durative run-up process as part of their meaning." However, this run-up process, which anticipates the achievement, is backgrounded, whereas the eventual arrival of the process at its goal space is being profiled by *er-*. Note that the backgrounded run-up process precisely corresponds with the events expressed by the unprefixed verbs *schreinern*, *gaunern*, and *schneidern*. While these sequentially interpretable events are the result of event-schema metonymy (PROTO-AGENT FOR ACTION), the prefix *er-* overtly signals the moment of attainment, and the additional argument for the obtained entity – which may be either concrete (8a) or abstract (8b) – is provided by the action schema.

(8) a. Mit ihrer Masche *ergaunerten* die Betrüger Waren im Wert von mindestens 10 Millionen Euro von Online-Versandhändlern in ganz Europa.

(German Web 2020)

'With their scam, the fraudsters scammed goods worth at least 10 million euros from online mail order companies all over Europe.'

b. Im Tageszentrum Winarskystraße […] hat sie sich längst den Ruf einer Modeikone *erschneidert*.

(pressreader.com)

> ‘At the Winarskystraße Day Center [...] she has long since earned herself the reputation of a fashion icon.’

However, since agent verbs are limited anyway for reasons discussed in section 3.1.6, the small inventory of prefixed denominal agent verbs, which also includes a single *ver-* verb (*verarzten* ‘give someone medical care’), cannot be expected to undergo significant expansion. Note that the ‘attainment’ reading of *er-* also renders this prefix compatible with the metonymic pattern MEANS FOR ACTION, e. g. *ergoogeln*, *erwürfeln*, *errudern*, *ersegeln*. What is being profiled again is the moment when a Proto-Agent reaches a goal – in this case by means of googling, dicing, rowing, or sailing.

Interestingly, the inseparable prefixes do not productively operate on the metonymic pattern INSTRUMENT FOR ACTION either although instrument verbs form the largest class of non-derived denominal verbs not only in English, but also in German (cf. section 3.1.1). One possible explanation for this state of affairs is that activities expressed by instrument verbs are less compatible with a synoptic construal if they lack a noteworthy phase or moment of change which might be profiled by an inseparable prefix. As shown in the appendix, instrument verbs are only sporadically prefixed by *be-*, *er-*, *zer-*, and *ver-*. The prefix *be-* (e. g. *behämmern* ‘*be*-hammer’, *beharken* ‘*be*-rake’) signals temporally sustained and focussed activities. As far as *er-* is concerned, only two instrument verbs were found in the literature, namely *eräugen* ‘spot’ and *erdolchen* ‘stab to death’. Both verbs activate the ‘attainment’ reading of their prefix. If instrument verbs are prefixed by *zer-*, the impression of complete destruction is being conveyed (e. g. *zerbeilen* ‘smash with an axe’, *zerhämmern* ‘smash with a hammer’).

If an activity is performed with a tool which causes an entity to lose its independence, the prefix *ver-* is the means of choice, e. g. *verankern* ‘anchor’, *verdübeln* ‘dowel’, *verschrauben* ‘screw’. While causative verbs like these unambiguously follow the metonymic pattern INSTRUMENT FOR ACTION, verbs like *verkeilen* ‘wedge’, *verketten* ‘link, chain’, or *verklammern* ‘clamp’ are also attested as reflexive verbs (*sich verkeilen*, *sich verketten*, *sich verklammern*). In this usage, they rather pattern with inchoative verbs like *verdunsten* ‘evaporate’ or *vergreisen* ‘age’ (GOAL FOR MOTION), with the difference that the Goal is a final shape. Following Belz (1997), Dewell (2015: 206) assumes that verbs of this type denote events in which entities which are of the same kind are joined and thus lose their separate identity to form a unified whole. The following examples from the DWDS illustrate this point.

(9) a. Diese Moleküle haben die Tendenz, *sich* zu höheren Einheiten zu *verketten*.
‘These molecules have a tendency to chain themselves into higher units.’
b. Mitunter verklemmen und *verkeilen sich* die Geweihe kämpfender Hirsche.
‘Sometimes the antlers of fighting stags get jammed and wedged.’
c. Die beiden Kinder bekamen Angst, und ihre Hände *verklammerten sich*.
‘The two children became frightened and their hands clasped together.’

While a relatively small set of instrument verbs allows for a synoptic event construal, verbs referring to the manner of action or manner of motion definitely prefer a sequential interpretation. Thus, they either occur as unprefixed verbs or in the context of particles (i. e. separable prefixes), which according to Dewell (2011, 2015: 22) trigger a sequential reading. For example, one particle which frequently combines with manner verbs is *herum-*, which in this context

signals atelic, non-goal-directed activities, e. g. *herumlümmeln* ‘loll about’, *herumgeistern* ‘spook’, *herumstromern* ‘roam’, *herumstümpern* ‘dabble’, *herumschlawinern* ‘gad about’.[26] The semantic niche filled by *herum-* also manifests itself in the pair *jemanden verarzten* vs. *an etwas/jemandem herumdoktern*. While the agent verb *verarzten* denotes the activity of giving someone medical care (though not necessarily in a professional sense), *herumdoktern* ‘to tamper with something/someone’ conveys the impression of dilettantism.

In this context, it is interesting to note that in German youth language, verbs of dancing borrowed from English quite systematically combine with the particle *ab-* (e. g. *abdancen*, *abrocken*, *absteppen*, *abgrooven*) which in this context merely fulfils an intensifying function (cf. Androutsopoulos 1998: 95) and modifies the manner of motion. Since the participants involved in the events denoted by the unprefixed verbs are constantly in motion and remain unaffected by any external force, these events, too, elude a synoptic construal.

The cases of prefix conversion discussed in this section confirm the hypothesis that the compatibility of verbalized nouns with the synoptic perspective and hence with inseparable prefixes depends on their underlying metonymic relations. The data show that a synoptic construal works best for event types that follow the metonymic relations LOCATUM FOR CAUSED MOTION (e. g. *besohlen* ‘sole’, *entgiften* ‘detoxify’, *verchromen* ‘chrome’), GOAL ‘final state’ FOR MOTION (e. g. *verschlammen* ‘silt’), and GOAL ‘final state’ FOR CAUSED MOTION (e. g. *vertonen* ‘set to music’, *zertrümmern* ‘smash’). Obviously, the verbalized nouns occurring in the context of these prefixes are well suited for the synoptic construal because the referents of their base nouns have a direct and perceivable impact on other participants in the setting. Due to competition with simplex verbs, the productivity of the pattern PROTO-AGENT FOR ACTION is limited independently of a sequential or synoptic construal. Nevertheless, a handful of prefix verbs which are based on this pattern are attested. While instrument verbs prefer a sequential construal, manner-of-action and manner-of-motion verbs seem to be incompatible with a synoptic construal. If at all, verbs of the latter types rather combine with particles like *herum-* or *ab-*. The activities denoted by manner-of-action/motion verbs and by many instrument verbs lack a noteworthy phase or moment of change which might be profiled by an inseparable prefix. The data discussed in this section also revealed that, despite a certain degree of overlap, the semantics of the five inseparable prefixes determines their distribution over the metonymic patterns.

5 Conclusion and outlook

In this article it was shown that the long-standing problem of apparently left-headed prefix verbs in German (*besohlen* ‘sole’, *entschottern* ‘clear of ballast’, *verschimmeln* ‘become mouldy’, etc.) can be solved if we adopt a cognitive approach according to which prefixation interacts with event-schema metonymy – a purely conceptual process which renders material concepts interpretable as events. Since metonymy applies inside derivation, the question of whether or not the verbalized nouns are attested (e. g. *splittern* ‘splinter’), obsolete (e. g. †*sohlen* ‘sole’), or non-existing (e. g. **kernen*) is irrelevant, and an overgeneration of hypothetical verbs is avoided.

[26] A more colloquial variant of the prefix *herum-* is *rum-* (*rumlümmeln*, *rumdoktern*, etc.).

So far, event-schema metonymy had been restricted to English noun-verb conversion (cf. e. g. Kövecses/Radden 1998; Dirven 1999). If this approach is applied to German prefix verbs displaying non-verbal bases, the problem of assigning verbal or verbalizing properties to the inseparable prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-*, which have their origin in prepositions or local adverbs, does not arise. The present study has shown that there is diachronic and synchronic support for the hypothesis that German inseparable prefixes operate on metonymically construed events. From a diachronic perspective, it is important that conversion preceded prefixation in the history of the German language (cf. Eschenlohr 1999) and that prefix verbs have coexisted with unprefixed verbs at least since the Middle High German period. Even if many unprefixed verbs have fallen out of use (e. g. †*sohlen* 'sole' vs. *besohlen*, †*golden* 'gild' vs. *vergolden*, †*ruhigen* 'calm' vs. *beruhigen*), their former existence reveals that the non-overt conceptualization of material concepts (or qualities) as events has always been an option not only in English, but also in German. Synchronic support for the proposal made in this study first of all comes from the observation that conversion is still active in German – though not as productive as in English. Contrastive analyses of noun-verb conversion in both languages were performed to illustrate this point. Furthermore, German prefix verbs still compete with unprefixed verbs in Modern High German. A case study performed for the verbal cluster that developed around the concept SCHOTTER ('gravel', 'ballast') has shown that we are not forced to assign verbal properties to the inseparable prefixes or to assume that these prefixes create verbal argument structures, which under the present approach are provided by a small set of event schemata in the sense of Dirven (1999). The main function of the inseparable prefixes is to impose a synoptic and hence more holistic perspective (cf. Dewell 2015) on the metonymically verbalized nouns, which is more in line with their origin as prepositions or adverbs. Thus, the focus of attention is no longer on the base-noun participant and the role it plays in the event (this sequential construal is backgrounded in the context of the prefixes). Instead, the focus is on paths located relative to a LANDMARK (*be-*, *ent-*), moments of attainment, change, or separation (*er-*, *ver-*, *zer-*), and factors related to *Aktionsart* (e. g. the intensifying function of *be-*). Furthermore, it was shown that a successful shift of perspective from sequential to synoptic depends on the metonymic relations underlying the verbalized nouns and that the distribution of the five inseparable prefixes over these relations is semantically determined.

A final point to be raised here concerns the limits and prospects of event-schema metonymy in conversion and beyond. Although this article cannot provide an in-depth discussion of this point, it should be noted that there are two sets of data involving inseparable prefixes which seem to resist a metonymic analysis. The first set comprises adjectival participles like *bebrillt* 'bespectacled', *bemützt* 'wearing a cap', *behandschuht* 'gloved', *bemoost* 'mossy', *behaart* 'hairy', *bepelzt* 'furred', etc. On the one hand, we might argue that the path from a source of energy to a LANDMARK is still implied in participles like *bebrillt*, *bemützt*, or *behandschuht* because there must have been activities of causing the FIGURE to come into contact with the LANDMARK. On the other hand, this argument does not hold for participles like *bemoost* 'mossy', *behaart* 'hairy', *bepelzt* 'furred', *bebuscht* 'bush-covered', or *beschilft* 'reeded' because these participles denote internally caused relations. *Be-* participles rather seem to convey a snapshot of a variety of settings, with the focus being on the contact between a FIGURE and a LANDMARK. Moreover, since the holistic aspect typically associated with *be-* is preserved in participles of the type *bemoost*, *beschilft*, *bebuscht*, *bepelzt* (i. e. a LANDMARK is extensively

covered with moss, reeds, bushes, fur, etc.), it is well conceivable that the meaning activated by *be-* in these forms is a relic of its original spatial meaning 'um…herum' ('around'); cf. section 3.2.1. In participles of the type *bebrillt*, it might be the meaning 'bei' ('at', 'near') of the prefix's predecessor *bí* which is still implied.

A further set of problematic data comprises complex verbs like *verstaatlichen* 'nationalize', *versinnbildlichen* 'symbolize', *veranschaulichen* 'illustrate'; *begradigen* 'straighten', *belobigen* 'praise', *berücksichtigen* 'take into account', *entmutigen* 'discourage', or *entmenschlichen* 'dehumanize', which combine prefixation and suffixation. A metonymic reinterpretation of these verbs' bases as events is implausible not only because of their morphological complexity, but also because none of them are attested as a verb (e. g. **staatlichen*, **lobigen*, **menschlichen*).[27] This is not surprising because German event-schema metonymy proceeds from basic-level concepts which are readily interpreted as events. Quite a few complex bases occurring especially in the context of *be-* are not even attested as adjectives (e. g. **gradig*, **lobig*, **rücksichtig*). As far as complex verbs like *begradigen*, *belobigen*, or *berücksichtigen* are concerned, it might be argued that these were formed by analogy with verbs whose bases do exist as adjectives, such as *benötigen* (< *nötig* 'necessary'), *belästigen* (< *lästig* 'irksome'), *befleißigen* (< *fleißig* 'busy') or *belustigen* (< *lustig* 'amusing'). A further problem which cannot be solved conceptually is that adjectives ending in *-ig* and *-lich* behave differently with respect to verbalization (cf. Eschenlohr 1999: 221–230 for a detailed discussion).

Despite the obvious limits sketched above, there are domains of word-formation beyond conversion and prefix conversion in which metonymy (and metaphor) play a role. To begin with, there is some consensus in the literature that metonymy is the key to the interpretation of exocentric compounds such as *pickpocket*, *egg head*, or *birdbrain* (Jespersen 1942: 149; Booij 2002: 143; Benczes 2015; Bauer 2016). As far as the well-known polysemy of *er-* derivatives is concerned, Ryder (1999) and Panther/Thornburg (2002) ascribe a prototypically agentive reading to the suffix and assume that other readings (e. g. *computer*, *retriever*, *creeper, 49-er*, *yawner*) are metonymically (or metaphorically) related to this sense. Significantly, Panther/Thornburg (2002) also allow metonymy (and metaphor) to operate on the bases of *-er* derivatives. As far as non-deverbal *-er* derivatives like *Wall Streeter* 'person professionally employed on Wall Street' or *hoofer* 'professional (vaudeville/chorus) dancer' are concerned, they assume that the denotatum of the base functions as a reference point from which the activity performed by the Agent (i. e. by the referent of the *-er* derivative) can be metonymically (or metaphorically) inferred. Metonymy also plays a role in grammaticalization processes. For example, Koch (2012: 295f.) assumes with Mutz (2000) and Rainer (2005) that the diachronic change of a free morpheme into an affix is an instance of metonymic reanalysis. The Modern English suffix *-hood* < OE *hād* "state, rank, order, condition, character" illustrates this point. And yet, the question as to the overall impact of metonymy on word-formation is far from being settled even in Cognitive Linguistics (cf. Radden/Kövecses 2007; Schönefeld 2005; Janda 2011, 2014; Brdar/Brdar-Szabó 2014; Brdar 2017; or Bauer 2018a for controversial discussions), and further investigation as to the precise nature of this synthesis is required.

[27] For a similar view, cf. Olsen (1990: 41) and Eschenlohr (1999: 107).

References

Ackerman, Farrell/Webelhuth, Gert (1998): *A Theory of Predicates*. Stanford: CSLI Publications.

Androutsopoulos, Jannis (1998): *Deutsche Jugendsprache. Untersuchungen zu ihren Strukturen und Funktionen*. Frankfurt am Main: Lang.

Aronoff, Mark (1980): "Contextuals". *Language* 56/4: 744–758.

Baeskow, Heike (2006): "A revival of Romance roots". *Morphology* 16: 3–36.

Baeskow, Heike (2017): "#Virtual Lexicality. The semantics of innovative prefixed verbal anglicisms in German". *Word Structure* 10/2: 173–203.

Baeskow, Heike (2018): "-*Drink* or -*trunk*, that is the question: The distribution of selected anglicisms and German near-synonyms in compounding". *Studia Linguistica* 72/3: 725–768.

Baeskow, Heike (2020): "Event-schema metonymy as a relation of prominence". In: Körtvélyessy, Livia/Štekauer, Pavol (eds.): *Complex Words. Advances in morphology*. Cambridge, Cambridge University Press: 82–99.

Baeskow, Heike (2021): "Noun-verb conversion as a metonymic metamorphosis." *SKASE Journal of Theoretical Linguistics* 18/1: 2–34.

Baeskow, Heike (2022a): "Experiencing the conceptual wealth of non-derived denominal verbs: A multi-level, simulation-based approach." *Studia Linguistica* 76/2: 591–625. doi: 10.1111/stul.12189.

Baeskow, Heike (2022b): "Noun-verb conversion between the poles of predictability and idiosyncrasy: How do denominal verbs build their argument structures?" *Zeitschrift für Wortbildung / Journal of Word Formation* 6/2: 6–46. doi:10.3726/zwjw.2022.02.01.

Balmer, Thomas T./Brennenstuhl, Waltraud (1986): *Deutsche Verben. Eine sprachanalytische Untersuchung des deutschen Verbwortschatzes.* Tübinen: Narr.

Barsalou, Lawrence W. (2003): "Situated simulation in the human conceptual system". *Language and Cognitive Processes* 18/5–6: 513–562.

Barsalou, Lawrence W. (2009): "Simulation, situated conceptualization, and prediction". *Philosophical Transactions of the Royal Society of London*. *Series B, biological sciences* 364: 1281–1289. doi:10.1098/rstb.2008.0319.

Barsalou, Lawrence W. (2020): "Challenges and opportunities for grounding cognition". *Journal of Cognition* 3/1: 31, 1–24. doi: 10.5334/joc.116.

Bauer, Laurie (1983): *English Word-Formation*. Cambridge: Cambridge University Press.

Bauer, Laurie (2016): "Re-evaluating exocentricity in word-formation". In: Siddiqui, Daniel/ Harley, Heidi (eds.): *Morphological Metatheory*. Amsterdam/Philadelphia, Benjamins: 461–477.

Bauer, Laurie (2018a): "Metonymy and the semantics of word-formation". In: Koutsoukos, Nikos/Audring, Jenny/Masini, Francesca (eds.): *Morphological Variation: Synchrony and Diachrony. Online Proceedings of the Eleventh Mediterranean Morphology Meeting (MMM11) Nicosia, Cyprus, 22–25 June 2017.* Louvain/Leiden/Bologna, Université Catholique de Louvain/Leiden University/University of Bologna: 1–13.

Bauer, Laurie (2018b): "Conversion as metonymy". *Word Structure* 11/2: 175–184. doi: 10.3366/word.2018.0123.

Bauer, Laurie/Lieber, Rochelle/Plag, Ingo (2013): *The Oxford Reference Guide to English Morphology*. Oxford: Oxford University Press.

Belz, Julie Anne (1997): *Mind, Metaphor, and Prefix: Evidence for prototype category structure in NHG ver-*. Ph.D. dissertation, University of California, Berkeley.

Benczes, Rita (2015): "Are exocentric compounds really exocentric?". *SKASE Journal of Theoretical Linguistics* 12/3: 54–73.

Bergen, Benjamin (2012): *Louder than Words. The new science of how the mind makes meaning*. New York: Basic Books.

Bolinger, Dwight (1971): *The Phrasal Verb in English*. Cambridge, MA: Harvard University Press.

Booij, Geert (2002): *The Morphology of Dutch*. Oxford: Oxford University Press.

Brdar, Mario/Brdar-Szabó, Rita (2014): "Where does metonymy begin? Some comments on Janda (2011)". *Cognitive Linguistics* 25/2: 313–340.

Brdar, Mario (2017): *Metonymy and Word-Formation: Their interactions and complementation*. Cambridge: Cambridge Scholars Publishing.

Brinton, Laurel J. (1988): *The Development of English Aspectual Systems*. Cambridge: Cambridge University Press.

Burgschmidt, Ernst (1975): *System, Norm und Produktivität in der Wortbildung*. Bd. 3. Erlangen: Universitätsverlag.

Cetnarowska, Bozena (2011): "Conversion as metonymy and the question of recursiveness". In: Bierwiaczonek, Bogusław/Cetnarowska, Bozena/Turula, Anna (eds.): *Syntax in Cognitive Grammar*. Częstochowa, Wydawnictwo Wyższej Szkoły Lingwistycznej: 13–26.

Clark, Eve/Clark, Herbert (1979): "When nouns surface as verbs". *Language* 55: 767–811.

davenportstation.org.uk: davenportstation.org.uk/charlestown.html [05.04.2023].

Deutschbein, Max (1939): "Aspekte und Aktionsarten im Neuenglischen". *Neuphilologische Mitteilungen* 10: 139–148; 190–201.

deutschlandfunk.de: deutschlandfunk.de/staedte-vergreisen-doerfer-verwaisen-100.html [05.03.2023]

Dewell, Robert B. (2011): *The Meaning of Particle/Prefix Constructions in German*. Amsterdam/Philadelphia: Benjamins. doi: 10.1075/hcp.34.

Dewell, Robert B. (2015): *The Semantics of German Verb Prefixes*. Amsterdam/Philadelphia: Benjamins. doi: 10.1075/hcp.49

Dirven, René (1999): "Conversion as a conceptual metonymy of event schemata". In: Panther, Klaus-Uwe/Radden, Günter (eds.): *Metonymy in Language and Thought*. Amsterdam/Philadelphia, Benjamins: 275–287.

domradio.de: domradio.de/suche?searchterm=ungewollt-allein [05.04.2023]

Donalies, Elke (2005): *Die Wortbildung des Deutschen. Ein Überblick*. Tübingen: Narr.

Dowty, David R. (1991): "Thematic proto-roles and argument selection". *Language* 67: 547–619.

Eisenberg, Peter (2012): *Das Fremdwort im Deutschen*. Berlin/New York: de Gruyter.

Eisenberg, Peter (2020): *Grundriss der deutschen Grammatik. Das Wort*. 5. Auflage. Berlin: Springer-Verlag. doi: 10.1007/978-3-476-05096-0.

Eschenlohr, Stefanie (1999): *Vom Nomen zum Verb: Konversion, Präfigierung und Rückbildung im Deutschen*. Hildesheim: Olms.

Fabrizio, Claudia (2013): "The meaning of a noun converted into a verb. A semantic exploration on Italian". *Rivista di Linguistica* 25/2: 175–219.

Fillmore, Charles (1968): “The case for case”. In: Bach, Emmon/Harms, Robert Thomas/ McCawley, James (eds.): *Universals of Linguistic Theory*. New York, Holt, Rinehart and Winston: 1–88.

Fleischer, Wolfgang/Barz, Irmhild (1992): *Wortbildung der deutschen Gegenwartssprache.* Tübingen: Niemeyer.

Fleischer, Wolfgang/Barz, Irmhild (2012): *Wortbildung der deutschen Gegenwartssprache*. 4., völlig neu bearbeitete Auflage. Berlin/Boston: de Gruyter.

fremdwort.de*:* fremdwort.de/suchen/bedeutung/merkeln [05.04.2023]

Fritz, Matthias (2011): “Verbalkomposition oder Präfixverb?” In: Kauffer, Maurice/Métrich, René (eds.): *Verbale Wortbildung im Spannungsfeld zwischen Wortsemantik, Syntax und Rechtschreibung*. Tübingen, Stauffenburg: 37–48.

Gallese, Vittorio/Lakoff, George (2005): “The brain’s concepts: The role of the sensory-motor system in conceptual knowledge”. *Cognitive Neuropsychology* 22(3/4): 455–479. doi:10.1080/02643290442000310.

Grady, Joseph (1997): *Foundations of Meaning. Primary metaphors and primary scenes*. Ph.D. Dissertation, University of Berkeley, California.

Habermann, Mechthild (2015): “Grammaticalization in German word-formation”. In: Müller, Peter O. et al. (eds.): *Word-Formation. An international handbook of the languages of Europe*. Volume 3. Berlin/Boston, de Gruyter: 1794–1810. (= *Handbücher zur Sprach- und Kommunikationswissenschaft* 40.3)

Henzen, Walter (1957): *Deutsche Wortbildung*. Tübingen: Niemeyer.

Heusinger, Klaus von/Schwarze, Christoph (2006): “Underspecification in the semantics of word formation: the case of denominal verbs of removal in Italian”. *Linguistics* 44/6: 1165–1194. doi: 10.1515/LING.2006.038.

Himmelmann, Nikolaus P./Primus, Beatrice (2015): “Prominence beyond prosody. A first approximation”. In: De Dominicis, Amadeo (ed.): *pS-ProminenceS: Prominences in linguistics. Proceedings of the pS-prominenceS International Conference, University of Tuscia*. Viterbo, DISUCOM Press: 38–58.

Janda, Laura A. (2011): “Metonymy in word-formation”. *Cognitive Linguistics* 22/2: 359–392.

Janda, Laura A. (2014): “Metonymy and word-formation revisited”. *Cognitive Linguistics* 25/2: 341–349.

Jespersen, Otto (1942): *A Modern English Grammar on Historical Principles*. *Part VI: Morphology*. Reprinted 1974. London: George Allen & Unwin Ltd.

Karius, Ilse (1985): *Die Ableitung der denominalen Verben mit Nullsuffigierung im Englischen*. Tübingen: Niemeyer.

Kastovsky, Dieter (1996): “The representation of space in English derivational morphology”. In: Pütz, Martin/Dirven, René (eds.): *The Construal of Space in Language and Thought*. Berlin/Boston, de Gruyter Mouton: 197–208.

Kiparsky, Paul (1997): “Remarks on denominal verbs”. In: Alsina, Alex/Bresnan, Joan/Sells, Peter (eds.): *Complex Predicates*. Stanford, CSLI Publications: 473–499.

knorr-transporte.de: knorr-transporte.de/portfolio/neue-fahrzeuge-3 [09.04.2023].

Koch, Peter (1999): “Frame and contiguity”. In: Panther, Klaus-Uwe/Radden, Günter (eds.): *Metonymy in Language and Thought*. Amsterdam/Philadelphia, Benjamins: 139–167.

Koch, Peter (2012): “The pervasiveness of contiguity and metonymy in semantic change”. In: Allan, Kathryn/Robinson, Justyna A. (eds.): *Current Methods in Historical Semantics*. Berlin/Boston, de Gruyter: 259–311.

König, Ekkehard/Gast, Volker (2007): *Understanding English-German Contrasts*. Berlin: Schmidt Verlag.

Kövecses, Zoltán/Radden, Günter (1998): “Metonymy: Developing a cognitive linguistics view”. *Cognitive Linguistics* 9: 37–77.

Lakoff, George (1987): *Women, Fire, and Dangerous Things. What categories reveal about the mind*. Chicago/London: The University of Chicago Press.

Lakoff, George/Johnson, Mark (1980): *Metaphors We Live by*. Chicago/London: The University of Chicago Press.

Langacker, Ronald W. (1987): *Foundations of Cognitive Grammar. Volume 1. Theoretical prerequisites*. Stanford: Stanford University Press.

Langacker, Ronald W. (1993): “Reference-point constructions”. *Cognitive Linguistics* 4: 1–38.

Levin, Beth/Rappaport Hovav, Malka (1994): “Causative verbs in English”. In: Gleitman, Lila/Landau, Barbara (eds.): *The Acquisition of the Lexicon*. Cambridge, MA, MIT Press: 35–77.

Lieber, Rochelle (1981): *On the Organization of the Lexicon*. Bloomington: Indiana University Linguistics Club (IULC).

Lieber, Rochelle (2004): *Morphology and Lexical Semantics*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511486296.

Marchand, Hans (1963): “Die Ableitung desubstantivischer Verben mit Nullmorphem im Französischen und die entsprechenden Verhältnisse im Englischen und Deutschen”. *Zeitschrift für französische Sprache und Literatur* 73, 3/4: 164–179.

Marchand, Hans (1964): “Die Ableitung desubstantivischer Verben mit Nullmorphem im Englischen, Französischen und Deutschen”. *Die Neueren Sprachen* 10: 105–118.

Marchand, Hans (1969): *The Categories and Types of Present-Day English Word-Formation. A synchronic-diachronic approach*. München: C. H. Beck’sche Verlagsbuchhandlung.

Mutz, Katrin (2000). *Die italienischen Modifikationssuffixe. Synchronie und Diachronie*. Frankfurt am Main: Lang.

merkur.de: merkur.de/lokales/wuermtal/immer-mehr-wuermtaler-bewaffnen-sich-12818100.html [05.04.2023]

Neef, Martin (2005): “On some alleged constraints on conversion”. In: Bauer, Laurie/Valera, Salvador (eds.): *Approaches to Conversion/Zero-Derivation*. Münster etc., Waxman: 103–130.

nzetc.victoria.ac.nz: nzetc.victoria.ac.nz/tm/scholarly/tei-ReiKaOr-t1-g1-t3-body1-d17.html [05.04.2023]

Olsen, Susan (1986): *Wortbildung im Deutschen.* Stuttgart: Kröner Verlag.

Olsen, Susan (1990): “Zur Suffigierung und Präfigierung im verbalen Bereich des Deutschen”. *Papiere zur Linguistik* 42: 31–48.

Olsen, Susan (1996): “Partikelverben im deutsch-englischen Vergleich”. In: Lang, Ewald/Zifonun, Gisela (eds.): *Deutsch – typologisch*. Berlin, de Gruyter: 261–288. (= *Jahrbuch des Instituts für deutsche Sprache* 1995).

Pang, Kam-yiu S. (2010): “Eponymy and life-narratives: The effect of foregrounding on proper nouns”. *Journal of Pragmatics* 42: 1321–1349.

Panther, Klaus-Uwe (2008): “The role of conceptual metonymy in meaning construction”. In: Ruiz de Mendoza Ibáñez, Francisco José/Peña Cervel, Sandra (eds.): *Cognitive Linguistics: Internal dynamics and interdisciplinary interaction*. Berlin/New York, de Gruyter: 353–386. (= *Cognitive Linguistics Research* 32)

Panther, Klaus-Uwe/Thornburg, Linda (2002): “The roles of metaphor and metonymy in English *-er* nominals”. In: Dirven, René/Pörings, Ralf (eds.): *Metaphor and Metonymy in Comparison and Contrast*. Berlin/New York, de Gruyter: 279–319.

pressreader.com: pressreader.com/austria/heute-wien-ausgabe/20211004/281921661211756 [05.04.2023]

Primus, Beatrice (1999): *Cases and Thematic Roles – Ergative, Accusative and Active*. Tübingen: Niemeyer. doi: 10.1515/9783110912463.

Primus, Beatrice (2012): *Semantische Rollen*. Heidelberg: Universitätsverlag Winter.

Radden, Günter/Dirven, René (2007): *Cognitive English Grammar*. Amsterdam/Philadelphia: Benjamins. doi: 10.1075/clip.2.

Radden, Günter/Kövecses, Zoltán (2007): “Towards a theory of metonymy”. In: Evans, Vyvian/Bergen, Benjamin/Zinken, Jörg (eds.): *The Cognitive Linguistics Reader*. London, Equinox: 335–359.

rheinpfalz.de: rheinpfalz.de/lokal/ludwigshafen_artikel,-was-hannah-bolz-in-sachen-natur-alles-vor-hat-arid,5170148.html?reduced=true [05.04.2023].

Rainer, Franz (2005): “Semantic change in word formation”. *Linguistics* 43: 415–441.

Rosch, Eleanor et al. (1976): “Basic objects in natural categories”. *Cognitive Psychology* 8: 382–439.

Ruiz de Mendoza Ibáñez, Francisco José/Pérez Hernández, Lorena (2001): “Metonymy and the grammar. Motivation, constraints and interaction”. *Language & Communication* 21: 321–357.

Ruiz de Mendoza Ibáñez, Francisco José/Pérez Hernández, Lorena (2011): The contemporary theory of metaphor: Myths, developments and challenges. *Metaphor and Symbol* 26: 1–25. doi: 10.1080/10926488.2011.583189.

Ruiz de Mendoza Ibáñez, Francisco José/Galera Masegosa, Alicia (2014): *Cognitive Modeling. A linguistic perspective*. Amsterdam/Philadelphia: Benjamins. doi: 10.1075/hcp.45.

Ryder, Mary Ellen (1999): “Bankers and blue-chippers: an account of *-er* formation in present-day English”. *English Language and Linguistics* 3/2: 269–297.

Scalise, Sergio (1988): “The notion of ‘head’ in morphology”. In: Booij, Geert/Marle van, Jaap (eds.): *Yearbook of Morphology 1988*. Dordrecht, Kluwer Academic Publishers: 229–245.

Schönefeld, Doris (2005): “Zero-derivation – functional change – metonymy”. In: Bauer, Laurie/Valera, Salvador (eds.): *Approaches to Conversion/Zero-Derivation*. Münster etc., Waxmann: 131–159.

Schönefeld, Doris (2018): “Friending someone into submission. Verbal cues for understanding”. *Word Structure* 11/2: 211–237. doi: 10.3366/word.2018.0125.

Selkirk, Elisabeth O. (1982): *The Syntax of Words*. Cambridge, Mass.: MIT Press.

Steffens, Doris/al-Wadi, Doris (2014): *Neuer Wortschatz. Neologismen im Deutschen 2001–2010*. Mannheim: Institut für Deutsche Sprache.

Štekauer, Pavol (1996): *A Theory of Conversion in English*. Frankfurt am Main: Lang.

Štekauer, Pavol (2000): "Beheading the word? Please, stop the execution". *Folia Linguistica* 34 (3/4): 333–355.

Štekauer, Pavol (2005): *Meaning Predictability in Word Formation. Novel, context-free naming units.* Amsterdam/Philadelphia: Benjamins.

Štekauer, Pavol/Díaz-Negrillo, Ana/Valera, Salvador (2011): "Meaning predictability and conversion". *Folia Linguistica* 45/1: 165–198.

Stiebels, Barbara (1998): "Complex denominal verbs in German and the morphology-semantics interface". In: Booij, Geert/Marle van, Jaap (eds.): *Yearbook of Morphology 1997*. Dordrecht, Kluwer Academic Publishers: 265–302.

Talmy, Leonard (2000): *Towards a Cognitive Semantics I. Concept structuring systems*. Cambridge/London: MIT Press.

Traugott, Elizabeth C. (1978): "On the expression of spatio-temporal relations in language". In: Greenberg, Joseph H. (ed.): *Universals of Human Language*. Vol. 3 *Word Structure*. Stanford, CA, Stanford University Press: 369–400.

tip.berlin.de: tip-berlin.de/kultur/ausstellungen/britta-thies-webserie-translantics/ [05.04.2023]

tripadvisor.co.uk: tripadvisor.co.uk/ShowUserReviews-g46693-d458510-r354209239-Portobello-Oakland_New_Jersey.html [05.04.2023].

Vogel, Petra M. (1996): *Wortarten und Wortartenwechsel. Zu Konversion und verwandten Erscheinungen im Deutschen und in anderen Sprachen*. Berlin/New York: de Gruyter.

Williams, Edwin (1981): "On the notions 'lexically related' and 'head of a word'". *Linguistic Inquiry* 12: 245–274.

Wunderlich, Dieter (1987): "An investigation of lexical composition: the case of German *be*-verbs". *Linguistics* 25: 283–331.

Wunderlich, Dieter (1997): "Cause and the structure of verbs". *Linguistic Inquiry* 28: 28–68.

Zifonun, Gisela (1973): *Zur Theorie der Wortbildung am Beispiel deutscher Präfixverben*. München: Hueber Verlag.

Electronic Sources

COSMAS II (*Corpus Search, Management and Analysis System*). ids-mannheim.de/cosmas2/ [01.03.2023].

Davies, Mark (2018–): *The 14 Billion Word iWeb Corpus*. corpus.byu.edu/iWeb/ [01.03. 2023]

DWDS (*Digitales Wörterbuch der deutschen Sprache*). dwds.de/ [21.02.2023].

German Web corpus 2020 (deTenTen20) – 17.5 billion words, genre annotation and topic classification, provided by Sketch Engine. sketchengine.eu [27.02.2023].

Oxford English Dictionary (OED). oed.com [1.03.2023].

Pfeifer, Wolfgang et al. (1993): *Etymologisches Wörterbuch des Deutschen.* dwds.de/d/wb-etymwb [27.02.2023].

Appendix

Metonymic relations operated on by the inseparable prefixes *be-*, *ent-*, *er-*, *ver-*, and *zer-* in German denominal prefix verbs. (Sources: Balmer/Brennenstuhl (1986), Fleischer/Barz (1992), Donalies (2005), Dewell (2015), DWDS, German Web (2020, provided by Sketch Engine).

The prefix *be-*

LOCATUM FOR CAUSED MOTION

beampeln, beamten, beauftragen, beauskunften, bebildern, bebrillen, bebuttern, bedachen, beeiden, beelenden, beerden, befeuern, befirsten, beflaggen, beflecken, beflügeln, begasen, beglücken, beglückwünschen, begrenzen, begrüßen, begutachten, beheimaten, behelmen, beherbergen, bejubeln, bekleiden, bekohlen, bekräften, bekränzen, bekrönen, belichten, belüften, bemänteln, bemausen, bemehlen, bemitleiden, bemustern, bemützen, beneiden, benoten, beölen, bepfeffern, bepflanzen, bepflastern, bepolstern, bepudern, berenten, beringen, besaiten, besalzen, besamen, beschallen, beschichten, beschildern, beschirmen, beschmutzen, beschottern, beschriften, beschuhen, beschulen, beseelen, besiegeln, besohlen, besolden, bespaßen, bespotten, bestäuben, bestempeln, besteuern, bestiefeln, bestrafen, bestücken, bestuhlen, betiteln, beurkunden, bevorraten, bewaffnen, bewalden, bewässern, beweihräuchern, bewurzeln, beziffern, bezuckern, bezuschussen

INSTRUMENT FOR ACTION/MOTION

beäugen, befingern, behämmern, beharken, behobeln, benageln, bepinseln, besägen, besegeln, bespiegeln

PROTO-AGENT FOR ACTION

bemuttern, bespitzeln, bevormunden, bewirten

The prefix *ent-*

LOCATUM FOR CAUSED MOTION

entasten, entbeinen, entblättern, entchloren, entehren, entfesseln, entfärben, entfetten, entflecken, entfreunden, entgeistern, entgiften, enthaaren, enthäuten, enthaupten, enthirnen, enthüllen, entkalken, entkeimen, entkernen, entkleiden, entknoten, entkorken, entkörnen, entkräften, entkrampfen, entlarven, entlasten, entlauben, entlausen, entleiben, entlüften, entmachten, entmenschen, entmisten, entmotten, entnebeln, entölen, entpflichten, entrahmen, entrechten, entriegeln, entrinden, entsalzen, entschlacken, entschlüsseln, entschottern, entschulden, entschuppen, entstäuben, entsteinen, entstielen, entthronen, entvölkern, entwaffnen, entwalden, entwanzen, entwässern, entwerten, entwürden, entwurmen, entwurzeln

The prefix *er-*

PROTO-AGENT FOR ACTION

ergärtnern, ergaunern, erschneidern, erschreinern

MEANS FOR ACTION

ergoogeln, erpaddeln, ersegeln, erwürfeln

GOAL 'final state' FOR (CAUSED) MOTION

ergreisen, sich ermannen

INSTRUMENT FOR ACTION

eräugen, erdolchen

The prefix *ver-*

GOAL 'final state' FOR MOTION

verdampfen, verdrecken, verdunsten, vereisen, vereitern, verenden, verfetten, verfilzen, vergletschern, verharschen, verharzen, verkalken, verkarsten, verklumpen, verknöchern, verknorpeln, verkohlen, verkrusten, vermooren, vermoosen, vernarben, verpilzen, verqualmen, verrosten, verrußen, versanden, verschilfen, verschlacken, verschlammen, verschleimen, verschlicken, verschorfen, verslumen, versteinern, versteppen, versumpfen, verunkrauten;
verbauern, verbiestern, vergreisen, verludern, versnoben, vertrotteln, verwaisen, verwitwen

GOAL 'final state' FOR CAUSED MOTION

verdaten, verfilmen, verformen, verkäsen, verkitschen, verkneten, verknoten, verkoken, vermosten, versaften, verschlagworten, verschnipseln, verschachteln, verschottern, verschrotten, verseifen, versinnbildlichen, vertonen, vertrusten, verwursten
verhexen, verknechten, verpartnern, verpreußen, versklaven

LOCATUM FOR CAUSED MOTION

verchromen, vergittern, verglasen, vergolden, verhüllen, verkabeln, verlinken verkitten, verkleiden, verkleistern, verklinkern, verminen, vernickeln, verpixeln, verpflastern, verplomben, verrohren, verschalen, verschiefern, verschleiern, verschlüsseln, verschnörkeln, versiegeln, versilbern, verstöpseln, verzinken, verzinnen, verzuckern
vergiften, vermüllen, verpesten, verstrahlen, verschmutzen, verseuchen;
verpfeffern, versalzen, verwässern

INSTRUMENT FOR ACTION/MOTION

verankern, verdübeln, verkeilen, verketten, verklammern, vernieten, verquirlen, verriegeln, verschrauben, verspachteln, verspunden

PROTO-AGENT FOR ACTION

verarzten

The prefix *zer-*

GOAL ‘final state’ FOR (CAUSED) MOTION

zerblättern, zerbröseln, zerfasern, zerfetzen, zerfleischen, zerfransen, zerfurchen, zerfusseln, zergliedern, zerkrümeln, zerlöchern, zerlumpen, zerpulvern, zerscherben, zerschroten, zersplittern, zerschrammen, zerstäuben, zerstückeln, zertrümmern

INSTRUMENT FOR ACTION

zerbeilen, zerbomben, zerhämmern, zermeißeln, zerraspeln, zersäbeln, zersägen