

Heike Baeskow

Noun-verb conversion between the poles of predictability and idiosyncrasy: How do denominal verbs build their argument structures?*

Abstract: This article addresses the controversial question how non-derived denominal verbs (e.g. *wingsuit*, *kennel*, *trombone*) build their argument structures. Based on selected subsets of conceptually related verbs it will be shown that the argument structures of these verbs are flexible though not arbitrary. Without context, these verbs evoke frame-like default situations which are determined by speakers' shared encyclopaedic knowledge and sensorimotor experience and which are mapped onto a small set of abstract event schemata that 'pre-design' thematic configurations. The discourse context, which also provides the syntactic context, either meets or models our expectations as to the context-free readings. In the latter case, new (metaphorical) readings are contextually created. These configurations are not arbitrary either because the meanings of verbalized nouns should always be (a) in a relation of contiguity to the base-noun concepts and (b) compatible with the semantics of the syntactic constructions.

Keywords: Noun-verb conversion, metonymy, metaphor, event schemata, frames, constructions

1. Introduction

The process traditionally referred to as noun-verb conversion involves an interesting dialectic. On the one hand, it is a very productive process in English. A plethora of non-derived denominal verbs have entered the English vocabulary for centuries, and new verbs are readily formed and interpreted on the spot (e.g. Clark and Clark 1979).¹ The verbal use of nouns also plays

* I would like to express my sincere gratitude to the Fritz-Thyssen-Stiftung (Cologne) for supporting the research project 'Conversion in English: The interaction of generic knowledge, contextual information, and syntactic constructions', which is headed by Gert Webelhuth. Furthermore, I would like to thank two anonymous reviewers for their positive and encouraging comments on this article, which is part of the aforementioned project.

1 Since the extensive literature on conversion cannot be discussed in this article, the reader is referred for example to Marchand (1969: 358–372), Clark and Clark (1979), Kiparsky (1997), Štekauer (1996), Bauer & Valera (2005), Valera (2015), or Baeskow (2019).

an important role in early language acquisition. As observed by Clark (1993: 201–205), young children tend to replace verbs they do not yet know with products of conversion whose base nouns denote entities serving to bring about the events they wish to express, e.g. *Can I fire* (“light”) *the candle*, or *Make it bell* (“ring”). On the other hand, quite a few non-derived denominal verbs display polysemy, and their meaning components may be rather idiosyncratic, or even metaphorical. The following sentences illustrate this point.²

- (1) a. Brash was another recent example of the assumption that someone can be *helicoptered* into top jobs. (GloWbE)
- b. A lady in the audience – apparently a friend of the composer – *handbagged* a man who clapped before the end of the playing of Pierre Boulez’ Piece for Two Pianos. (OED)
- c. The age when we commence to ‘*trombone* our newspaper’ in search of the receding near point of distinct vision. (OED)

This dialectic is also reflected in the literature. For example, while Clark and Clark (1979) emphasize the relevance of the context for the interpretation of (innovative) denominal verbs, which they refer to as ‘contextuals’, Štekauer (e.g. 1996, 2005) convincingly shows that the meaning of these verbs is to some degree predictable on conceptual grounds, i.e. independently of contextual information. A further point of controversy is the argument structure of these verbs. Aronoff (1980: 747) claims that converted verbs “can take any combination of arguments”. In Neo-Construction Grammar, evidence for the assumption that the categorial status and argument structure of abstract roots (e.g. CAT, DOG, SINK, BOAT) are determined exclusively by the morpho-syntactic context into which they are inserted is basically drawn from conversion. Consider for example the following sentences from Borer (2005: 29).

- (2) a. (the) dog boat(ed) (three) sink(s).
- b. (the three) sink(s) boat(ed) (some) dog(s).
- c. (the) sink(s) dogg(ed) (the) boat.

In principle, each of the three Encyclopaedic Items *dog*, *boat*, and *sink* can surface as a verb, even if the resulting sentences are pragmatically questionable – as in (2). Borer (2003: 39) attempts to compensate this deficit by

2 Throughout this article, the denominal verbs occurring in the examples will be highlighted by the use of italics. The examples were taken from various sources, namely the Oxford English Dictionary (OED), the Corpus of Contemporary American English (COCA), the Corpus of Global Web-based English (GloWbE), iWeb, and the Internet.

acknowledging that “[s]ome [sentences] are, of course, more compatible with world knowledge, or selectional restrictions, than others”. Although Borer and other representatives of Neo-Construction Grammar (e.g. Marantz 1997, 2001; Harley and Noyer 2000; Harley 2005) emphasize the relevance of encyclopaedic knowledge, neither its organization nor its interaction with morpho-syntactic information has been investigated so far. Moreover, while the sentences in (1) are interpretable in spite of the somehow marked use of the verbs *to helicopter*, *to handbag*, and *to trombone*, no meaningful conceptual relations can be established between the concepts DOG, SINK, BOAT and the putative events in which instances of these concepts are supposed to interact. Without conceptual information, the transitivity which becomes discernible in (2) and which – due to the absence of lexically determined argument structure “emerges through functional syntactic structure” (Borer 2003: 38) – is of little use to the interpretation of the sentences.

Štekauer et al. (2011) shed new light on the context-free interpretation of non-derived denominal verbs. Experiments performed by these authors suggest that there are correlations between conceptual fields converted verbs belong to (e.g. vehicles, animals, body parts) and semantic roles such as Instrument, Manner, Purpose, or Pattern. Analyses performed by Baeskow (2021a) on the basis of non-derived denominal verbs attested in the OED since 1900 point into a similar direction.

The aim of this article is to present fine-grained analyses which account for the partly predictable, partly idiosyncratic behaviour of selected subsets of non-derived denominal verbs and which go beyond the ‘top-down’ oriented view of neo-constructionist models in that they take the interaction of encyclopaedic knowledge, cognitively grounded knowledge, and Argument Structure Constructions (Goldberg, e.g. 1995) into consideration. Building on insights from Cognitive Linguistics it will be shown that verbalized nouns evoke frame-like default situations in which the ‘base-noun participant’ plays a salient role relative to other situation-dependent participants. Thus, noun-verb conversion is basically a metonymic process in the sense of Kövecses and Radden (1998), Dirven (1999), and Ruiz de Mendoza Ibáñez and Pérez Hernández (2001). Since frames are determined by world knowledge and human experience, they give rise to expected readings which are *per se* unaffected by contextual variation. At a higher level of abstraction, the frame elements (i.e. the participants interacting in a default situation) are mapped onto thematic roles which define a small set of event schemata. If subsets of verbalized nouns share frame information and display a similar mapping behaviour, they will be potential candidates for certain constructions. Moreover, it will be shown that the thematic roles which precede the role of the base-noun participant in an event schema are available for being linked to grammatical functions like subject or object. The discourse context in which

the verbs ultimately appear and which also provides the syntactic context may or may not match these ‘predesigned’ configurations.³ In the latter case, either a metaphorical transfer of the expected situation to another domain or the creation of a new situation will be required. However, in order to exclude nonce-expressions like those in (2), the verbal readings of nouns should always be (a) in a relation of contiguity to the base-noun concepts⁴ and (b) compatible with the semantics of the surface Argument Structure Constructions. In addition, they may establish cross-domain relations of similarity which are based on sensorimotor experience or imagination.

The article is structured as follows: In section 2, the theoretical framework will be presented in some detail. Thus, it will also be accessible to a readership less acquainted with Cognitive Linguistics. In section 3, the interaction of encyclopaedic knowledge, sensorimotor experience, and contextual information in the metonymic event construal, which may be supplemented by metaphorical extension, will be revealed on the basis of subsets of non-derived denominal verbs whose base nouns belong to three conceptual fields in the sense of Štekauer et al. (2011) – namely MEANS OF COMMUNICATION (e.g. *postcard, email, WhatsApp*), VEHICLES (e.g. *helicopter, wingsuit, time-machine*), and MUSICAL INSTRUMENTS (e.g. *piano, zither, trombone*) – and to two more general classes which, following Clark and Clark (1979: 791), will be referred to as PLACES (e.g. *bottle, holster, pony club*) and PLACEABLES (e.g. *wallpaper, graffiti, onion*). The results obtained in this article will be summarized in section 4.

2. The theoretical framework

2.1 Noun-verb conversion as metonymy

The model to be presented here is strongly influenced by the cognitive view initiated by Kövecses and Radden (1998) and elaborated by Dirven (1999) that (noun-verb) conversion is an instance of metonymy.⁵ While metonymy – like metaphor – has been considered a figure of speech for a long time, cognitive linguists like Lakoff and Johnson (1980), Lakoff (1987), Koch (1999), or Kövecses (2010) have shown that these devices are omnipresent in everyday discourse, too. A metonymic relation is established if a concept A (the

3 The participial adjective ‘predesigned’ is preferred here over ‘predetermined’ because the expected configurations do not have absolute character.

4 This requirement is in line with Štekauer’s (1996: 99–100) observation that “the majority of conversions have preserved their close semantic connection to the motivating units”.

5 Independent support for the analysis of conversion in terms of metonymy is provided by Schönefeld (2005), Cetnarowska (2011), and Bauer (2018).

metonymic vehicle or source) stands for or represents a concept B (the metonymic target) which is related to A in a way that it can be readily inferred from this source concept without being made explicit. More technically, both concepts must be contiguously related, i.e. there must be significant points of contact between them in the extra-linguistic world. These points of contact are manifold, and they can be, for example, of a spatial, temporal, or causal nature. Metonymy is typically exemplified for material concepts such as PART FOR WHOLE (*We don't hire longhairs*), PRODUCER FOR PRODUCT (*He's got a Picasso in his den*), or PLACE FOR EVENT (*Watergate changed our politics*); cf. Lakoff and Johnson (1980: 38–39). However, as argued convincingly by Kövecses and Radden (1998), all the classes of converted verbs identified by Clark and Clark (1979), too, are reanalysable as instances of metonymic relations, e.g. INSTRUMENT FOR ACTION (*to hammer, to bicycle, to shampoo*), AGENT FOR ACTION (*to author, to butcher, to jockey*), LOCATION FOR MOTION (*to porch, to kennel, to bottle*), etc. This proposal elegantly accounts for the huge number of converted verbs in English.⁶

In some sense, however, noun-verb conversion is a special instance of metonymy because the syntactic behaviour of the vehicle (i.e. of the base noun) changes when a verbal target reading is activated. In its target reading, it requires an argument structure which is not inherent to it, and the arguments have to be linked with grammatical functions like subject or direct object. One possible solution to this problem is to assume that a non-derived denominal verb is free to take any combination of arguments (Aronoff 1980: 747). As an alternative, argument structures are exclusively determined by the syntactic context, as assumed for example by Borer (2003, 2005a, 2005b); cf. section 2.3 for a more detailed discussion of Borer's model.

Both solutions are considered here to be unsatisfactory because experiments performed by Štekauer et al. (2011) have shown that the semantic role of the base noun is to some degree predictable from the conceptual field this noun belongs to. Moreover, the syntactic behaviour of subsets of established and more innovative verbs even allows for the hypothesis that the roles of other participants, too, are not entirely arbitrary (though contextually modifiable) and that the metonymic approach is suited to reveal conceptually determined thematic configurations at least to some degree. In order to test this hypothesis, a more detailed presentation of this approach is required.

6 Authors of traditional approaches to word-formation like Jespersen ([1942] 1974: 85), Marchand (1969: 359–389), Kastovsky (1982: 79–80, 172–173), or Adams (2001: 19–22) assume that verbs such as *to butter, to helicopter, to garage* etc. are derived from the corresponding nouns by means of a zero-affix \emptyset (cf. Sanders 1988, Lieber 2004: 90–91, Bauer, Lieber & Plag 2013: 563–564 for a critical discussion).

While Kövecses and Radden (1998) do not discuss conversion as metonymy in much detail, a more elaborate account is provided by Dirven (1999). According to Dirven's event-schema metonymy, the events denoted by non-derived denominal verbs (henceforth abbreviated as non-derived DNVs) are metonymically inferred from the participant denoted by the base noun. For example, as far as a sentence like *He was fishing (salmon)* is concerned, the Patient is so salient that it can metonymically stand for or represent the event as a whole (PATIENT FOR ACTION). Since an event can be portrayed from various perspectives, the relative prominence of the base-noun participant is not an absolute property, but ephemeral (Baeskow 2020, 2021a: 18–19). As far as Dirven's fishing scenario is concerned, the focus of attention may shift from the Patient to the Instrument (e.g. *He was luring fish*) or to the Manner of Action (e.g. *He was fishing pearls*). Since the base-noun participant is an integral part of the metonymically inferred event, noun-verb conversion can be conceived of as a PART-WHOLE relation, or, more precisely, as a *source-in-target relation* (Ruiz de Mendoza Ibáñez and Pérez Hernández 2001: 333). The metonymic event construal may co-occur with a metaphorical extension of the verbal meaning. While a metonymic vehicle and a metonymic target belong to the same domain, i.e. to the same semantic, logical, cultural or situational sphere (Thomaßen 2004: 68), metaphorical relations are established across different domains (e.g. Kövecses and Radden 1998: 48; Ruiz de Mendoza Ibáñez and Galera Masegosa 2014: 38). For example, according to Dirven (1999: 281–282), a phrase like *to fish pearls* is interpretable by metonymy alone (i.e. MANNER FOR ACTION) because “there is clear contiguity with the same domain as in *to fish herrings*”. In both cases, the domain is that of catching things in the sea. By contrast, a phrase like *to fish for a rich man* involves a metaphorical extension of the verbal meaning because it transfers the activity of fishing to a completely different domain.

The thematically labelled participants serving as a metonymic vehicle – such as the Patient, the Instrument, and the Manner role in the above examples – are selected from a small set of event schemata, i.e. configurations of thematic relations which can be conceived of as abstractions over states and events. The event schemata presented in (3), which are relevant for noun-verb conversion, are closely related to the schemata postulated by Dirven (1999: 285) and Radden and Dirven (2007: 298).⁷

7 Within the fine-grained theory of thematic relations developed by Rauh (1988), not only verbs, but also event nominals, prepositions and adjectives assign feature-based thematic relations to their arguments in three conceptual schemata, which comprise an action schema, a motion schema, and a rest schema.

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

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. Complementary to Dirven (1999) and Radden and Dirven (2007) the Agent and the Patient of the Action schema will be conceived of here as proto-roles in the sense of Dowty (1991). While these roles constitute cluster concepts defined over sets of thematic entailments (see section 2.3), there are a few minor roles such as Instrument Manner, or Means which are not further decomposable, but productively selected to provide metonymic access to events. Since these roles do not belong to the conceptual core of a situation, but rather serve to specify the setting, they are referred to as non-participant roles by Radden and Dirven (2007: 268). While Dirven (1999: 285) restricts the Instrument and Manner role to the Action schema, verbs like *to bicycle* or *to crayfish* suggest that these roles are also relevant for the Motion schema.

The Motion schema, which is of a spatial nature, shapes the route for an entity or individual which moves or is caused to move from a starting point (Source) along a Path towards a Goal. According to Radden and Dirven (2007: 278), a motion event is directional and evokes the SOURCE-PATH-GOAL image schema. In the force-dynamic world of experience, motion involves an Agent that either instigates its own motion (self-motion) or causes another entity to move towards a Goal (caused motion). If motion unfolds in the occurrence world of experience, it is not induced by an Agent, but has to be metaphorically interpreted as a Patient's change of state. As far as noun-verb conversion is concerned, we may state that motion in the occurrence world is expressed by intransitive, unaccusative verbs like *to gel* “to become a gel”, *to crescendo* “to increase gradually in loudness or intensity”, or *to synapse* “of a nerve-cell or axon: to form a synapse” (OED), each of which denotes a process.

The Location schema, too, is a spatial schema, but unlike the dynamic Motion schema, it abstracts over stative relations (e.g. *the ball is in the goal*, or *the dog is sitting on the sofa*). As far as noun-verb conversion is concerned, this schema is rarely activated. As shown by Lieber (2004: 91–92) and Baeskow (2021a: 22), there are only a few 20th century denominal

verbs that display a stative reading (e.g. *to landmark*, *to motel*, *to flat*, *to sauna*, *to Saturday-night*).⁸

The Transfer schema belongs to the set of force-dynamic schemata and describes events in which an Agent passes something to a Recipient. While Dirven (1999: 285) lists this schema but considers it to be irrelevant for event-schema metonymy, it will be shown in section 3.1 that it plays a role in the interpretation of verbs like *to email*, *to postcard*, *to WhatsApp*, etc. The small set of schematic events depicted in (3) is assumed here to provide an adequate basis for non-derived DNVs to build their theta-grids.

Although the non-derived DNVs discussed by Dirven (1999) are mainly introduced in short sentences, his discussion implies that verbs in isolation, too, evoke scenes or situations. These correspond to either literal or metaphorical readings. For example, *to strand* “evokes and reflects the shipwreck scene or a situation in which a child is left unattended in a strange place”, or *to land* “suggests a purposeful arrival, either from the sea or the air, as well as in the phrase ‘landing a job’” (1999: 283). Moreover, by grouping together verbs like *to strand*, *to beach*, *to land* or verbs of the type *to bottle*, *to box*, *to can* – the latter of which “evoke a scene of food preservation” – Dirven anticipates that conceptually similar vehicle concepts are likely to yield conceptually similar verbal readings. This observation is considered here to be crucial for the metonymic event construal and at the same time raises the question how scenes or situations are determined independently of the context. This question will be addressed in the following section.

2.2 Low-level configurations, high-level configurations, and primary knowledge

To begin with, it should be noted that scenes or situations (e.g. the shipwreck scene or the scene of food preservation) and the individuals or entities interacting therein are obviously closer to world-knowledge and hence less abstract than the event schemata and their thematically labelled participants (Proto-Agent, Instrument, etc.). Thus, it is useful to differentiate between ‘low-level’ and ‘high-level’ representations in the sense of Ruiz de Mendoza Ibáñez and Pérez Hernández (2011: 172–173) and Ruiz de Mendoza

8 Note that Dirven (1999: 280, 283–285) further introduces an essive schema, or schema of ‘beingness’ in which a Patient is assigned the status of class membership (*to author*) or an attribute (*to clean the table*). This schema has been criticized by Baeskow (2021a) for various reasons. In particular, the criterion of class-membership is not necessarily fulfilled – as acknowledged by Dirven himself (e.g. *Mary nursed the sick soldiers*) – and a mere essive relation conceals the highly dynamic character of verbs like *to author*, *to nurse*, or *to lawyer*, which rather exploit the action schema and which are compatible with the progressive.

Ibáñez and Galera Masegosa (2014: 63–65). According to these authors, the low level is the level at which general (or encyclopaedic) knowledge as to individuals, entities, and the way they normally interact in the extra-linguistic world is processed. This kind of knowledge is shared by most speakers of a speech community at least to a certain degree. The high level allows for an abstraction over multiple low-level models and hence displays grammatically relevant information. Applied to event-schema metonymy, we may state that ‘situations’ or ‘scenes’ evoked by non-derived DNVs are low-level constructs, whereas event-schemata, which abstract away from the multitude of low-level situations, constitute high-level configurations.

As far as the interpretation of non-derived DNVs is concerned, it is also necessary to differentiate between context-free and contextually determined readings.⁹ Independently of contextual information, the concepts denoted by the base nouns evoke default low-level situations in which the base-noun participant (i.e. the source in target) is involved and plays a prominent role relative to other situation-dependent participants. Since the large number of objects denoted by the base nouns of non-derived DNVs are part of the material world in the sense of Radden and Dirven (2007: 272), many default readings derive from the way human agents typically interact with them. More precisely, we may state that default situations are derived from an object’s ‘affordances’, i.e. from its physical qualities which humans know how to interact with (Gibson 1979; Kaschak and Glenberg 2000; Schönfeld 2018).¹⁰

This anthropocentric view is at the heart of the cognitive principle FUNCTIONAL OVER NON-FUNCTIONAL postulated by Kövecses and Radden (1998: 65) and Kiparsky’s (1997: 482) principle “[i]f an action is named after a thing, it involves the canonical use of the thing”. Following a more recent development in Cognitive Linguistics, we may state that the mental simulation of human interaction with the environment is based not only on general (i.e. ‘low-level’) knowledge as specified for example in qualia structures (Pustejovsky 1996, Bouillon et al. 2012) or frames (Fillmore 1977, Fillmore et al. 2002), but also involves primary knowledge, i.e. knowledge that is directly grounded in bodily and mental experience (Ruiz de Mendoza Ibáñez

9 An onomasiological approach to context-free interpretations of converted verbs is provided by Štekauer (1996) and Štekauer (2005: 52–54, 63–68, 81–85, 159–194).

10 Significantly, the focus is on the agent-related interaction – which may be typical or atypical – rather than on the qualities themselves. Although Gibson (1979) coined the term affordance for the “complementarity of the animal and the environment”, his discussion shows that it also comprises the way human beings interact with what the environment offers.

and Pérez Hernández 2011: 172–173; Ruiz de Mendoza Ibáñez and Galera Masegosa 2014: 63–65). Thus, for example, our ability to form a mental image of a bicycle or to simulate the leg movements performed when riding a bicycle is as much part of our mental representation of the concept BICYCLE as qualia-based information such as ‘is a vehicle’ (FORMAL), ‘consists of various components such as a frame, two wheels, pedals, a handlebar, a seat, etc.’ (CONSTITUTIVE), ‘is used by a human being for riding’ (TELIC), and ‘is industrially manufactured’ (AGENTIVE). As outlined in Baeskow (2021b), evidence for this simulation-based view, which allows us for example to interpret sentences like *She bicycled her legs* despite the absence of a referent of the base noun, comes from neuro-scientific and psychological research. Experiments performed in both disciplines revealed that the mental simulation or imagination of activities involves the activation of some of the same brain areas as the actual performance of those activities (e.g. Gallese and Lakoff 2005; Barsalou 2003 2009, 2020; Bergen 2012; Bergen and Chang 2005). According to Barsalou’s (2020) theory of situated simulation (or conceptualization), mental representations of concepts are never created independently of the modalities (e.g. vision, audition, haptics), the body (accommodating for example the motor system), the physical environment, and the social environment.¹¹ Moreover, since perception always takes place in a situation, mental representations of concepts, too, are always situated in background settings, events, and introspections (Barsalou 2009: 1283). They are never processed in a vacuum. Applied to metonymic noun-verb conversion, the aspect of situated simulation or conceptualization can be considered the psychological motivation for the scenes or situations which according to Dirven (1999) are evoked by (sets of) non-derived denominal verbs.

In order to render low-level situations evoked by material concepts more tangible, they can be conceived of as frames, i.e. as “script-like structure[s] of inferences, which are linked to the meanings of linguistic units (lexical items)” (Fillmore et al. 2002) in the sense of Frame Semantics.¹² The participants interacting in a frame are defined as frame elements (FEs). For example, according to Fillmore (1977), a frame evoked by the simplex verb *to buy* involves a BUYER, a SELLER, an OBJECT OF TRANSACTION, a MEANS

11 For psychological details, the reader is referred to Barsalou (2020), where the interaction of the above-mentioned factors in a Situated Action Cycle is discussed. The interaction of conceptual structure with the visual and the motor system was emphasized already by Jackendoff (e.g. 1983 and subsequent work).

12 A comprehensive network of frames was developed by Fillmore and his collaborators for the FrameNet project (<https://framenet.icsi.berkeley.edu/fndrupal/>, accessed 24 July 2022).

OF PAYMENT, etc. These components, which determine a commercial event, are mentally present even if not all of them are linguistically expressed. This aspect is considered here to be most important for the interpretation of non-derived DNVs because the ‘base-noun participants’ of these verbs, too, are part of the low-level frames to which they provide mental access independently of whether or not they are introduced as discourse referents in a given context (cf. Baeskow (2021b) for a detailed discussion). A further basic assumption made in the present study is that frame elements – unlike the participants interacting in abstract event schemata – are not yet thematically labelled.¹³ Nevertheless, three of them display thematic entailments which cluster into proto-roles at the high level of representation (see section 2.3). The frame elements of low-level representations, including the ‘base-noun participant’, are mapped onto the restricted set of thematic roles which define the high-level event schemata presented in section 2.1.

2.3 Constructions: Linking and syntactic flexibility

In a communicative situation, a non-derived denominal verb is always presented in a discourse context. The discourse context also provides the syntactic context and hence the “surface” arguments. As indicated already in section 1 and section 2.1, the alleged syntactic flexibility of verbs formed from nouns by means of conversion inspired Borer’s (e.g. 2003: 40) exo-skeletal model, according to which Encyclopaedic Items are abstract roots whose categorial status and argument structure are determined exclusively by the morpho-syntactic context into which they are inserted.

One problem with Borer’s approach is that the focus of research is on syntactic structure, whereas information as to world knowledge (or encyclopaedic knowledge) and cognitively grounded knowledge associated with lexical items remains vague although the relevance of these factors is acknowledged. Borer’s (2003: 34, Fn. 3) decision not to make claims as to the organization of conceptual systems – “however organized and constrained” – is motivated by the assumption that this issue is irrelevant for linguistics and belongs to the realm of psychological and/or philosophical studies. However, the neuro-scientifically and psychologically founded observation that “[l]anguage exploits the pre-existing multimodal character of the sensory-motor system” (Gallese and Lakoff 2005: 456), which is also at the heart of Barsalou’s (e.g. 2003, 2009, 2020) theory of situated action or simulation (cf. section 2.2), calls this view into question.

13 As pointed out by Fillmore et al. (2003: 240), frame elements are “designed in terms of frame specific situational roles, rather than semantic roles as articulated in Case Grammar”.

A further problem which directly results from the insufficient treatment of conceptual knowledge and its interaction with the grammar is that Borer's exo-skeletal model and other strictly 'top-down' oriented models – including Distributed Morphology¹⁴ – are susceptible to generating syntactically well-formed but meaningless sentences like ?*The sinks dogged the boat* (cf. (2c)), which have to be tolerated. More specifically, top-down oriented approaches as they stand fail to distinguish between unmarked (i.e. expected or predictable) meanings, pragmatically marked (i.e. unexpected) but creative readings that may cause surprise effects, and definitely meaningless configurations like (2c). This problem manifests itself especially in noun-verb conversion because quite a few denominal verbs range between the poles of meaning predictability and idiosyncrasy. Although non-derived denominal verbs do indeed display a certain degree of syntactic flexibility, frame information and corresponding high-level thematic configurations shared by conceptually similar verbs (e.g. *bottle, box, can; mail, fax, SMS*) suggest that the argument structures of these verbs are not entirely arbitrary.

Interestingly, representatives of Neo-Construction Grammar are aware of this problem, but do not offer a satisfactory solution. According to Marantz (2001: 6–7), for example, the meaning of a root in the context of little x (e.g. little v) is “negotiated”, using “Encyclopaedic” knowledge. In a similar vein, Borer (2003: 34) acknowledges that although an Encyclopaedic Item is a category-less, argument-less concept, “its meaning might give rise to certain expectations for a felicitous context”. But where do these expectations come from, and how do they interact with information provided by the (syntactic) context? As will be shown in section 3, a better understanding of these complex issues requires more fine-grained analyses which take encyclopaedic knowledge, grammatically relevant knowledge and cognitively grounded knowledge into consideration and which – following Ruiz de Mendoza Ibáñez and colleagues – are based on the assumption that these qualitatively different ‘types’ of knowledge are processed at different levels of abstraction.

While the syntactic context undoubtedly has the potential to model the meanings of verbs and other lexemes, the point to be made here is that deviations from the ‘norm’ only become apparent against the background of speakers’ shared world knowledge, syntactic knowledge, and sensorimotor experience. In order to properly account for the well-known dialectic of meaning predictability and idiosyncrasy in noun-verb conversion, the strongly syntax-based ‘top-down’ view adopted by representatives of Neo-Construction Grammar should be complemented by a ‘bottom-up’

14 Cf. for example Marantz (1997, 2001), Harley and Noyer (2000), Harley (2005), Copley & Harley (2015: 132–135).

perspective which proceeds from what is expected (or predictable in the sense of Štekauer et al. 2011) and thus helps to detect contextually determined creative variation and to modify our expectations accordingly. Thus, the present approach is more in line with Goldberg's (e.g. 1995, 2006, 2019) Cognitive Construction Grammar, which ensures transparent mapping from semantic configurations to meaningful Argument Structure Constructions and allows arguments that are not part of a verb's argument structure to be contextually supplemented by the construction this verb instantiates.

Argument Structure Constructions, which are also applied to selected innovative non-derived DNVs by Schönefeld (2018), constitute complex form-meaning patterns which exist independently of individual verbs (Goldberg 1995: 1). Constructional meaning abstracts away from the rich semantics of individual verbs and only encodes syntactically relevant aspects of verbal meaning such as 'X MOVES (TO/FROM) Y' (Intransitive Motion Construction), 'X CAUSES Y TO MOVE (TO/FROM) Z' (Caused-Motion Construction), or 'X DIRECTLY CAUSES Y TO UNDERGO A CHANGE OF STATE (USING Z)' (Transitive Causative Construction); cf. Goldberg (2019: 35). Since an Agent's acting on an entity or individual does not necessarily entail a change of state for the latter participant (e.g. *John kisses Mary*), a Transitive Construction 'X ACTS ON Y' should be added to this set.

Each construction is associated with a configuration of argument roles, i.e. construction-specific thematic roles such as Agent, Patient, Recipient, etc. Argument roles are to be distinguished from the participant roles of individual verbs, which Goldberg considers to be more specific instances of the argument roles. Thus, for example, the verb *to kiss* would specify the participant roles <kisser> and <kissee>. Participants that "function as focal points within a scene" (Goldberg 1995: 44) are obligatorily profiled (e.g. the <kisser> and the <kissee> in the case of *to kiss*). Argument roles are obligatorily profiled only if they are expressed as direct grammatical relations, namely SUBJECT, OBJECT, or OBJECT₂. Participant roles can be fused (or unified) with semantically compatible argument roles of a construction.¹⁵ While lexically profiled roles have to be fused with profiled argument roles obligatorily, the syntactic realization of non-profiled roles is optional. For example, while the <eater> role of the verb *to eat* is obligatorily fused with the Agent of the Transitive Construction, the <food substance> may remain unexpressed.

15 Goldberg (1995: 50) borrowed the notion of fusing from Jackendoff who, however, uses it in a different way. In simplified terms, Jackendoff's (e.g. 1987: 386, 1990: 53) rule of Argument Fusion unifies the reading of a head's syntactic arguments with the semantics of the corresponding indexed positions in the head's Lexical Conceptual Structure. Thus, selectional restrictions (e.g. the complement of *to drink* must specify a liquid) are accounted for.

While simplex verbs like *kiss* or *eat* are inherently associated with thematic relations, metonymically verbalized nouns – especially innovative or innovatively used ones – are assumed here to build their theta-grids from the event schemata represented in (3). Moreover, since the base nouns lack inherent thematic information, it will be further assumed that none of the roles they acquire from an event schema is lexically profiled unless the verbal reading of the noun has become conventionalized. Thus, a certain degree of syntactic flexibility is ensured. However, as observed by Primus (1999: 52, 54) and Primus (2012: 32), there is a relation of correspondence or dependency between thematic roles. For example, if a participant is (causally) affected, there must be a further participant in the event that causes the affectedness. Consider a sentence like *The burglar opened the safe*. Obviously, the referent of *the safe* is involved in the event denoted by the verb *to open* as a Proto-Patient only because there is a Proto-Agent (i.e. the referent of *the burglar*) who initiated this event. Thus, affectedness is, strictly speaking, relevant only for predicates with two or more argument positions.¹⁶ Similarly, a Recipient cannot be identified independently of the type of activity performed by the Proto-Agent. As far as a sentence like *Peter gave Mary an apple* is concerned, Mary qualifies as a Recipient only because there is a Proto-Agent (i.e. Peter) who initiates the change of possession. Beyond such an event, this role cannot be assigned to Mary.

As far as event-schema metonymy is concerned, we may state in a wider sense that a verbalized noun should be compatible with syntactic constructions providing argument positions for the thematic roles that precede the prominent participant in the event schema. For example, if the participant selected for the verbalization process is an effected object, or artifact (e.g. *selfie*), the verb minimally requires an Agent that causes this object to come into existence, e.g. *We had even selfied by this point cause he was so amazing* (iWeb). If the prominent participant serving as a metonymic vehicle is the Goal, there must be at least some entity that moves towards that goal in the occurrence world of experience (e.g. *When the ethidium is removed, the ring [of DNA] supercoils* (OED)) or that is caused to move towards the goal in the force-dynamic world (e.g. *This discovery predicted an enzyme that can supercoil DNA* (OED)).

A further assumption made in this article is that three thematic roles, namely the Agent, the Patient, and the Recipient constitute proto-roles.

16 According to Primus (1999: 52), “[a]ll of the basic thematic relations defining Proto-Patient imply thematic dependence on another participant. If one participant of a predicate is causally affected, the predicate necessarily selects a causer as another participant, and correspondingly for controlled and moved participants.”

According to Dowty (1991: 572), the Proto-Agent and the Proto-Patient are defined over the sets of thematic entailments represented in (4) and (5) respectively. Entailments are relevant not only for the syntactic distribution of participants, or frame elements, but also reveal that agenthood and patienthood are a matter of degree.¹⁷

- (4) Contributing properties for the Agent Proto-Role:
- a. volitional involvement in the event or state
 - b. sentience (and/or perception)
 - c. causing an event or change of state in another participant
 - d. movement (relative to the position of another participant)
 - e. exists independently of the event named by the verb
- (5) Contributing properties for the Patient Proto-Role:
- a. undergoes change of state
 - b. incremental theme
 - c. causally affected by another participant
 - d. stationary relative to movement of another participant
 - e. does not exist independently of the event, or not at all

These two clusters are supplemented by an Argument Selection Principle (ASP) and three corollaries. According to the ASP (Dowty 1991: 576), the argument bearing the greatest number of Proto-Agent entailments will be realized as the subject and the argument bearing the greatest number of Proto-Patient entailments will surface as the direct object in syntax. Corollary 1 makes the following prediction: If two arguments of a relation have (approximately) equal numbers of entailed Proto-Agent and Proto-Patient properties, then either or both may be lexicalized as the subject (and similarly for objects). As far as three-place predicates are concerned, Corollary 2 predicts that the nonsubject argument having the greater number of entailed Proto-Patient properties will be lexicalized as the direct object and the nonsubject argument having fewer entailed Proto-Patient properties will be lexicalized as an oblique or prepositional object.

A further participant which has been shown to qualify for a proto-role is the Recipient (Primus 1999: 3, 54–55, 2012: 44–45). According to Primus,

17 These entailments were elaborated by authors like Primus (1999), Engelberg (2000), Davis and Koenig (2000), or Ackerman and Moore (2001). For example, a proto-agent entailment that Primus (1999: 36–37) and Engelberg (2000: 211) consider to be more appropriate than <volition> is <control>, which indicates that the course and duration of an event underlie the Agent's responsibility. This entailment will be adopted here.

the Proto-Recipient (i.e. the recipient, addressee, or benefactive) is a hybrid role because it is characterized by Proto-Agent and Proto-Patient entailments alike. On the one hand, the participant bearing this role is sentient and becomes a possessor or experiencer in the event denoted by a transfer verb (e.g. *give*, *sell*, *communicate*, *show*). Thus, it displays an agentive component. On the other hand, the Proto-Recipient is patient-like because its state of possession is changed by another participant's activity.

As indicated in section 2.2, it is assumed here that entailments are determined by low-level configurations holding between frame elements. Since the meanings of constructions are abstractions over the most basic scenes of human experience only, namely those which correspond with a restricted set of clause types (Goldberg 1995: 66), they are not fine-grained enough to allow for an *a priori* specification of their proto-roles. In principle, the proto-role approach is compatible with Construction Grammar. However, while Goldberg (1995: 116–117) criticizes that Dowty's linking generalizations only hold for transitive verbs, Corollary 2 of the Argument Selection Principle also accounts for three-place predicates. Moreover, this principle is well applicable to intransitive verbs, which only license a single argument. If a verb is unergative (e.g. *to laugh*, *to dance*), its sole argument qualifies as the Proto-Agent, and if a verb is unaccusative (e.g. *to fall*, *to arrive*), the single argument to be spelled out assumes the role of the Proto-Patient.

3. The interaction of general knowledge, cognitively grounded knowledge, and syntactic constructions in the metonymic event construal

As far as non-derived DNVs are concerned, the interaction of general knowledge (as to entities, individuals, and situations), cognitively grounded knowledge, and Argument Structure Constructions providing the contextually relevant “surface arguments” is assumed here to account for the partly predictable, partly idiosyncratic character of verbalized nouns. Moreover, since conceptually similar base nouns (e.g. those denoting means of communication or vehicles) share frame information and display a similar mapping behaviour, the event schemata represented in (3) will provide sets of verbalized nouns with default theta-grids which make them potential candidates for certain syntactic constructions.

The discourse context in which the verbs ultimately appear and which also provides the syntactic context may or may not match these ‘pre-designed’ configurations. In the latter case, a metaphorical transfer of the expected situation to another domain or the creation of a new situation will be required. However, in order to constrain syntactically well-formed but meaningless

configurations like ?*The sinks dogged the boats* (see (2c)), a relation of contiguity which meaningfully relates the vehicle concept to the target eventuality and which (contextually) determines its salience relative to other situation-dependent participants must still be discernible. Metonymic mapping is optionally supplemented by metaphorical extension. Moreover, contextually determined verbal readings must be compatible with the semantics of the surface Argument Structure Constructions. As far as the latter requirement is concerned, non-derived DNVs do not basically differ from simplex verbs (e.g. *to sneeze, to kick*) whose semantics, too, must integrate with the semantics of the constructions and whose theta-grids may be overridden by the context (Goldberg 1995: 53–55, 61). In the following sections, the interaction of general knowledge, cognitively grounded knowledge, and syntactic constructions in the metonymic event construal will be analysed for selected subsets of verbs.

3.1 Selected denominal verbs of transfer

In this and the subsequent sections it will be shown that the metonymic approach involving the small set of event schemata introduced by Dirven (1999) is well suited to make predictions as to potential thematic configurations of verbalized nouns. As outlined in section 2.2, material concepts are usually processed in accordance with their agent-related affordances and in a background setting. Consider for example verbs like *mail, airmail, postcard, fax, email, SMS, text message, or WhatsApp*, whose base nouns denote means of communication and hence belong to a conceptual field in the sense of Štekauer et al. (2011).

Given the aspect of situated simulation introduced in section 2.2, the concepts related to the base nouns quite naturally evoke a situation or frame in which a communicator sends a message to an addressee by making use of the respective means of communication (cf. Fillmore et al. 2003: 243). At a higher level of abstraction, the Means provides metonymic access to the Transfer schema which belongs to the force-dynamic world and involves a Proto-Agent, a Proto-Recipient, a Proto-Patient, and the Means as the salient participant and source in target. This thematic configuration, which includes the low-level entailments associated with the syntactically relevant participants, is depicted in Figure 1.¹⁸

18 In Figure 1, the metonymic relation is indicated by the arrow.

Force-dynamic world			
Means → Transfer schema			
Proto-Agent	Proto-Recipient	Proto-Patient	Means
COMMUNICATOR	ADDRESSEE	MESSAGE	MEANS OF COMMUNICATION
<sentience>	<sentience>	<change of position>	
<control>	<possession>		
<causation>	<causally affected>		
<indep. existence>			

Fig. 1: Means for Transfer

This configuration is not arbitrary, but compatible with the way we typically interact with means of communication in everyday situations. The roles of the Transfer schema provide the verbs of sending with a preliminary theta-grid independently of contextual information. Given the target configuration in Figure 1 and the aspect of dependency among thematic roles observed by Primus (1999, 2012), the construction into which the verbalized nouns of sending are inserted should provide argument positions for the roles that precede the prominent Means participant in the Transfer schema. A construction which optimally meets this ‘recommendation’ is the Ditransitive Construction [SUBJ, V, OBJ, OBJ₂] ‘X CAUSES Y TO RECEIVE Z’ because the verbs’ conceptually pre-designed roles can be fused with the corresponding argument positions of this construction. This scenario is exemplified in (6).

- (6) a. I’ve *emailed* you an mp3 for you to have a listen to. (OED)
 b. When no one answered, she *faxed* him her permission to use a spare key. (iWeb)
 c. [...] he used his common sense left the goods with my neighbour and *postcarded* me the delivery details [...] (<https://uk.trustpilot.com/review/yodel.co.uk?page=9555>)
 d. These are the women who’ve [sic!] [...] created Pinterest boards just for you or *Whatsapped* you pics of everything they see that they think would be just perfect for your wedding vision. (iWeb)

However, as pointed out above, not all of the participants interacting in a default situation are necessarily spelled out. As far as metonymically converted verbs are concerned, it is assumed here that linking is determined either by the syntactic context or by convention (if the verbal reading of the noun has become established). For example, according to Goldberg (1995: 53), the verb *to mail* differs from the three-place verb *to hand* in that it only requires two of its participant roles to be spelled out, namely the Agent and the Patient. The syntactic realization of the Recipient is optional for *to mail* (e.g. *Paul mailed a letter* vs. **Paul handed a letter*). Since the verbs *to mail*

and *to hand*, which according to the OED are attested since 1827 and 1642 respectively, are highly entrenched, it is obvious that their obligatory roles are lexically profiled. Although metonymic relations underlie established non-derived DNVs (Kövecses and Radden 1998) and innovative non-derived DNVs alike, established verbs have entered the lexicon with the fixed meanings they acquired. In this case, no metonymic “online” processing is required any time the verbs are used in contexts that match those meanings. Innovative or innovatively used non-derived DNVs are more flexible to a certain degree and do not profile their roles in advance. For example, while neither *to mail* nor *to hand* are used intransitively, more recent verbs like *to email*, *to text message*, *to SMS*, or *to WhatsApp* minimally require their Proto-Agent to be linked with the subject – as shown in (7).

- (7) a. It is much easier to ‘blow someone off’ when they are calling or *emailing*... but not so much when they walk in to [sic!] the office. (COCA)
- b. On the train to work people slept, read, *text messaged*, phoned, talked or listened to music. (COCA)
- c. Drivers aged 18–21 had their eyes off the road four times as long as law-abiding drivers while frantically ‘*SMSing*’ when on the road. (OED)
- d. WhatsApp has already made substantial progress in LatAm and the Middle East where around two thirds of internet users are now *WhatsApping*. (iWeb)

Nevertheless, syntactically non-expressed roles (including that of the base noun) remain mentally present or implied because they are part of the low-level frame evoked by the means of communication. For example, as far as the sentences in (7) are concerned, the fact that messages and addressees are involved in the respective communicative events is conceptually implied.

Denominal verbs of sending are also compatible with the caused-motion construction [SUBJ, V, OBJ, OBL_{Path}] ‘X CAUSES Y TO MOVE (TO/FROM) Z’, e.g. *We faxed the script to someone named Grizz* (COCA). According to Radden and Dirven (2007: 294–295), the (fully instantiated) Ditransitive Construction focuses on the Recipient, whereas the Caused-Motion Construction emphasizes the transfer of the object, as indicated by the preposition *to*. Thus, the Caused-Motion Construction is preferred if the Recipient is non-human and hence not directly affected by the transfer, e.g. *The district emailed the plan to the state Department of Education on Tuesday morning* (iWeb). In this example, the department metonymically stands for its employees. As far as the contexts collected for the present study are concerned, the denominal verbs discussed in this section consistently refer to transfer events and do not display any unexpected readings.

3.2 Selected denominal verbs of travelling and transport

A further subclass of denominal verbs whose theta-grids are at least partly predictable on conceptual grounds are those whose base nouns denote vehicles. Examples of this type listed by Clark and Clark (1979: 776) and the OED are *bicycle*, *helicopter*, *jet*, *motorcycle*, *scooter*, *canoe*, *rollerblade*, *snowboard*, *snowshoe*, *balloon*, or *parachute*. Each of the motivating concepts, which belong to a conceptual field in the sense of Štekauer et al. (2011), evokes situations related to travelling or transport. Although these situations are located in different background settings (canoeing, for example, is typically located in a body of water, whereas ballooning is located in the air), each of the objects denoted by the base nouns affords the transport of human beings. This shared affordance renders the vehicle more salient for the verbalization process than other participants such as the one who controls it, or the travelled route. At a higher level of abstraction, the Instrument provides mental access either to self-motion (INSTRUMENT FOR SELF-MOTION) or to caused motion (INSTRUMENT FOR CAUSED MOTION). In the first case, the Proto-Agent uses (and possibly operates) a vehicle in order to get somewhere or to move. In the latter case, the Proto-Agent operates a vehicle in order to transport passengers or a freight. Both configurations are represented in Figure 2 and Figure 3, respectively. Note that the first participant displays the Proto-Patient entailment <change of position> which, however, does not alter its status as the Proto-Agent because the proto-agent entailments are prevailing.

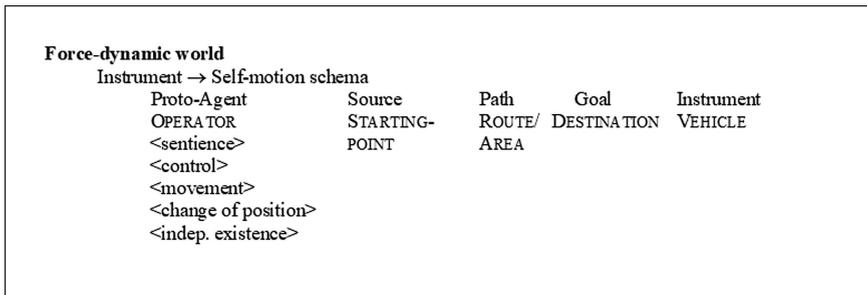


Fig. 2: *Instrument for Self-Motion*

Force-dynamic world						
Instrument → Caused-motion schema						
Proto-Agent	Proto-Patient	Source	Path	Goal	Instrument	
OPERATOR	PASSENGER/	STARTING-	ROUTE	DEST.	VEHICLE	
<sentience>	FREIGHT	POINT				
<control>	<causally affected>					
<causation>	<change of position>					
<movement>						
<change of position>						
<indep. existence>						

Fig. 3: *Instrument for Caused Motion*

Given Primus' (1999) observation that there is a dependency among roles, we may state that non-derived DNVs created from the perspective of the vehicle (i.e. the high-level Instrument in Figure 2 and Figure 3) minimally link the Proto-Agent that uses this vehicle because vehicles do not move in a directed way independently of human control, e.g. *Previously, I was bicycling 30 minutes a day* (iWeb).

Moreover, the aspect of 'affordance' introduced in section 2.2 is iconically mirrored by the syntactic behaviour of the motion verbs under consideration. If a vehicle is designed for one person (e.g. a bicycle, a motorbike, or rollerblades), the corresponding verb is likely to express self-motion and to be attracted by the Intransitive Motion Construction, which licenses a subject and a path-defining oblique. If a vehicle (e.g. a helicopter, a jet, a ship, or a Hyperloop) affords the transport of more than one person or goods, the Caused-Motion Construction [SUBJ, V, OBJ, OBL_{Path}] constitutes an alternative. Examples of motion verbs motivated by vehicle concepts are provided in (8). As far as the imaginary travelling event denoted in (8c) is concerned, motion occurs in time rather than in space.

- (8) a. In this video I am *wingsuiting* across the gorgeous landscape of Medici. (<https://www.youtube.com/watch?v=1882QDuOTbc>)
- b. My parents have *segwayed* (is that a verb?) all over the world and absolutely love it. (iWeb)
- c. If anyone ever tells you that they really love to network, chances are they're either lying or they've *time-machined* from a decade that was up in arms over the cordless car phone. (iWeb)
- d. Sponsor Argent Mortgage recently *jetted* Phelps to the Bahamas to film a yet-to-be-seen commercial. (COCA)
- e. Kevin and Sky try *hyperlooping* from New York to Washington, D.C. (<https://www.youtube.com/watch?v=noTVkcehiEk>)

While the verbs of sending presented in section 3.1 tend to be used in their literal readings and imply that a referent of the base noun is involved in the events they denote (e.g. if Mary emailed a message, we can exclude the possibility that she used a means of communication other than email), verbs of travelling or transport display non-expected meaning extensions.

The dynamic character of non-derived DNVs, which manifests itself especially in less expected or surprising interpretations, is due to the fact that material concepts are complex “simulators” (Barsalou 2003: 536, 546) which are accessible in a multi-modal way and of which a variety of aspects (or “packages of inferences”) – including (dynamic) mental images – can be accessed and, of course, exploited for the verbalization process. In particular, speakers are able to simulate or imagine situations which are intensionally related to the metonymic vehicle but which do not necessarily involve a referent of this participant (Baeskow 2021b). Consider for example the following sentences:

- (9) a. So Obama *helicoptered* over New Jersey with Governor Christie (COCA).
 b. Though some will argue that their parenting methods produce children who are under-stimulated and ignored by their parents, I think the information provides a good counter-argument for parents inclined to *helicopter* over their kids all day long. (iWeb)

In (9a), the verb *to helicopter* denotes an event in which a passenger (i.e. Obama) flew over an area by helicopter. The context further specifies the area over which this event took place, namely New Jersey. This scenario is fully compatible with the affordances offered by the concept HELICOPTER. The high-level metonymic relation that motivates this verbal reading is INSTRUMENT FOR SELF-MOTION. Note that this sentence involves a further metonymic relation PASSENGER FOR OPERATOR because Obama was not the pilot of the helicopter. This metonymy also underlies sentences like *Jim flew to New York* or *Mary jetted across the Atlantic*, whose Agents are in control of their travelling events, but not of the vehicles they use for travelling.

The context in (9b) evokes a scene in which no helicopter actually occurs. Contrary to Kiparsky’s (1997) principle that an action named after a thing involves the canonical use of the thing, it is not the function typically associated with the concept HELICOPTER which is being conceptualized and verbalized here. From a cognitive point of view, the interpretation of *to helicopter* in this context is slightly more complex because it involves a combination of metonymy and metaphor.¹⁹ In terms of metonymy, the concept HELICOPTER

19 The interaction of metonymy and metaphor in different contexts is discussed in detail by Ruiz de Mendoza Ibáñez and Galera Masegosa (2014: 107–117).

(i.e. the high-level Instrument) stands for the hovering movement performed by a helicopter and thus for its manner of motion (INSTRUMENT OF MOTION FOR MANNER OF MOTION). The situation of a manned helicopter hovering over an area in search of someone or something is metaphorically projected onto a situation in which overprotective parents constantly supervise their children in order to protect them. In other words, the parents are perceived to “hover” over their children like a helicopter hovering over an area. The relation of similarity thus established is based on visual experience and hence involves a partial re-enactment of a visual state in the sense of Barsalou’s (e.g. 2003, 2009) situated action. Because of the strong visual impact of the metaphor, we may even state that we are dealing here with an image metaphor. Unlike conceptual metaphors, which map a concept of a domain A onto a concept of a domain B (e.g. LIFE IS A JOURNEY), image metaphors manifest themselves in the superimposition or mapping of one conventional image onto another conventional image (Lakoff and Turner 1989: 8; Kövecses 2010: 44, 57; Ruiz de Mendoza Ibáñez and Pérez Hernández 2011: 4, 11). Since most speakers share a dynamic mental image of a helicopter hovering over an area, this image is readily transferred to a different domain, which in this example is the domain of parenting.

Syntactically, the verb *to helicopter* instantiates the Intransitive Motion Construction not only in its literal reading (9a), but also in its metaphorical reading (9b). Since the metaphorically created situation also involves a Proto-Agent (i.e. the parents) and a Path (i.e. the virtual trajectory relative to the position of the children), both roles can be fused with the argument roles of the Intransitive Motion Construction. The following sentences show that the “transport” reading of the verb *to helicopter* also allows for metaphorical extension.

- (10) a. I suffered from hypernatremia and was *helicoptered* to hospital in Las Vegas. (iWeb)
 b. Brash was another recent example of the assumption that someone can be *helicoptered* into top jobs. (GloWbE)

While the meaning of *to helicopter* is metonymically inferable in (10a) (i.e. the INSTRUMENT represents the ACTION of transporting someone to hospital by helicopter), the interpretation of (10b) again requires a combination of metonymy and metaphor. As in (9b), the concept HELICOPTER, which is the high-level Instrument, metonymically stands for the Manner of Motion. Metaphorically, the situation of transporting someone to a physical goal by helicopter is mapped onto a situation of promoting someone to a top job. This process, too, involves a partial re-enactment of a visual state, but the mental image contextually activated is not that of a hovering helicopter (as

in (9b)), but that of a rising helicopter. Syntactically, the verb *to helicopter* instantiates the Caused-Motion Construction in its literal “transport” reading (10a) and in its extended meaning (10b). However, in (10b), the contextually determined metaphorical reading requires the caused-motion event to be reinterpreted as enablement ‘X ENABLES Y TO MOVE (TO/FROM) Z’, which according to Goldberg (1995: 76, 161) is a related sense and which is also expressed by simplex verbs like *to allow*, *to let*, or *to free*. Enablement is to be interpreted in the sense that an Agent (which remains unexpressed in (10b)) removes an obstacle for someone. This sentence additionally conveys a pejorative connotation because someone who is helicoptered into a top job might not have been selected for this position because of his qualifications.

Significantly, however, a contextually determined idiosyncratic reading of a non-derived DNV does not supersede the most probable readings motivated by low-level and primary knowledge as to the base-noun concepts (e.g. HELICOPTER). Without contextual information, concepts related to means of transport will be conceived of as high-level Instruments that provide metonymic access to situations in which these Instruments are used for (caused) motion within an area, along a path, or from a source towards a goal (INSTRUMENT FOR (CAUSED) MOTION). On the other hand, it is precisely speakers’ shared encyclopaedic knowledge and sensorimotor experience which allows them to interpret non-derived DNVs in new or non-canonical (but still imaginable) contexts. Speakers’ potential to produce metaphorical, multi-modally accessible readings in the absence of a referent of the base noun is considered here to be the true source of creativity in noun-verb conversion.

As observed in Baeskow (2021b), the fact that many non-derived DNVs are formed from nouns denoting basic-level objects (Rosch et al. 1976) most speakers are familiar with facilitates not only the verbalization of these nouns, but also the use and interpretation of the corresponding verbs in the absence of a referent of the base noun. For example, a sentence like *He spread his table napkin, and finding the soup too hot, paddled his spoon in it* (OED) readily evokes a scenario in which the referent of *he* moves the spoon like a paddle in order to cool the soup. It should be noted, however, that more complex concepts which correspond with morphologically complex words are not generally excluded from noun-verb conversion. Especially the metonymic relation INSTRUMENT FOR ACTION has given rise to a number of more recent verbs whose bases constitute either endocentric compounds (e.g. *airbrush* [1912], *tommy-gun* [1940], *handbag* [1952], *mountain bike* [1990]), or neo-classical compounds (e.g. *oscillograph* [1910], *telemeter* [1929], *pantograph* [1934], *ultracentrifuge* [1946]). Verbs of the latter type are less likely to assume metaphorical interpretations because the events they denote require specific knowledge and the involvement of a referent of the base noun.

3.3 Selected denominal verbs related to musical instruments

Verbs formed from nouns of the conceptual field MUSICAL INSTRUMENT are of interest, too. On the one hand, these verbs naturally evoke a frame in which a human being plays the instrument denoted by the noun. On the other hand, the definitions and quotations from the OED suggest that the functional reading “to play the x” is attested, but rarely activated. Contrary to Clark and Clark (1979: 777), who classify verbs of this type as instrument verbs, it is assumed here that the musical-instrument concepts rather have a patient-like character in their canonical frames. Since they do not produce sounds without being acted upon by a Proto-Agent, they are considered here to be Proto-Patients, or, more precisely, causally affected objects. Moreover, unlike true instrument verbs (e.g. *to hammer the nail into the wall with a claw hammer*), verbs formed from nouns denoting musical instruments do not license a *with*-phrase. Syntactically these verbs are compatible with the Intransitive Construction in their literal readings (see (11)), whereas they instantiate various constructions in their (metaphorical) manner readings, as exemplified in (12). The examples in (11) are motivated by the metonymy PROTO-PATIENT FOR ACTION.

- (11) a. She *pianos*, and I do a little in a mild way on the flute. (OED)
 b. Koch, Arnold Weinstein, and others came to the house, taping their poems as I *pianoed* and *zithered* and *drummed* away. (OED)
 c. Within ‘Three Bonzos...’, he has now assumed the role of frontman, confidently filling Vivian Stanshall’s shoes whilst still *saxophoning* and being responsible for Robots. (GloWbE)
- (12) a. We wandered and *fiddled* and *zithered* and *tambourined* through France. (OED)
 b. The age when we commence to ‘*trombone* our newspaper’ in search of the receding near point of distinct vision. (OED)
 c. Cosell sent chills up the spines of the working press as he *trumpeted* his way into press conferences and clubhouses. (COCA)

As far as non-derived DNVs of this type are concerned, a manner reading is definitely prevailing. But why should that be so? As suggested in Baeskow (2021b), a linguistically motivated answer is that the verbal use of nouns is restricted (though not blocked) if the nouns complementize simple verbs and form fixed collocations with them. In their literal meaning, verbs formed from the names of musical instruments compete with the simple verb *to play*, which selects for nouns of this conceptual field, e.g. *to play the guitar, the piano, the flute, the trombone*, etc. Thus, there is no communicative-pragmatic need

to infer the activity of playing an instrument from the nominal concept.²⁰ If, however, a manner reading is intended, event-schema metonymy – possibly combined with metaphor – allows speakers of English to bundle more complex configurations into one verb. In this case, an economy effect is achieved because the only alternative would be a syntactic phrase. For example, a more cumbersome alternative to (12a) would be (12a)′:

- (12) a.′ We wandered through France while playing the fiddle, the zither, and the tambourine.

Example (12a) differs from the means-of-transport examples in (9b) and (10b) in that referents of the base nouns *fiddle*, *zither*, and *tambourine* are actually involved in the event. Since the referents of *we* actually played these instruments while traversing France, no metaphorical extension of this situation applies. What is more interesting in this context is the metonymic relation underlying the three non-derived DNVs. Borrowing the notion of ‘double metonymy’ introduced by Ruiz de Mendoza Ibáñez and Pérez Hernández (2001), it is assumed here that the verbalization process involves double metonymic mapping, namely (a) from the Proto-Patient (i.e. the low-level musical instrument) to the action of playing the instrument and (b) from this action to the manner of motion (PROTO-PATIENT FOR ACTION FOR MANNER OF MOTION). This double metonymy accounts for the phenomenon that the activity of making music and the activity of traversing France occur simultaneously. In their metonymically construed manner-of-motion reading, the verbs *to fiddle*, *to zither* and *to tambourine* pattern with the simple verb *to wander* and contextually fit the Intransitive Motion Construction [SUBJ, V, OBL_{Path}].

Let us now turn to sentence (12b). The situation or frame evoked by this sentence, namely that of reading the newspaper, is very different from the expected frame of someone playing the trombone. From a simulation-based perspective, however, the context-dependent meaning of the non-derived DNV is not as idiosyncratic as it seems at first sight because a very particular slice of primary information associated with the concept TROMBONE, namely the perceptually salient arm movements typically performed when playing this instrument, is picked out to create a verbal manner-of-motion reading for this concept. The dynamic mental image of a trombonist moving his or her arm back and forth when playing his or her instrument serves as a metaphorical link between the concept TROMBONE and the long-sighted reader’s activity of moving the newspaper back and forth in order to find the

20 The same explanation holds for the predominantly metaphorical use of verbs formed from nouns denoting games (e.g. *to ping-pong*, *to yo-yo*) or food substances (e.g. *to pretzel*, *to rhubarb*).

near point of distinct vision. The meaning thus construed renders the verb *to trombone*, which in its established, affordance-oriented reading “to play the trombone” (OED) only profiles and links its Proto-Agent, contextually compatible with the semantics of the Transitive Construction ‘X ACTS ON Y’. However, the established affordance-oriented reading remains unaffected by the contextually determined deviation from the expected norm. As shown in Baeskow (2021b), a manner-of-motion reading may be overtly signalled by image schematic adverbial expressions, e.g. *to ping-pong (the proposal) back and forth, to shuttle to and fro, to yo-yo up and down*.

Sentence (12c) illustrates that a manner reading may also be emphasized by a further syntactic indicator, which in this case is the *way* construction. As pointed out by Jackendoff (1990: 211–223) and confirmed by Goldberg (1995: 199–217), the *way* construction is not part of the argument structure of the verbs which instantiate it. Since there is no verb which licenses such a configuration, the constituent ‘possessive pronoun + *way*’ cannot be considered the verb’s internal argument which is projected from the lexicon into the syntax. Based on Jackendoff (1990), Goldberg (1995: 206) postulates the following skeletal representation for this construction, where V is a nonstative, intransitive or iterative verb and OBL codes a directional:

(13) [SUB_i [V [Poss_i way] OBL]]

Semantically, the *way* construction is complex because it encodes two different and yet associated readings, namely (a) a Means interpretation, which according to Goldberg is the basic reading and (b) a less frequent Manner interpretation, which she assumes to have diachronically derived from (a). Especially in its Means interpretation, the *way* construction signals that an individual moves along a self-created Path and that the (metaphorical) creation of that Path may be laborious because of some external difficulties or obstacles. Thus, basic level or superordinate level motion verbs like *run* or *walk* are largely excluded from this construction (e.g. **She walked her way to New York*). In the Manner reading, by contrast, the self-propelled motion is not necessarily laborious, and the Path may be pre-established (e.g. *He hiccupped his way out of the room*). The activity denoted by the verb can be considered a concurrent circumstance. In other words, this very productive pattern signals that an Agent moves along a self-created literal or metaphorical Path by means of (or while) performing a particular activity – possibly in order to overcome obstacles or difficulties.

As far as sentence (12c) is concerned, the Manner reading of the *way* construction is activated. Since Howard Cosell in his capacity as a famous sport reporter had access to press conferences and clubhouses, the Path was already pre-established. What is more relevant for the interpretation

of the verb *to trumpet* in this context is that Cosell made his way into press conferences and clubhouses while speaking or shouting in a trumpet-like voice (MANNER OF ACTION FOR ACTION). In this setting, the musical instrument stands for the distinctive sound it produces when being played, and this acoustic impression is metaphorically projected onto the Proto-Agent's way of expressing his opinion loudly and directly. In terms of Barsalou's theory of situated action, we may state that the interpretation of *to trumpet* in this context involves a partial re-enactment of an auditory state. Just as speakers have a visual impression of a helicopter's trajectory (see (9b) and (10b)), and just as they are able to mentally simulate or imagine the arm movements performed by someone playing the trombone (see (12b)), they share an acoustic image of the sound of a trumpet (or other musical instruments). This image can be used to establish relations of similarity whose metaphorical source is the domain of music and whose metaphorical target is a different domain – like that of the human voice in (12c).²¹

The 'Means' interpretation of the *way* construction is activated for example in a sentence like *A 15-year-old boy from Preston has drummed his way to the finals at this year's Young Drummer of the Year competition.*²² In this context, the creation of the path required some effort. The referent of *a 15-year-old boy* made it to the finals at the competition by means of playing the drum, and, of course, by practicing as part of the preparations for the competition. Since the Agent's action is goal-directed, the metonymy PROTO-PATIENT (i.e. 'affected object') FOR ACTION underlying the interpretation of the verb *to drum* is assumed here to combine with the conceptual metaphor GOALS ARE DESTINATIONS.

The examples presented in this section once more show that in-depth analyses which take the interaction of encyclopaedic, contextual and cognitively grounded information into account contribute to a better understanding of coercion phenomena as discussed for example by Borer.

3.4 Selected denominal verbs related to places and placeables

As indicated already by Dirven (1999: 283), further verbs forming a semantically coherent set are those which metonymically "evoke a scene of food preservation", e.g. *to bottle*, *to box*, *to can*. Most speakers share the general knowledge that bottles, boxes and cans are physical objects of the type

21 By convention, the acoustic image activated by the concept TRUMPET is also transferred to the voice of an elephant, e.g. *My elephant suddenly raised his trunk and trumpeted several times* (OED).

22 <https://www.lep.co.uk/news/people/15-year-old-preston-boy-reaches-finals-young-drummer-year-2020-competition-1378004> (accessed 24 July 2022).

‘container’ (FORMAL), that each of these objects is made of some material (CONSTITUTIVE), and that each of them serves the purpose of storing something (TELIC). Speakers also know that bottles and cans are filled with liquid, whereas boxes are filled with substances or solid matter, and they know that grasping a bottle is different from grasping a can which – unlike a bottle, has a handle (CONSTITUTIVE). In other words, our interaction with these objects is embodied, i.e. “structured by our constant encounter via our bodies and brains” (Gallese and Lakoff 2005: 456).

However, the scene of food preservation, which reflects the content of the base nouns’ TELIC quale, suggests that verbs of this type display a non-attested stative interpretation “to preserve liquid or foodstuff” and thus lack the causative component which is typical of these verbs (e.g. “to put liquid into bottles”). Rimell (2012: 170) opts for an output-oriented model according to which the causative component is provided by the syntactic context. The syntactic context is certainly one of several factors that play an important role in the interpretation of (innovative) non-derived DNVs, but it does not account for speakers’ ability to make rather reliable predictions as to context-free interpretations – as shown by Štekauer et al. (2011). Once again, it is the aspect of situated action which is assumed here to provide a psychologically founded explanation for the dynamic character of the exemplary verbs and of denominal verbs in general. From this point of view, the context-free verbal interpretation of object concepts is related to the way we purposefully interact with these objects in the extra-linguistic world by making use of their affordances. For example, since bottles, boxes, or cans are conceptually classifiable as containers serving to preserve foodstuff, the way we interact with them in order to make use of their prototypical function is more relevant for the verbal interpretation than the static scene of food preservation, which rather provides the background setting.²³

More generally, verbs like *bottle*, *box* or *can* belong to the class of location verbs (Clark and Clark 1979: 772–773). Apart from the verbalized CONTAINERS, this class also includes verbs created from nouns denoting STORAGE PLACES (e.g. *cellar*, *garage*, *showcase*), HABITATS (e.g. *house*, *kennel*, *cloister*), LISTS (e.g. *hot-list*, *schedule*, *headline*), and other entities which are subsumable under the very general label of ‘Place’ (e.g. *porch*, *mothball*, *orbit*) although the default situations simulated for each of these objects are located in different background settings.

An interesting point raised by Clark and Clark (1979: 772) is that the pattern underlying location verbs is the reverse of the pattern of another set

23 As mentioned in section 2.1, the set of stative non-derived DNVs is very small as compared to the large sets of dynamic verbs.

of non-derived DNVs which they refer to as locatum verbs. Although the base nouns of these verbs, too, are rather heterogeneous, they can be classified as ‘placeables’ (Clark and Clark 1979: 791). Locatum verbs comprise a rather comprehensive subclass of verbalized SUBSTANCES (e.g. *to cold-cream*, *to porcelain-enamel*, *to tarmac*, *to chrome*, *to gas*, *to mascara*). In addition, some smaller subclasses such as verbalized COVERINGS (e.g. *blanket*, *wall-paper*, *carpet*), SYMBOLS (e.g. *sign*, *graffiti*, *watermark*), or CONDIMENTS (e.g. *salt*, *pepper*, *onion*) are identified. The relation between locatum and location verbs is described by Clark and Clark (1979: 772) as follows: “In *gas the car*, with a locatum verb, the gas goes in the car; but in *kennel the dog*, with a location verb, the kennel doesn’t go in the dog – the dog goes in the kennel.” Significantly, predominant features of nominal concepts, i.e. features which according to their approach are salient for the verbalization process, may be relational with respect to another category, and this relation tends to be asymmetric. Thus, for example, a predominant feature of quivers is that they are for holding arrows, whereas arrows exist independently of quivers (Clark and Clark 1979: 790). In Baeskow (2021a), this phenomenon is referred to as unidirectional functionality because in terms of event-schema metonymy, the event is construed from the perspective of the participant which has a function with respect to another participant. The relative prominence thus established is displayed either by the location (e.g. kennels have a function with respect to dogs, but not vice versa) or by the locatum (e.g. the gas has a function with respect to a car, but not vice versa).

If the pattern underlying location verbs was just the reverse of the pattern underlying locatum verbs, as assumed by Clark and Clark, we should expect verbs of both types to evoke the Caused-Motion schema, with the base-noun participant occupying either the role of the location (Goal) or of the locatum (Patient). This analysis, however, does not account for the fact that the location is causally affected only in the case of locatum verbs. If the locatum is metonymically highlighted, this entity is not moved in order to keep or store it at some location (e.g. the gas goes in the car), but in order to adjust or modify the location according to an Agent’s needs. For example, the gas is applied to the car in order to make it run. Similarly, a saddle is placed on a horse in accordance with the rider’s needs, a computer system is firewalled in order to protect it from unauthorized access, and an animal is ear-tagged in order to render it identifiable.

Following Davis’ (2001: 135–137) analysis of the locative alternation, it is assumed here that location verbs merely activate the Caused-Motion schema because the Proto-Agent’s causing the locatum to move does not affect the

location.²⁴ For example, in (14), the individual named *Conley* causes his gun to move into the holster, and this activity does not have any effect on the holster. By contrast, the semantics of locatum verbs is more complex because these verbs activate a combination of the Action schema and the Caused-Motion schema. In the Action schema, the location is causally affected by the Proto-Agent's activity and qualifies for an incremental theme if the progress of the Agent's activity is mirrored by the successively changing state of the location. In the Caused-Motion schema, the same Proto-Agent causes the locatum to move towards the location, which is not only the Goal of the locatum's motion but also the Proto-Patient of the Action schema. In (15), for example, the referents of *he and another artist* causally affect the referent of *an entire train* (i.e. the incremental theme and location) by means of applying graffiti (i.e. the locatum) to it.

(14) Conley had *holstered* his gun and tried to calm Latham. (COCA)

(15) On Christmas Day 1989, he and another artist *graffitied* an entire train, from top to bottom (OED).

While location verbs like *to holster* follow the metonymic relation GOAL FOR CAUSED MOTION, *to graffiti* and other locatum verbs involve a double metonymy LOCATUM FOR ACTION FOR CAUSED MOTION because the locatum provides mental access to a complex event in which the Proto-Agent acts on the location (i.e. the Proto-Patient of the Action schema) by means of causing the locatum to get in contact with this location (which is also the Goal of the Caused-Motion schema). This configuration is represented in Figure 4. In order to illustrate the distribution of the low-level participants (or Frame Elements, FE) over the high-level thematic roles, the human participant, the locatum and the location are annotated with the labels FE1, FE2, and FE3 respectively.

24 Although Davis' analysis of verbs like *spray* and *load* is couched in a HPSG framework, it is assumed here to be transferable to denominal verbs in event-schema metonymy.

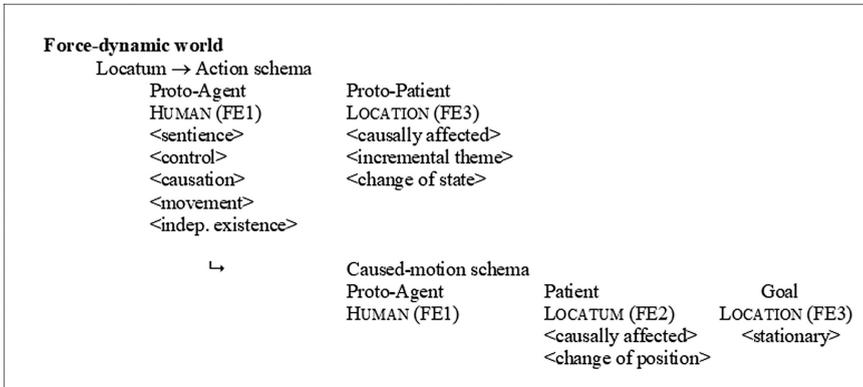


Fig. 4: *Locatum for Action for Caused Motion*

As predicted by Dowty's (1991) Argument Selection Principle, the argument bearing the greatest number of Proto-Patient entailments will surface as the direct object in the syntax. In Figure 4, the location (FE3) clearly outnumbers the locatum in proto-patient entailments. Moreover, the observation that the thematic roles which precede the role of the base-noun participant in an event schema predesign its potential argument structure is met once more. If the material concept motivating the verbalization process is a location, the locatum and the Proto-Agent are available for linking. Both roles precede the location (or high-level Goal) in the Caused-Motion schema. If the material concept motivating the verbalization process is a locatum (as in Figure 4), the location – which precedes it as the high-level Proto-Patient of the Action schema – and the Proto-Agent are available for syntactic realization.

While the Proto-Agent and the Proto-Patient are linked with the subject and the direct object respectively, the participant denoted by the base noun, which constitutes an “implicit argument” (Jackendoff 1990: 55), does not correspond with an argument position. Nevertheless, it is a well-known fact that this participant (or rather a specification or conceptually compatible substitute thereof) can be optionally realized in the form of a prepositional phrase, as exemplified in (16) and (17). While this adjunct is headed by a directional preposition like *in* only if caused motion is expressed (see (16)), the preposition is *with* if the location is causally affected (i.e. adjusted, modified, completed, embellished, improved in quality, etc.) by being brought into contact with the specified locatum (see (17)).

- (16) Back home we *bottled* the wine in a troop of recycled bottles, [...] (https://chambersstwines.com/Articles/12934/the-produttori-including-a-special-group-of-home-bottled-wines)
- (17) He put down a new floor, put up a new door, and *ainted* the walls with a fresh coat of paint. (iWeb)

As shown in the preceding sections for *to helicopter*, *to trombone*, and *to trumpet*, the context in which a non-derived DNV ultimately appears may evoke a situation which is very different from the conceptually evoked default situation. The following contexts, too, create surprise effects because the activities denoted by the verbs *to handbag* and *to onion* are not those which immediately come to mind.

- (18) A lady in the audience – apparently a friend of the composer – *handbagged* a man who clapped before the end of the playing of Pierre Boulez' Piece for Two Pianos. (OED)
- (19) The fellow wiped his eyes which had been well *onioned* for the purpose. (OED)

Since the function of a handbag is to store accessories, the verb *to handbag* in isolation should evoke a frame or situation in which a female Agent interacts with this object in an expected way by putting things into it (GOAL FOR CAUSED MOTION). The context in (18), however, denotes an event in which the referent of *a lady in the audience* beats her seat neighbour with her handbag (INSTRUMENT FOR ACTION). This reading is not motivated by the prototypical function associated with the concept HANDBAG, but contextually exploits different affordances of this concept, namely the material it is made of (CONSTITUTIVE) – which must be hard enough for beating someone – and its haptic qualities such as its shape and size. These affordances allow the lady to (mis-)use her handbag as an object for beating, and it is precisely this contextually determined misuse which makes the 'handbag participant' a contextual reference point for the event construal. In this context-specific scenario the concept HANDBAG evokes the Action schema in which a sentient Proto-Agent that is in control of the event forcefully acts on a Proto-Patient by using the handbag as an Instrument. The roles that precede the Instrument in the event schema, namely the Proto-Agent and the Proto-Patient, can be linked (or fused) with the argument roles of the Transitive Construction [SUBJ, V, OBJ], whose semantics 'X ACTS ON Y' is compatible with the event described in (18). Interestingly, the OED entry for *to handbag* reveals that this verb has never been attested in the most obvious reading "to

put something into one's handbag" (GOAL FOR CAUSED MOTION), which reflects a woman's prototypical, function-oriented interaction with this accessory. Since this reading is pragmatically well-formed, we are obviously dealing here with an accidental gap.²⁵

In sentence (19), the verb *to onion* preserves its locatum reading, but the affordance of the base-noun concept exploited for the event construal is context-specific. While onions, like spices, are typically used to flavour food (TELIC), it is the vegetable's property to make the eyes water which is verbalized in accordance with the needs and goals of situated action and which renders the established verb *to onion* "to season or flavour with onions" contextually polysemous. Significantly, however, expected context-free readings (in the sense of Štekauer) *per se* remain unaffected by contextually determined, non-canonical readings. The default situations evoked by material concepts – or (sub-)classes of material concepts – are not superseded, but only backgrounded by usage idiosyncrasies, and they yield well-formed readings independently of whether or not these readings are activated. Moreover, the default situations allow the decoder (i.e. the hearer or reader) to detect creative deviations from the expected 'norm' and to adjust the interpretation to the meaning contextually coerced upon a verb in a syntactic configuration.

4. Conclusion

In this article, the controversially discussed question how non-derived denominal verbs build their argument structures was addressed from a cognitive perspective. On the one hand, the meanings of these verbs are predictable to some degree, and potential meanings pave the way for potential configurations of thematic relations which are not inherent to the base nouns. On the other hand, non-derived denominal verbs – especially innovative or innovatively used ones – are known for their semantic diversity and structural flexibility.

The analyses performed in this study have shown that the base nouns of non-derived denominal verbs evoke frame-like default situations in which the 'base-noun participant' plays a prominent role and interacts with other situation-dependent participants in an expected way. These situations, which are metonymically inferred on the basis of encyclopaedic knowledge

25 According to the OED, the metaphorical reading "to subject to a forthright verbal assault or strident criticism; to bully or coerce in this way", which is first attested in 1982, was created with reference to Margaret Thatcher. The scenario of a woman beating someone with her handbag is metaphorically mapped onto a scenario in which a woman verbally attacks someone.

and sensorimotor experience, give rise to context-free verbal readings, e.g. *to helicopter* “to travel by helicopter” (INSTRUMENT FOR MOTION), “to transport (someone or something) by helicopter” (INSTRUMENT FOR CAUSED MOTION), *to kennel* (GOAL FOR CAUSED MOTION), *to trombone* (PROTO-PATIENT FOR ACTION). Significantly, context-free readings *per se* remain unaffected by contextual variation or deviation – independently of whether or not they will be activated.

At a higher level of abstraction, the default situations are mapped onto event schemata (Dirven 1999; Radden and Dirven 2007) which are defined over a small set of thematic roles and which ‘pre-design’ the theta-grids of the verbalized nouns. In particular, it was shown that denominal verbs whose base nouns belong to a conceptual field in the sense of Štekauer et al. (2011) are likely to share ‘low-level’ frame information and thus to display a similar mapping behaviour. Proceeding from the observation made by Primus (1999, 2012) that there is a dependency among thematic roles, a further point made in the present study is that thematic roles which precede the role of the base-noun participant in an event schema are available for being linked to grammatical functions in a syntactic construction.

The discourse context, which also provides the syntactic context (or Argument Structure Construction in the sense of Goldberg (e.g. 1995)), either meets or models our expectations as to the context-free readings. The subclasses of verbs analysed in the present study have shown that the context either metaphorically transfers a default situation to a different domain (e.g. *to helicopter over the children*, *to trombone the newspaper*) or creates a new frame in which the base-noun participant plays an unexpected role (e.g. *to handbag the man*, *to onion the eyes*). While context-free default situations always involve the base-noun participant as a salient frame element (or ‘source in target’), contextually determined meanings of non-derived denominal verbs frequently do not involve a referent of the base noun. They rather highlight a particular slice of information associated with the complex base-noun concept (or ‘simulator’ in Barsalou’s terminology) which is accessible via the sensorimotor system (e.g. the visually perceptible trajectory of a helicopter or the arm movements typically performed when playing the trombone). Since speakers share not only encyclopaedic knowledge, but also sensorimotor experience as to the motivating concepts, they readily simulate or imagine situations in which no referents of the base-noun participants, but only multi-modally accessible “impressions” thereof are contextually activated.

However, if the context modifies our expectations as to the verbal meaning of a non-derived denominal verb, the non-canonical meaning should nevertheless be relatable to the base-noun concept by contiguity. The verbal reading created by the metonymic (part-whole) relation PARTICIPANT FOR EVENT

optionally serves as a starting-point for metaphorical extension. In addition, innovative verbal meanings – like conventionalized meanings – should be compatible with the semantics of the Argument Structure Constructions in which the verbs (contextually) occur. Thus, meaningless configurations will be conceptually ruled out. To summarize, the results obtained in this study show that the argument structures of non-derived denominal verbs are not arbitrary and that the dialectic of predictability and idiosyncrasy in the event construal is well-accounted for by a cognitive approach which takes the interaction of encyclopaedic knowledge, cognitively grounded knowledge, and syntactic constructions into consideration.

References

- Ackerman, Farrell & John Moore. 2001. *Proto-properties and grammatical encoding. A correspondence theory of argument selection*. Stanford, CA: CSLI Publications.
- Adams, Valerie. 2001. *Complex words in English*. Harlow: Pearson Education Limited.
- Aronoff, Mark. 1980. Contextuals. *Language* 56(4). 744–758.
- Baeskow, Heike. 2019. Denominal verbs in morphology. In Rochelle Lieber & Mark Aronoff (eds.), *Oxford Research Encyclopedia of Linguistics*. Oxford: Oxford University Press. <https://doi.org/10.1093/acrefore/9780199384655.013.502> (accessed 19 July 2022).
- Baeskow, Heike. 2020. Event-schema metonymy as a relation of Prominence. In Livia Körtvélyessy & Pavol Štekauer (eds.), *Complex words. Advances in morphology*, 82–99. Cambridge: Cambridge University Press.
- Baeskow, Heike. 2021a. Noun-verb conversion as a metonymic metamorphosis. *SKASE Journal of Theoretical Linguistics* 18(1). 2–34.
- Baeskow, Heike. 2021b. Experiencing the conceptual wealth of non-derived denominal verbs: A multi-level, simulation-based approach. *Studia Linguistica* 2021. 1–35 (Early view online). <https://doi.org/10.1111/stul.12189> (accessed 19 July 2022).
- 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. <https://doi.org/10.1098/rstb.2008.0319> (accessed 19 July 2022).
- Barsalou, Lawrence W. 2020. Challenges and opportunities for grounding cognition. *Journal of Cognition* 3(1), 31. 1–24.
- Bauer, Laurie & Salvador Valera (eds.). 2005. *Approaches to conversion/zero-derivation*. Münster: Waxmann.
- Bauer, Laurie, Rochelle, Lieber & Ingo Plag. 2013. *The Oxford reference guide to English morphology*. Oxford: Oxford: Oxford University Press.

- Bauer, Laurie. 2018. Conversion as metonymy. *Word Structure* 11(2). 175–184. <https://doi.org/10.3366/word.2018.0123> (accessed 19 July 2022).
- Bergen, Benjamin & Nancy Chang. 2005. Embodied Construction Grammar in simulation-based understanding. In Jan Ola Östman & Mirjam Fried (eds.), *Construction Grammars. Cognitive grounding and theoretical extensions*, 147–190. Amsterdam & Philadelphia: Benjamins.
- Bergen, Benjamin. 2012. *Louder than words. The new science of how the mind makes meaning*. New York: Basic Books.
- Borer, Hagit. 2003. Exo-skeletal vs. endo-skeletal explanations. Syntactic projections and the lexicon. In John Moore & Maria Polinsky (eds.), *The nature of explanation in linguistic theory*, 31–67. Stanford CA: CSLI Publications.
- Borer, Hagit. 2005a. *In name only*. Oxford: Oxford University Press.
- Borer, Hagit. 2005b. *The normal course of events*. Oxford: Oxford University Press.
- Bouillon, Pierrette, Elisabetta Jezek, Chiara Melloni & Auréli Picton. 2012. Annotating qualia relations in Italian and French complex nominals. In Nicoletta Calzolari et al. (eds.), *Proceedings of the Eighth International Conference on Language Resources and Evaluation (LREC)*, 1527–1532. Istanbul: European Languages Resources Association (Elra).
- Cetnarowska, Bożena. 2011. Conversion as metonymy and the question of recursiveness. In Bogusław Bierwiaczonek, Bożena Cetnarowska & Anna Turula (eds.), *Syntax in Cognitive Grammar*, 13–26. Częstochowa: WSL.
- Clark, Eve & Herbert Clark. 1979. When nouns surface as verbs. *Language* 55. 767–811.
- Clark, Eve. 1993. *The lexicon in acquisition*. Cambridge: Cambridge University Press.
- Copley, Bridget & Heidi Harley. 2015. A force-theoretic framework for event structure. *Linguistics and Philosophy* 38. 103–158. <https://doi.org/10.1007/s10988-015-9168-x> (accessed 19 July 2022).
- Davis, Anthony R. & Jean-Pierre Koenig. 2000. Linking as constraints on word classes in a hierarchical lexicon. *Language* 76(1). 56–91.
- Davis, Anthony R. 2001. *Linking by types in the hierarchical lexicon*. Stanford: CSLI Publications.
- Dirven, René. 1999. Conversion as a conceptual metonymy of event schemata. In Klaus-Uwe Panther & Günter Radden (eds.), *Metonymy in language and thought*, 275–287. Amsterdam & Philadelphia: Benjamins.
- Dowty, David R. 1991. Thematic proto-roles and argument selection. *Language* 67. 547–619.
- Engelberg, Stefan. 2000. *Verben, Ereignisse und das Lexikon* [Verbs, events, and the lexicon]. Tübingen: Niemeyer.
- Fillmore, Charles J. 1977. Scenes-and-frames semantics. In Antonio Zampolli (ed.), *Linguistic structures processing*, 55–88. Amsterdam: North-Holland Publishing Company.

- Fillmore, Charles J., Srinu Narayanan, Collin F. Baker & Miriam R.L. Petruck 2002. FrameNet meets the Semantic Web: A DAML+OIL frame representation. In *Proceedings of the 18th National Conference on Artificial Intelligence*. Edmonton, Canada.
- Fillmore, Charles J., Christopher R. Johnson & Miriam R.L. Petruck 2003. Background to FrameNet. *International Journal of Lexicography* 16(3). 235–250.
- Gallese, Vittorio & George Lakoff. 2005. The brain's concepts: The role of the sensory-motor system in conceptual knowledge. *Cognitive Neuropsychology* 22(3/4). 455–479. <https://doi.org/10.1080/02643290442000310> (accessed 19 July 2022).
- Gibson, James J. 1979. *The ecological approach to visual perception*. New York: Houghton Mifflin.
- Goldberg, Adele. 1995. *Constructions. A Construction Grammar approach to argument structure*. Chicago: The University of Chicago Press.
- Goldberg, Adele. 2006. *Constructions at work. The nature of generalization in language*. Oxford: Oxford University Press.
- Goldberg, Adele. 2019. *Explain me this! Creativity, competition, and the partial productivity of constructions*. Princeton: Princeton University Press.
- Harley, Heidi & Rolf Noyer. 2000. Formal versus encyclopedic properties of vocabulary. In Bert Peeters (ed.), *The lexicon-encyclopedia interface*, 349–374. Amsterdam: Elsevier.
- Harley, Heidi. 2005. How do verbs get their names? Denominal verbs, manner incorporation, and the ontology of verb roots in English. In Nomi Erteschik-Shir & Tova Rapoport (eds.), *The syntax of aspect*, 42–64. Oxford: Oxford University Press.
- Jackendoff, Ray. 1983. *Semantics and cognition*. Cambridge, Mass.: MIT Press.
- Jackendoff, Ray. 1987. The status of thematic relations in linguistic theory. *Linguistic Inquiry* 18(3). 369–411.
- Jackendoff, Ray. 1990. *Semantic structures*. Cambridge, Mass.: MIT Press.
- Jespersen, Otto. [1942] 1974. *A modern English grammar on historical principles. Part VI: Morphology*. London: George Allen & Unwin Ltd.
- Kaschak, Michael P. & Arthur M. Glenberg. 2000. Constructing meaning: The role of affordances and grammatical constructions in sentence comprehension. *Journal of Memory and Language* 43. 508–529.
- Kastovsky, Dieter. 1982. *Wortbildung und Semantik*. Düsseldorf: Pädagogischer Verlag Schwann-Bagel GmbH.
- Kiparsky, Paul. 1997. Remarks on denominal verbs. In Alex Alsina, Joan Bresnan & Peter Sells (eds.), *Complex predicates*, 473–499. Stanford: CSLI Publications.
- Koch, Peter. 1999. Frame and contiguity. On the cognitive bases of metonymy and certain types of word formation. In Klaus-Uwe Panther & Günter Radden (eds.), *Metonymy in language and thought*, 139–167. Amsterdam & Philadelphia: Benjamins.
- Kövecses, Zoltán & Günter Radden. 1998. Metonymy: Developing a cognitive linguistics view. *Cognitive Linguistics* 9. 37–77.
- Kövecses, Zoltán. 2010. *Metaphor. A practical introduction*. Oxford: Oxford University Press.

- Lakoff, George. 1987. *Women, fire, and dangerous things. What categories reveal about the mind*. Chicago & London: University of Chicago Press.
- Lakoff, George & Johnson, Mark. 1980. *Metaphors we live by*. Chicago & London: University of Chicago Press.
- Lakoff, George & Turner, Mark. 1989. *More than cool reason: A field guide to poetic metaphor*. Chicago & London: University of Chicago Press.
- Lieber, Rochelle. 2004. *Morphology and Lexical Semantics*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511486296> (accessed 19 July 2022).
- Marantz, Alec. 1997. No escape from syntax. Don't try morphological analysis in the privacy of your own lexicon. In Alexis Dimitriadis & Laura Siegel (eds.), *University of Pennsylvania Working Papers in Linguistics*, 201–225. Philadelphia: University of Pennsylvania Department of Linguistics.
- Marantz, Alec. 2001. Words and things. Unpublished handout. https://babel.ucsc.edu/~hank/mrg.readings/Marantz_words.pdf (accessed 8 May 2022).
- Marchand, Hans. 1969. *The categories and types of present-day English word-formation. A synchronic-diachronic approach*. München: C.H. Beck'sche Verlagsbuchhandlung.
- Primus, Beatrice. 1999. *Cases and thematic roles – ergative, accusative and active*. Tübingen: Niemeyer. <https://doi.org/10.1515/9783110912463> (accessed 19 July 2022).
- Primus, Beatrice. 2012. *Semantische Rollen [Semantic roles]*. Heidelberg: Universitätsverlag Winter.
- Pustejovsky, James. 1996. *The Generative Lexicon*. 2nd edn. Cambridge, Mass.: MIT Press.
- Radden, Günter & René Dirven. 2007. *Cognitive English grammar*. Amsterdam & Philadelphia: Benjamins. <https://doi.org/10.1075/clip.2> (accessed 19 July 2022).
- Rimell, Laura. 2012. *Nominal roots as event predicates in English denominal conversion verbs*. New York: New York University PhD dissertation.
- Rauh, Gisa. 1988. *Tiefenkasus, thematische Relationen, Thetarollen. Die Entwicklung einer Theorie von semantischen Relationen*. Tübingen: Narr.
- Rosch, Eleanor, Carolyn B. Mervis, Wayne D. Gray, David M. Johnson & Penny Boyes-Braem. 1976. Basic objects in natural categories. *Cognitive Psychology* 8. 382–439.
- Ruiz de Mendoza Ibáñez, Francisco José & Lorena Pérez Hernández. 2001. Metonymy and the grammar. Motivation, constraints and interaction. *Language & Communication* 21. 321–357.
- Ruiz de Mendoza Ibáñez, Francisco José & Lorena Pérez Hernández. 2011. The contemporary theory of metaphor: Myths, developments and challenges. *Metaphor and Symbol* 26. 1–25. <https://doi.org/10.1080/10926488.2011.583189> (accessed 19 July 2022).

- Ruiz de Mendoza Ibáñez, Francisco José & Alicia Galera Masegosa. 2014. *Cognitive modeling. A linguistic perspective*. Amsterdam: Benjamins. <https://doi.org/10.1075/hcp.45> (accessed 19 July 2022).
- Sanders, Gerald. 1988. Zero derivation and the Overt Analogue Criterion. In Michael Hammond & Michael Noonan (eds.), *Theoretical morphology: Approaches in modern linguistics*, 155–175. San Diego: Academic Press, Inc.
- Schönefeld, Doris. 2005. Zero-derivation – functional change – metonymy. In Laurie Bauer & Salvador Valera (eds.), *Approaches to conversion/zero-derivation*, 125–155. Münster: Waxmann.
- Schönefeld, Doris. 2018. Friending someone into submission: Verbal cues for understanding. *Word Structure* 11(2). 211–237.
- Štekauer, Pavol. 1996. *A theory of conversion in English*. Frankfurt am Main: Peter Lang.
- Štekauer, Pavol. 2005. *Meaning predictability in word formation. Novel, context-free naming units*. Amsterdam: Benjamins. <https://doi.org/10.1075/sfsl.54> (accessed 19 July 2022).
- Štekauer, Pavol, Ana Díaz-Negrillo & Salvador Valera. 2011. Meaning predictability and conversion. *Folia Linguistica* (45)1. 165–198.
- Thomaßen, Helga. 2004. *Lexikalische Semantik des Italienischen. Eine Einführung* [Lexical semantics of Italian. An introduction]. Tübingen: Niemeyer.
- Valera, Salvador. 2015. Conversion. In Peter O. Müller, Ingeborg Ohnheiser, Susan Olsen & Franz Rainer (eds.), *Word-formation. An international handbook of the languages of Europe*. Volume 1, 322–339. Berlin & Boston: De Gruyter. <https://doi.org/10.1515/9783110246254> (accessed 19 July 2022).

Electronic Sources

- Davies, Mark. 2008–. The Corpus of Contemporary American English (COCA): 520 million words, 1990-present. <https://www.english-corpora.org/coca/> (accessed 19 July 2022).
- Davies, Mark. 2018–. The 14 Billion Word iWeb Corpus. <https://www.english-corpora.org/iWeb/> (accessed 19 July 2022).
- Davies, Mark. 2013. *Corpus of Global Web-Based English*. <https://www.english-corpora.org/glowbe/> (accessed 19 July 2022).
- Oxford English Dictionary*. <http://www.oed.com> (accessed 19 July 2022).

Dr. Heike Baeskow
 Goethe-Universität Frankfurt
 Institut für England- und Amerikastudien
 Norbert-Wollheim-Platz 1
 D – 60323 Frankfurt am Main
 baeskow@em.uni-frankfurt.de