

On a referent of the base noun in denominal interpretation

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Abstract: This paper investigates the metaphorical extension of denominal interpretation, in which events denoted by denominal verbs do not involve a referent of the base nouns (e.g. *Sue hammered the nail into the wall with her shoes*). This phenomenon is problematic for the view that denominal interpretation is attributable to a certain aspect of knowledge about nominal denotations (e.g., Clark and Clark’s (1979) *predominant features*) and especially for earlier syntax- or incorporation-based approaches (e.g., Hale and Keyser, 1993; Baker, 1988), which claim that the meanings of denominal verbs are essentially determined by their syntactic configurations. After briefly reviewing the diverse literature and discussing why derivational approaches are unworkable, we examine what factor may facilitate such a metaphorical extension. We then suggest that a frame-semantic approach (Michaelis and Hsiao, 2021; Okada, 2022a) is more promising for capturing the semantic flexibility of the base noun, arguing that base nouns themselves do not introduce event participants in the described event but rather merely evoke semantic frames defined as constellations of roles, each of which is syntactically realized by an argument structure.

Keywords: English denominal verbs, true/apparent denominal verbs, referent, linguistic innovation, frame semantics

1. Introduction

The process of noun-verb conversion is highly productive in English, as Michaelis and Hsiao (2021, p. 120) go so far to say that “perhaps no language owes as many of its verbs to the conversion strategy as English does.” The resulting verbs, traditionally known as denominal verbs, have been best studied from a semantic point of view, especially in relation to general knowledge as to the concepts denoted by the base nouns. However, the well-known phenomenon has not been fully elucidated in the pertinent literature so far: denominal verbs can denote events that do not necessarily involve a referent of the base noun. The denominal verb *hammer* in (1) is a classical example for this phenomenon:

- (1) a. Mary *hammered* the nail into the wall with a claw hammer.
- b. Sue *hammered* the nail into the wall with her shoes.
- c. Someone was *hammering* on the door.

(Baeskow, 2022, p.592)

In (1a) and (1b), the hitting events do not involve the entity denoted by the base noun *hammer*, though the sentences are perfectly interpretable while specifying the instruments used for pounding the nail with a hyponym and a “hammer-like” object respectively. By contrast, the event described in (1c) does not include even such an instrument, implying that the anonymous agent forcefully knocked on the door with the fist or knuckles.

This phenomenon constitutes the Achilles heel for syntax-based approaches to denominal verbs (e.g., Hale and Keyser, 1993; 2002; cf. Baker, 1988) or incorporation approaches, which assume a special kind of head movement, because the nouns and their verbal counterparts do not have meanings that exactly correspond to one another, as shown in (1). These approaches treat denominal verbs as the output of a syntactic derivation in which the base nouns are incorporated into the matrix verb at the level of Lexical syntax (L-syntax). Given this phenomenon, Kiparsky (1997, pp. 485-491, see also Nagano, 2008, pp. 99-102) proposes a distinction between true denominal verbs and pseudo-denominal

verbs: the former require some referent of the base noun to be present, thus being incompatible with certain instruments other than the denotatum of the base nouns, as shown in (2), while the latter do not necessarily entail using the things denoted by the base nouns, merely denoting a manner of motion, as shown in (3).

- (2) a. * She taped the picture to the wall with pushpins.
- b. * They chained the prisoner with a rope.
- (3) a. He hammered the desk with his shoe.
- b. He brushed his coat with his hand.

(Kiparsky, 1997, p. 489)

The second type of verbs are semantically attenuated and behave as basic verbs in that they lack the meanings of the base noun through lexicalization.

However, more recently, Baeskow (2022, pp. 593-596) observes that there are even well-established verbs whose “literal” meaning is preceded by a metaphorical meaning. Consider the following examples: (The year of first attestation is represented in the parenthesis)

- (4) a. An albatross, *helicoptering* over the masthead, signalled the land. (1926)
- b. He might be *helicoptering* up to Camp David. (1959)

(Baeskow, 2022, p. 595)

(4) shows that the verb *helicopter* is first attested with the metaphorical meaning “to fly as with a helicopter,” which reflects the manner of motion associated with the concept denoted by the base noun, while the expected literal meaning “to transport by helicopter” emerges thirty-three years later. Given this diachronic fact, Baeskow points out that it seems difficult to stipulate that there are denominal verbs which have undergone semantic “bleaching” (Kiparsky, 1997) and maintain the dual classification of true and apparent denominal verbs.

This study aims to discuss why this phenomenon may be troublesome for syntax-based approaches (Section 2). In addition, we will consider what factor may facilitate such a metaphorical extension by scrutinizing other examples from the Corpus of Contemporary American English (COCA) and iWeb (Sections 3). Specifically, based on Okada’s (2022a, 2022b, in press) proposal that the grammatical construction in which a base noun is embedded ultimately determines the kind of event or relation expressed by the denominal verb, especially in novel uses, it is predicted that there would be a certain constructional context that specifies the verbal category of the base and facilitates the metaphorical reading. Finally, we will argue that this seemingly counterintuitive fact turns out to be natural from a frame-semantic view (Fillmore, 1976, among others), suggesting that base nouns do not even introduce event participants but rather merely evoke semantic frames which provide constellations of roles instantiated by arguments of the denominal verb (Section 4).

2. Previous Studies

Although there is a substantial history to the idea of dealing with the potential absence of a referent of the base noun, the inherent problem may originate in how we view the properties of base noun denotations. In this respect, it is worth noting that Clark and Clark (1979, pp. 789-792) propose encyclopedic knowledge about the referents of base nouns or predominant features (qualia). According to them, predominant features are criterial properties defined from salient elements of knowledge concerning the noun referents, such as their physical characteristics (e.g., their shape), ontogeny (i.e., how an object is made or arises), and potential roles (e.g., their function). Moreover, they assume that interpretations of denominal verbs may directly reflect predominant features of their base nouns in a manner that follows the constraint, called the Innovative Denominal Verb Convention: (The term “parent noun” roughly corresponds to our “base noun”)

(5) The Innovative Denominal Verb Convention

In using an innovative denominal verb sincerely, the speaker means to denote

(a) the kind of situation

(b) that he has good reason to believe

- (c) *that on this occasion the listener can readily compute*
- (d) *uniquely*
- (e) *on the basis of their mutual knowledge*
- (f) *in such a way that the parent noun denotes one role in the situation, and the remaining surface arguments of the denominal verb denote other roles in the situation*
(Clark and Clark, 1979, p. 787, underline mine)

Note that the rule (f) is too strong to capture the relevant phenomenon: the referential character of the base noun may be so attenuated that a participant role of the same type as the base noun is realized by an oblique argument, as in (6).

- (6) a. She buttered her bread with apple butter.
- b. She shelved the books on the windowsill.

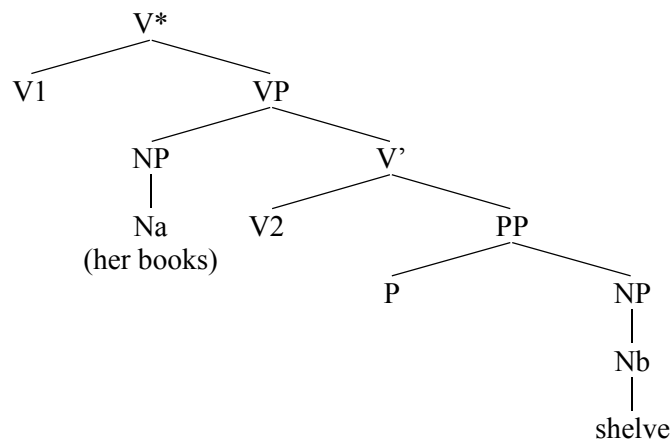
(Michaelis and Hsiao, 2021, p. 125)

Therefore, the relevant phenomenon seems problematic for the view that denominal interpretation is attributable to a certain aspect of knowledge about nominal denotations themselves. In fact, the same view on a base noun also prevails in syntax-based approaches.

Inspired by Baker’s (1988, Ch.3) work on noun incorporation, Hale and Keyser (1993, 1997, 2002) argue that the base nouns are generated as complements of a phonologically empty preposition corresponding to the overt locational prepositions (e.g., *on*, *in*, *with*) and cyclically moved to and incorporated into the matrix verb, bringing about a single location or locatum verb (e.g. *bottle*, *shelve/saddle*, *butter*). For example, (7a) is said to be derived from (7b): *shelve_V* is derived by incorporating *shelve_N* into P and then into V₂ and finally into V₁ with each step conforming to the Empty Category Principle, as indicated in (8) (cf. Hale and Keyser, 1997, p. 32): (The asterisk represents a maximal projection that does not include a specifier)

- (7) a. They shelved her books.
- b. They put her books on the shelves.

(8)



In this analysis, a natural conclusion to be drawn is that the incorporated noun leaves the trace in the complement position of P, which prohibits the overt instantiation of the incorporated constituent (e.g., * *She shelved her books on the shelf*). Therefore, the incorporation analysis is problematic in that the trace can be often overridden by an overt complement which may or may not be a hyponym of the base noun:

- (9) They shelved her books on a windowsill/ top of a bookcase.

Given this fact, Hale and Keyser (1997, pp. 41-44) stipulate that each denominal verb has two distinct components: “referential” and “adverbial” components. The former is what comes from the referent of the noun, whose index may be deleted from the chain defined by head movement. The latter is a

component that captures the manner of acting (e.g., the notion of placing items upright on something shelf-like). However, as pointed out by Goldberg (2006, pp. 206-210), this dichotomy is not helpful in that the “referential” component seems to play no role in synchronic syntactic derivation. More precisely, since the verb *shelve* is not supposed to be listed in the lexicon, the adverbial component is not attributable to the syntactic derivation, which cannot apply to peculiar interpretations of specific words but to each verb generally.

In light of Hale and Keyser’s (1997) “adverbial-increment” mystery, Kiparsky (1997), who proposes a lexical semantic approach that provides each semantic group of denominal converted verbs with a fixed semantic representation called LCS (Lexical Conceptual Structure), suggests that there are even non-derived verbs: denominal verbs include both “true” denominal verbs (e.g., *tape_v*, *chain_v* *button_v*), which contain the meaning of the noun, and pseudo-denominal verbs or underived verbs (e.g., *hammer_v*, *string_v*, *brush_v*) which are merely related to nouns via a shared root, actually denoting manner of motion. Following Kiparsky’s dual classification of denominal verbs, Naya (2014) proposes that denominal verbs which have undergone semantic bleaching used to be derived by attaching the null morpheme inserted via Syntactic Insertion in the sense of Emonds (2000), thereby resulting in compositional meanings, and are now listed in the Dictionary as basic verbs through lexicalization. Therefore, it depends on the level of insertion in a syntactic derivation whether a certain denominal verb accept the realization of the base noun hyponym by an oblique argument in the overt syntax. Similarly, Arad (2003), embedded in the framework of Distributed Morphology, distinguishes noun-derived verbs from root-derived verbs. Noun-derived verbs (e.g., *tape*, *chain*) depend in their interpretation on the noun from which they are derived since there must be a nominal projection intervening, whereas root-derived verbs (e.g., *hammer*, *shelve*) exhibit semantic flexibility.

By contrast, in the discussion of whether or not denominal verbs introduce discourse referents, Rimell (2012, p. 183) even argues that “all denominal verbs are essentially like Kiparsky’s bleached verbs” and that in the “literal” examples of denominal verbs, the existence of an event participant can be only implied by the denominal verb without being introduced as a participant. After all, denominal verbs cannot introduce discourse referents, as shown in (10).

- (10) Mary chained the chair to the wall. *It was heavy.
intended: ‘the chain was heavy’ (Rimell, 2012, p. 171)

Influenced by Rimell’s argument, Baeskow (2022) presents diachronic evidence that denies the lexicalization process of denominal verbs losing semantic transparency between the noun and the verbal counterpart (cf. “idiomatization” Clark and Clark, 1979, pp. 804-805):

- (11) a. An albatross, *helicoptering* over the masthead, signalled the land. (1926)
b. He might be *helicoptering* up to Camp David. (1959) (=4))
- (12) a. They [sc. the Taft men] assent..that they will ‘*steam roller*’ the Roosevelt contests with a vengeance. (1912)
b. To attempt to get through his poems in Classical Prosody is like trying to ride a bicycle over miles of newly-stoned road not yet *steam-rollered*. (1913) (Baeskow, 2022, p. 595)

In (11a) and (12a), the base noun referents play no role and are used merely as metaphors, resulting in the figurative meaning components “to fly as with a helicopter” and “to crush or break down, as with a steamroller” respectively. Interestingly enough, these extended meanings diachronically precede the “literal” meanings in (11b) and (12b) that involve the base noun referents.

This diachronic precedence relation is seemingly counterintuitive but particularly significant because the approaches discussed so far implicitly suggest that a base noun referent should usually play a certain role in the described situation, as reflected in (5f): one of major tenets of Innovative Denominal Verb Convention (Clark and Clark, 1979). If Baeskow’s observation can apply to many other denominal verbs, it is difficult to suppose that some denominal verbs have been semantically “bleached” and others have not. It is perhaps impossible and certainly beyond the scope of this paper to try to confirm this diachronic observation for all possible denominal verbs. Rather, it is worth examining in more detail possible factors that facilitate the metaphorical interpretation of denominal verbs.

3. The Role of Syntactic Contexts in Metaphorical Interpretation

My task now is to go on and show what factor may necessitate a metaphoric interpretation of denominal verbs. In this context, from a frame-semantic perspective, Okada (2022a; cf. 2022b) argues that when a denominal verb is metaphorically used, it becomes conceptually more dependent relative to the grammatical construction in which it is embedded, and that frame elements which the base noun evokes are more peripherally realized in the construction. Simply put, a metaphorically used denominal verb appears in a certain constructional context, which allows it to gain the combinatoric behavior characteristic of the construction. For example, the noun *helicopter* in (13) is embedded in the verbal slot of the caused motion construction (cf. Goldberg, 1995):

- (13) The thought of “helicoptering” my club into the pond crossed my mind.
 (Okada, in press, cf. https://www.conwaydailysun.com/outdoors/golf/courses/golf-column-avoid-the-eruption/article_6de5519a-ed69-11ea-85ab-2bb5967af15a.html)

The figurative denominal reading of ‘toss something vigorously into something’ in the sentence is not strictly derivable from the noun itself, though it is somewhat related to the shared knowledge of helicopters. Instead, this unpredictable/contextual meaning is attributable to the semantics of this entire construction as an independent form/meaning pairing.

Based on Okada’s argument, it is predicted that there is some tendency for a metaphorically used denominal verb to appear in a certain constructional slot intended for items belonging to the verbal category. Toward this end, I manually gathered data of the denominal verb *helicopter* up to 50 tokens at random from COCA and iWeb. Then, I sorted them based on their metaphorical or literal reading. The result is summarized in Table 1.

Table 1. The COCA and iWeb counts of the denominal verb *helicopter*

Types of Verbal Slots	Metaphorical	Literal
Simple transitive	1	
<i>be/get+Passive+to/into/from/up/onto</i>		23
Intransitive+ <i>in/to/down/over/up</i>		19
Intransitive+ <i>around</i>	4	1
Way construction		2

The figures unambiguously indicate that the metaphorical reading is far less common than the literal one. Furthermore, closer scrutiny reveals a very interesting fact: as far as our dataset is concerned, the literal meaning “to transport by helicopter” prefers the syntactic contexts, *be/get+Ved+to/into/from/up/onto* and $V_{intra}+in/to/down/over/up$, which may associate with the coarse-grained event like directed motion (x moves toward y). On the other hand, the metaphorical use of *helicopter_v* is exclusively constrained to the constructional context $V_{intra}+around$ (cf. Okada, 2022b), as in (14) below.

- (14) a. A hummingbird feeder, for instance, with hummingbirds *helicoptering* around it.
 (COCA)
 b. (...) be dawdling, or risk getting the stink eye from the new VP as he *helicopters* around the office. (iWeb)

The syntactic restriction of the metaphorical use can be explained by saying that the constructional context $V_{intra}+around$ selects a most suitable frame element (i.e., our knowledge of the manner of helicopters’ move) from the frame evoked by the base noun, just as the literal meaning is activated by the semantically similar constructional contexts. This semantic flexibility of denominal verbs and its tight connection with the syntactic pattern in which they are embedded should be discussed together in an account of the referent-missing phenomenon.

4. Implication

As indicated in section 2, given the potential option of metaphorical extension, it would be not effective to stipulate that there are denominal verbs which have undergone semantic bleaching or to maintain the dual classification of denominal verbs which undergo different derivational processes like derivation from nouns or roots. Along this line of reasoning, it is implied that literal examples of denominal verbs (e.g., *She shelved her books.*) which require the presence of a referent of the base noun are a rather marked usage of words pertaining to prototypical verbs (cf. Okada, in press), as they seem to introduce an event participant by means of referring to nominal roots.

The move we have just made is not unprecedented, but in line with at least both the typological classification of English (Talmy, 2000) and the categorial distinction between nouns and verbs (Baker, 2003). According to Talmy's (2000) typological classification, English is a manner-incorporating language, in which manner is expressed in the main verb and other semantic components like path are expressed by elements other than a verb, which Talmy calls satellites of the main verb. For example, in (15), the manner of motion is expressed in the main verb in boldface and the path is expressed by the italicized preposition.

- (15) The bottle **floated** *into* the cave.

Based on the typological characteristics of the verb in English, we may say that English (native) verbs themselves inherently denote a certain event together with an accompanying manner and other event participants should be realized by satellites such as directional PPs and particles.

Second, according to Baker (2003, Ch.3), what distinguishes nouns from verbs (and adjectives) is that they are the only lexical categories that bear a referential index and can be antecedents. Therefore, since nouns and verbs are mutually exclusive categories, a noun, once transformed into a verb, loses its distinctive nominal flavor (cf. "The Reference-Predication" Constraint (RPC), Baker, 2003, p. 165) and fails to introduce a referent into the discourse, as shown by the contrast in (16). This is also the case for denominal verbs, as shown in (17).

- (16) a. The solution became a crystal. It was two inches long ...
b. The solution crystalized. #It was two inches long ...

(Baker, 2003, p. 166)

- (17) Mary chained the chair to the wall. *It was heavy.

(=(10))

Accordingly, rather than stipulating that each denominal verb has an "adverbial" component and a "referential" component (Hale and Keyser, 1997), it is more reasonable to suppose that a base noun entirely loses its referential character not only in sentences like *She shelved her books on the windowsill*, but also in those like *She shelved her books*. In fact, even when *We shelved the books* is said, the assumption that the books were put on an actual shelf can be only an implication in that it is cancelable, as shown in (18).

- (18) We shelved the books. By that I mean we lined them up on the top of the file cabinet.

(Goldberg, 2006, p. 207n)

The alternative would be to say that the denominal verb formation is not utilizing the features of the base noun denotata like Clark and Clark's (1979) predominant features but exploiting frame-semantic networks evoked by base nouns (Michaelis and Hsiao, 2021, Okada, 2022a, cf. Fillmore, 1976). More precisely, the base noun itself does not denote any role as an event participant but evoke semantic frames that are defined as constellations of roles, each of which is syntactically realized by an argument structure. Once we look at a base noun through a frame-semantic lens rather than through a denotational one, the referent-missing phenomenon discussed so far is not surprising. For example, a certain way or manner accompanied by using an instrument (e.g., the manner of forcefully knocking in using a hammer) corresponds to an extra-thematic (non-core) frame element or "off-stage" information of the frame evoked by base nouns (e.g., *hammer*) (cf. Boas, 2003, Okada, 2022a), and other frame elements such as an agent (i.e., one who uses a hammer) and an instrument (i.e., hammer) correspond to core elements, which should be instantiated by the arguments of the denominal verb.

5. Concluding Remarks

To conclude, the semantic distance traversed by a noun in the course of becoming a verb seems rather great, as Hopper and Thompson (1985, p. 177), in their discussion of an asymmetry between nominalization and verbalization processes, state that “a nominalization names an event taken as an entity, but ‘verbalization’ does not name an ‘entity taken as an event,’ but rather simply names an event, associated with some entity.”

As an example, this paper has focused on the so-called referent-missing phenomenon that events denoted by denominal verbs do not involve a referent of the base nouns. After briefly reviewing some assumptions about this issue proposed in the literature, we showed that it is not reasonable to assume that the base noun referent itself may denote a certain role in denominal interpretation. This assumption, which may be widely acknowledged, has a denotational view of base nouns, according to which a noun refers to an entity and a verb to a property or a relation. Based on Okada’s (2022a, 2022b) proposal, we also observed that a metaphorically used denominal verb tends to appear in a verbal slot of a certain grammatical construction, which may facilitate a metaphorical reading while fixing its categorial status as a verb. These discussions suggested that we should look at a base noun through a frame-semantic lens rather than through a denotational one and that “literal” examples of denominal verbs, which seem to introduce a referent in the discourse, are a rather marked usage of words pertaining to native verbs in English. Of course, the markedness of literal examples of denominal verbs remains to be explained from a frame-semantic approach, but I leave this topic for future research (cf. Okada, in press).

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