Because German is a verb-second language with an SOV word order (e.g., Haider, 1985), particle verbs in German are decomposed whenever they occur in finite forms. Since the particle, which complements the meaning of the whole particle verb, must appear sentence final, it can be presented many words after the stem, as the following example of the base hören (‘hear’) demonstrates:

\[(1) \text{Der Junge hörte, nachdem er vergeblich um Eis gebettelt hatte, schließlich wieder auf/zu.}\]

(L: ‘Finally, the boy stopped/listened after having unsuccessfully cried for ice cream’).

Consequently, the meaning of the whole verb is fully understood only by the end of the sentence, when the particle is encountered. It is possible that German readers/listeners are therefore used to keeping more than one possible meaning of the verb active upon encountering a verb stem. The present study investigated (1) how particle verbs are stored and represented in lexical memory, (2) and whether the morphological activation of the stem cascades through to the semantic level.

To this end, we conducted two experiments with cross-modal priming, a paradigm that is typically used to tap into lexical processing (for a review see Smolka et al., 2014). In Experiment 1, 21 participants heard isolated complex verbs in isolation and made lexical decisions to visually presented base verbs (e.g., fallen, ‘fall’), see (2). Auditory primes were (a) semantically transparent particle verbs (whose meaning can be constructed from the meaning of particle and stem, e.g., hinfallen, ‘fall down’), (b) semantically opaque particle verbs (whose meaning cannot be constructed from the meaning of the particle and the stem, e.g., auffallen, ‘attract attention’), and (c) form-related controls (whose stem is phonologically related to the target, e.g., ausfalten, ‘fold out’).

Auditory prime: (a) hinfallen/b) auffallen/c) ausfalten – visual target: (2) fallen/(3) Sturz

Relative to the form controls, semantically transparent and opaque particle verb primes primed their base to the same extent. Equivalent morphological priming effects replicate previous findings (Smolka et al., 2009, 2014) that particle verbs undergo morphological decomposition regardless of their meaning composition. We conclude that particle verbs are lexically represented via their stem.

Experiment 2 tested whether the morphological access to the stem influences also the semantic level. In Experiment 2, 47 participants heard the same primes as in Experiment 1
(i.e., semantically transparent and opaque particle verbs and form controls) and made lexical decisions to visually presented associations to the stem, see (3) – these associations were previously collected in a web experiment, with 105 participants. Results showed that neither semantically transparent nor opaque verbs induced priming to the stem associations (relative to form controls). These findings indicate that the previously observed morphological effects do not extend to a semantic level. That is, the previous decomposition of the stem does not activate its meaning.

In sum, the present findings indicate that German particle verbs are lexically represented via their stem. This may be a characteristic of particle verbs in a verb-second language, where particles are separated from the stem in finite forms. Nevertheless, even though the stem represents the lexical level, its meaning is not automatically cascaded to the semantic level (or is inhibited by the meaning of the particle verb). This latter finding corresponds to previous findings (with prefix verbs) in languages other than verb-second with SOV word order. We will discuss present models of lexical representation and meaning representation with respect to particle verbs in German.