

Semelfactives

1 Introduction

Semelfactives refer to short eventualities (states of affairs) that do not introduce a change of state, e.g., *flash*, *knock*, or *nudge*. They are used to refer to singleton eventualities or to a whole *iteration* of such eventualities, e.g., when they occur in the progressive.

This paper discusses whether the iterative use of semelfactives is part of their lexical meaning or the result of aspectual coercion. If the singleton interpretation were basic, the iterative interpretation could emerge through *aspectual coercion*, which introduces an iterative operator between a semelfactive and an aspectual operator that applies to it to avoid an incumbent aspectual mismatch (Moens and Steedman 1988; Egg 2005).

But if the iterative interpretation of semelfactives is basic, the singleton interpretation emerges as a fringe case, in which the iteration consists of only one single eventuality (Rothstein 2004). In that case, the two uses of semelfactives would be neither a case of ambiguity nor of aspectual coercion but would emerge through a context-dependent specification of an underspecified lexical meaning. In this paper, I will argue for the first interpretation of semelfactives.

2 Properties of semelfactives

The semantics of semelfactives includes reference to very short *eventualities* which are *maximal* w.r.t. a proposition p . These eventualities are defined by an operator MAX (Löbner 1989, adapted):

$$(1) \quad \forall p \forall e. \text{MAX}(p)(e) \leftrightarrow p(e) \wedge \neg \exists e'. e \sqsubset e' \wedge p(e')$$

We can model the singleton interpretation of semelfactives with such maximal eventualities, e.g., for *flash*, $\lambda x \lambda e. \text{MAX}(\text{shine}'(x))(e)$. If this is the lexical meaning of semelfactives, they are punctual and bounded (introduce inherent boundaries), i.e., *achievements* in Vendler's (1967) classification. Their classification as 'points' in Moens and Steedman (1988) highlights the fact that they introduce no change of state. Rothstein (2004) points out that the characterisation as 'punctual' is not fully adequate, however, this instantiates general problems for an aspectual feature of 'punctuality', see Egg (2005).

But if the iterative interpretation is the basic one, semelfactives are *activity* predicates like *move*, *dance*, or *sing*, which are unbounded but not fully divisive (closed under a part-of relation) (Rothstein 2004). In this case, the MAX operator of (1) would be embedded under an iterative operator ITER as defined in (2), e.g., $\lambda x \lambda e. \text{ITER}(\text{MAX}(\text{shine}'(x)))(e)$ for *flash*.

$$(2) \quad \forall p \forall e. \text{ITER}(p)(e) \leftrightarrow \exists E. e = \bigcup E \wedge \forall e'. e' \in E \rightarrow p(e')$$

In (2), " $\bigcup E$ " refers to a suitable minimal eventuality that contains the subeventualities of the iteration set E and is (at least temporarily) uninterrupted. The uninterruptedness is motivated by the fact that when we measure the length of an iteration, the breaks between the subeventualities are taken into account, too. E.g., if one plays the Moonlight Sonata every day in June, one plays it (iteratively) for 30 days, not for 7.5 hours (one single performance lasts approximately 15 minutes).

3 Semelfactives as activity predicates?

Rothstein classifies semelfactives as activity predicates, arguing that they share the property of iterativity with prototypical activity predicates (PAP) (e.g., *move* is an iteration of minimal changes of location). They differ in that only semelfactives have conceptually salient non-overlapping minimal events, called *naturally atomic*. Minimal events of PAP lack these properties. Hence, following Rothstein, only minimal eventualities of semelfactives are lexically accessible, e.g., countable: (3a) can refer to five single knocks but (3b) cannot refer to five minimal changes of location.

$$(3) \quad (a) \text{ Amélie knocked five times. } (b) \text{ Amélie moved five times. }$$

Semelfactives and PAP are both *cumulative*: p is cumulative iff two adjacent p -eventualities sum up to another p -eventuality. E.g., two adjacent movement eventualities sum up to a third movement eventuality. Semelfactives emerge as cumulative only if one assumes that their semantics comprises an iterative operator even in the singleton interpretation. Since they do not introduce a change of state, the minimal eventualities in such an iteration can be adjacent.

However, this analysis has problems. First, some PAP like *walk* do have minimal nonoverlapping eventualities in their extension (in this case, a single step), but these eventualities are not accessible, e.g., *walk five times* refers to five iterations of taking steps, not to one single iteration with 5 steps. The same holds for lexicalised iteratives in the activity class, including *tremble* and *wobble*, which clearly have minimal eventualities (roughly, specific back and forth movements), still, *tremble five times* refers to five iterations of such movements only. This is in marked contrast to the interpretation possibilities of the semelfactive (3a). Even worse, in the case of *stir* minimal eventualities overlap (any completed round of 360 degrees would qualify), but are accessible nevertheless (e.g., in *stir five times*). In sum, natural atomicity is independent of lexical accessibility.

4 Iterative uses of semelfactives through semantic construction and coercion

My claim is that iterative uses of semelfactives are based on the singleton interpretation like in (1), which constitutes their lexical contribution. Iterativity only comes in through further processes of semantic construction and aspectual coercion.

In particular, frequency adverbials are very similar to the iterative operator ITER in (2), they additionally specify the cardinality of the number of iterations, e.g., for *five times*:

$$(4) \quad \lambda p \lambda e \exists E. |E| = 5 \wedge e = \bigcup E \wedge \forall e'. e' \in E \rightarrow p(e')$$

Thus, the accessibility effect for the minimal events in *flash five times* or any other combination of a semelfactive with a frequency adverbial emerges through semantic composition (using the singleton interpretation as lexical semantics of semelfactives), which yields (5) for *flash five times*:

$$(5) \quad \lambda x \lambda e \exists E. |E| = 5 \wedge e = \bigcup E \wedge \forall e'. e' \in E \rightarrow \text{MAX}(\text{shine}'(x))(e')$$

If an operator selecting for an unbounded argument (e.g., the progressive or durative adverbials) is applied to a (bounded) semelfactive, insertion of the operator ITER prevents an violation of the selection restriction. ITER applies easily to semelfactives, because they are conceptually prone to iteration as they introduce no change of state, i.e., their pre- and poststate are identical.

Lexical and coercive iteration are independent of each other, thus, can coexist, which is illustrated by interpretation (6b) of (3a) in the sense that Amélie performed five iterations (with an unknown number of repetitions each) of knocks (apart from the uncoerced interpretation in which there is one single iteration of five knocks (6a):

$$(6) \quad (a) \quad \lambda e \exists E. |E| = 5 \wedge e = \bigcup E \wedge \forall e'. e' \in E \rightarrow \text{knock}'(\mathbf{a})(e') \\ (b) \quad \lambda e \exists E. |E| = 5 \wedge e = \bigcup E \wedge \forall e'. e' \in E \rightarrow \text{ITER}(\text{knock}'(\mathbf{a}))(e')$$

Subeventualities of the iterations in *tremble* and other lexicalised iteratives cannot be counted (only iterations of such iterations can) because the iterative operator is already part of their semantics. Therefore, *tremble five times* only has an interpretation in analogy to (6b), but not (6a).

In sum, semelfactives cannot be analysed as iterative activity verbs, their iterative use is either due to processes of lexical construction or to aspectual coercion.

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