The lexical semantics of unergative verbs: primitive predicates, roots and ontological types

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Introduction

Lexical semantic studies have assumed that unergatives are manner verbs (Rappaport Hovav and Levin 1998; Grimshaw 2005, among others):

> **v: [X ACT $_{<MANNER>}$]**
> **dance: [X ACT $_{<DANCE>}$]**

However, works on a syntactic perspective have provided evidence that unergatives have a structure where a light verb *do* has the verb's root as its argument (Hale and Keyser 2002; Harley 2005).

Levin and Rappaport Hovav (2005, p. 77) themselves say that

> "In our event structure for an activity verb, a primitive predicate ACT is modified by a manner root, [...] an analysis which contrasts with Hale and Keyser's (1993, 2002) analysis of comparable verbs, which treats the root as the argument of a predicate DO, roughly comparable to ACT, as in [x DO <JOG>]. [...] We do not choose between approaches here, since additional investigation into the representation of such verbs is needed."

And Rappaport Hovav (2017, p. 82) argues that

> "If result roots are predicates of states, it is reasonable to assume that manner roots are those that cannot be interpreted as predicates of states. I take them to be basically predicates of events."

Based on these arguments, we raise the hypothesis that the lexical semantic structure of unergative verbs, in terms of a predicate decomposition template, is more accurately represented by a primitive predicate DO, which takes a variable and the verb's root as arguments (Ross , 1972), as also proposed in Mateu (2000) for the verb *climb*:

> **v: [X DO <EVENT>]**
> **dance: [X DO <DANÇA>]**

In addition to the syntactic evidence already presented in the literature, we gather semantic cues for our hypothesis. We take examples from English (from the authors cited) and from Brazilian Portuguese (BP) (our native language).

Evidence in support of a DO analysis of unergatives

1. Harley's (2005) analysis of the semelfactive unergatives

Unergatives have distinct aspectual properties, being classified as activities or as semelfactives.

	Activities	Semelfactives
English	dance, run, swim	hop, cough, sneeze
BP	dançar, correr, nadar	pular, tossir, espirrar

Harley (2005) proposes that the ontological category of the roots of unergatives is "event", and not "manner". Events can be bounded or unbounded, differently from manners. She explains this distinction in aspectual behavior attributing telicity to the bounded or unbounded nature of the *event* root, incorporated to the primitive predicate in the complement position (not in adjunct position, the so called "manner incorporation"). The telicity of the verb derives from the ontological category of the root, and whether the root denotes a bounded or unbounded entity.

Event	Unbounded root/Activities	Bounded root/Semelfactives
a dance, a run, a swim dança, corrida, nado	dance, run, swim dançar, correr, nadar	-
a hop, a cough, a sneeze pulo, tosse, espirro	-	hop, cough, sneeze pular, tossir, espirrar

2. Jackendoff's (1990) analysis of cognate arguments

Unergatives are intransitive verbs which take a cognate direct object.

Verb	Intransitive sentence	Cognate object sentence
Dançar 'dance'	A Dani dançava.	A Dani dançou a dança do ventre.
Correr 'run'	O atleta corria.	O atleta correu uma corrida perfeita.
Nadar 'swim'	A Bárbara nadava.	A Bárbara nadava nado borboleta.
Pular 'hop'	O menino pulava.	O menino pulou um pulo alto.
Tossir 'cough'	O bebê tossia.	O bebê tossiu uma tosse seca.
Espirrar 'sneeze'	A menina espirrava.	A menina espirrou um espirro feio.

Jackendoff (1990) argues that cognate phrases specify components of the verbs' meaning. Thus, if cognate objects with unergatives specify an event (Harley 2005), then, there must be an eventive semantic component in the meaning of these verbs. Evidence that these objects denote events is the fact that they occur as subject of *durar* 'last' (Moens and Steedman 1988), and only events (as opposed to manners) can last in time: *a dança do ventre durou horas* 'the belly dance lasted for hours'.

3. *Possible paraphrases (Pinker 1989, Hale and Keyser 2002, Harley 2005)*

The possible paraphrase for unergative verbs favors a DO analysis. Lexical semanticists often use paraphrases in order to find out what meaning components are inside a given verb. Change of state verbs can be paraphrased with the structure *become state* (*break/became broken*), which reflects the lexical semantic structure: [Y BECOME <*STATE/BROKEN*>]. Pinker (1989), Hale and Keyser (2002), and Harley (2005) propose that unergatives such as *dance* are more adequately paraphrased by structures such as *do a dance*. In BP, the same holds:

Dançar/dance	**Fazer uma dança/do a dance**
Correr/run	**Dar ou fazer uma corrida/do a run**
Nadar/swim	**Fazer um nado/do a swim**
Pular/hop	**Dar um pulo/do a hop**
Tossir/cough	**Dar uma tosse/do a cough**
Espirrar/sneeze	**Dar um espirro/do a sneeze**

Interestingly, a paraphrase with the verb *act* and a manner modification is not possible: *ela dançou* 'she danced'/??*ela agiu dançando*/'she acted dancing'.

The nature of the event root

We assume, following Harley (2005), that the category *event* is in direct opposition to the categories *state* and *thing*, and can be defined by aspectual properties. As Rappaport Hovav (2017) points out, a manner can be inserted into an event. Thus, manner interpretations are possible with *event* root verbs, although the configuration of the lexical argument structure is one where a primitive predicate takes an *event* root as argument. In BP, a vast study of the verbal lexicon (Cançado et al. 2017), which analyzed over 1300 verbs in 13 classes, could not find conclusive evidence of the existence of *manner* roots in that language. However, many properties of the verbs evidence the existence of *event* roots. If we take a look at the language's nouns we will find words denoting events, states or things, but not manners (which generally require PPs or adverbs). Assuming that all verbs are formed by primitive predicates and roots, and that roots are ontologically classified (Rappaport Hovav and Levin 1998), since we have *state* and *thing* roots, it is highly probable that we also have *event* roots. More studies on the nature of these roots are still required.

Final words

We conclude that the unergative verbs' lexical semantics is more accurately represented by the structure [X DO <*EVENT*>]. Although many syntactic studies already assume this kind of perspective for unergatives, lexical semanticists continue to assume a *manner* analysis for these verbs (eg. Rappaport Hovav and Levin 2010, Wunderlich 2012, Beavers and Koontz-Garboden 2012, Levin 2015, among others). The contribution we expect to offer with this work is an analysis matching the semantics and the syntax of the argument structure of these verbs (Cançado and Godoy 2013). Mateu (2000) claims that lexical syntactic argument structures (as Hale and Keyser's) can be argued to be directly associated with semantic structures. For that, a verb's syntactic and semantic lexical structures must be correspondent.

See the list of BP unergative (and other) verbs at www.letras.ufmg.br/verboweb.

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