

# Breaking events: semantic categorization of action concepts in English and Italian

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In this study, we focus on the conceptual domain of breaking events. Using a corpus-based approach we aim to investigate how this domain is linguistically categorized by action verbs in English and Italian. In our analysis, we focus on the semantic patterns that constrain the cognitive segmentation and linguistic representation of the action and abstract space.

**Keywords:** action verbs, breaking events, conceptual metaphors

## 1 Background

The conceptual domain of breaking events houses a broad but well-identifiable set of actions involving a modification (with or without separation) in the material integrity of objects. The constant research interest in this semantic domain (Pye 1996; Majid et al. 2008; Goddard & Wierzbicka 2009; Fuji, Radetzky, and Sweetser 2013, Viberg 2020) has been mainly motivated by the central status that breaking events holds in human cognition and human categorization ability. Majid and colleagues (Majid et al. 2007; Majid et al. 2008) stress that the way breaking events manifest through language is strongly dependent both on cultural and environmental factors, resulting in different extension patterns across languages. However, the way these events are semantically and linguistically categorized by the different action verbs within a single language (i.e., English and Italian) is not self-evident. What are the conceptual and semantic boundaries between breaking, crushing, and cracking events? How do their divergences affect their metaphorical potential? Are the metaphorical extensions revealing of the boundaries through which the breaking domain is categorized?

## 2 Aim of the study

The study focuses on a subset of breaking events as referred to by action verbs to investigate the semantic categorization in Italian and English in their concrete and abstract uses. We aim to show how Italian and English categorize different types of breaking events and how these languages coherently make use of specific action patterns (i.e., reversible vs not reversible opening; clean vs messy separation; loss of integrity of flexible vs rigid objects, etc.) to linguistically express abstract concepts. In particular, by way of comparing concrete and metaphorical uses, we aim at making explicit the semantic patterns that give rise to the conceptual categorization underlying

the domain of breaking events. As an example, let us consider breaking events of not reversible opening:

- (1)
  - a. Mary **cracks** the nut
  - b. Mary **cracks** the egg
- (2)
  - a. Mary **schiaccia** la noce
  - b. Mary **rompe** l'uovo

Examples show that while the English *crack* covers both the action events in (1), the Italian partially homologue *schiacciare* can be applied to (2a) but not to (2b). We suppose that this phenomenon may depend on the different semantic patterns implicitly encoded by the two verbs. English *crack* seems to focus on how an object is modified to access its content, whereas Italian *schiacciare* on the type of force applied to the object itself.

### 3 Data and Annotation

Our analysis focuses on a cohesive group of six English and six Italian action verbs selected using the Imagact Ontology (Moneglia et al. 2012). We first selected the action scenes tagged with the English *break* and the equivalent Italian *rompere*, then extracted verbs that shared an action scene with them. The final selection included *break, bust, crush, crack, smash, snap* for English and *rompere, schiacciare, spezzare, spaccare, sfasciare, sfondare* for Italian<sup>1</sup>. Our analysis consisted of 500 occurrences per verb randomly sampled from two corpora (English: enTenTen2015; Italian: itTenTen2016). The annotation was conducted manually by one annotator per language, cross-checking annotation coherence within language and between annotators. The procedure was structured as follows (Panunzi & Vernillo 2019): (i) distinction between concrete and metaphorical uses; (ii) concrete uses were mapped onto Imagact scenes; (iii) metaphorical uses were referenced to conceptual metaphors (Lakoff et al. 1991).

### 4 Preliminary results

Results show that abstract occurrences extend in coherence with the concrete usage. The metaphors identified in the data make explicit the salient semantic patterns and foci for each of the verbs analysed. To return to the previous example (Section 2), we found that the semantic difference between *crack* and *schiacciare* is systematically preserved in these verbs' metaphorical extensions and directly constrains the type of abstract concepts that *crack* and *schiacciare* may refer to in English and Italian. Coherently with

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<sup>1</sup> Respectively translated as: 'break', 'crush', 'snap/crack', 'smash/split', 'smash', 'break through'.

its action patterns and similarly to the English *crush*, the verb *schacciare* extends to metaphors in which the concept of force is key to the abstract representations (CAUSES ARE FORCES):

- (3) I giovani europei sono **schacciati** dalla recessione  
'Young Europeans are **crushed** by recession'
- (4) Our entire economy is being **crushed** by the dead weight of officialdom  
'L'intero assetto economico è **schacciato** dal peso morto della burocrazia'

Vice versa, as examples (5-6) show, the verb *crack* extends to metaphors denoting the concept of access to content (SOLVING A PROBLEM INVOLVES OPENING AN OBJECT) through the material destruction of the container:

- (5) She attempts to **crack** a case of murder and a mysterious kidnapping
- (6) That's a hard nut to **crack**

The non-applicability of *schacciare* (5-6) confirms that the pattern of not reversible opening is only salient in *crack* and allows us to draw a clear conceptual and semantic boundary between these verbs and the type of breaking events they refer to.

This annotation procedure, applied to the two sets of English and Italian verbs, together with the metaphor identification and cross-linguistic comparison, provided valuable insight into semantic categorization processes at work with verbs in the breaking domain.

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