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TESI DI LAUREA

Italian VerbNet:

A Construction-based Approach to Italian Verb Classification

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You shall know a word by the company it keeps (Firth, 1957)

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Introduction

In this thesis we present a preliminary attempt to a VerbNet-like distribution-based classification for Italian, built on both syntactic and semantic grounds. That is, we followed a long-standing tradition of linguistic inquiry that considers meaning and argument structures of verbs to be correlated: from the examination of verbs that occur in the same syntactic patterns, it is possible to group clusters of verbs with similar syntactic behavior and shared meaning components.

Research on cross-linguistic verb classifications grounded in the syntax-semantics interface, following the model of Levin (1993) and VerbNet (Kipper-Schuler, 2005), gained much prominence in the scientific community in the last twenty years. For Italian, however, besides Merlo et al. (2002) no significative attempt in this direction had been made. Therefore, our aim was to structure a reliable, comprehensive and coherent method for the creation of Italian verb classes based on both syntactic and semantic grounds. Thus, in our system a verb class will include members that share similar constructions and that are referable to the same semantic frame (i.e., they profile the same type of event).

Before an accurate analysis of the theoretical framework, the method and our results is provided, it is important to stress the difference between conceptual or semantic frame and semantic field: the first refer to the general template of the event described by the verb, while the latter concerns the root (see chapter 2 for a discussion on the distinction between root and template). In other words, our semantic characterization of verbs does not consider the semantic field of a given verb

root, but the template of the evoked general event. E.g., in our classification the verb *ricoverare* (“to admit”) is listed under the VERBS OF PUTTING class, IMBUSTARE subclass, because it profiles a general event in which an Agent puts a Theme in a closed location. If this verb would have been classified according to its semantic field of reference, it would have been included in a class together with concepts such as “hospital”, “disease”, “doctor”, etc. This is due to the fact that our approach is not “purely” semantic, but interconnects syntax with verb meaning.

We propose here the result of our research, that is a first set of Italian verb classes, which are compatible with the English Levin/VerbNet model, but that implement the original with constructionism and frame semantics (see chapter 1 for further discussion). The fundamental character of the classification we propose is, in fact, that it is autonomous and independent from the English model, which was integrated with other theoretical frameworks and resources, like FrameNet (Baker et al. 1998) and ValPal (Hartmann et al. 2013). Another important innovation in the system we propose is a prototype-like structure of the classes, with a group of “core” elements, i.e. verbs that share all the characteristics both syntactic and semantic of the general class, and fuzzy boundaries of less prototypical members.

In short, this thesis represents a first attempt to provide a coherent syntactic-semantic classification for Italian verbs, critically based on the model of Levin/VerbNet, but implemented with new insights from the literature and various online resources.

The present work is organized as follows. In Chapter 1 we provide an overview on different approaches and a concise review of the existing literature on verb classes from the mid 60s to the present day. In this general overview, we single out and describe more thoroughly the extremely important work of Levin (1993) and the extensions that were made to her classification; we describe the online resources of VerbNet and of FrameNet and we provide a comparison between the two. We also briefly outline what argument alternations are, their importance and the new constructionist frames which downplay their role and consider the variants as distinct structures.

In Chapter 2 we present the core element of the research: the working method we constructed, and the resources that were employed. We outline the structure of our verb classes, describing in depth each constitutive element and providing an example with the case study of KILL verbs.

In Chapter 3 we give a descriptive analysis of our classes. All the classes that were analyzed are listed, provided with a comment that highlights the characteristics, the differences from the English model, the idiosyncrasies of each class and subclass and analyses of specific verbs.

One last important note to underline is the preliminary nature of our research; we only concentrated on a few verb classes (and only on transitive verbs), and is clear that much additional work and refinement will be required for a complete understanding of Italian verb classes.

These necessary premises notwithstanding, we hope that this study will stimulate further research on classifying Italian verbs. We strongly believe that this classification, and the method that was adopted to develop it, can be used as a reliable basis for further implementation of an Italian taxonomy of verbs.

CHAPTER 1: VERB CLASSES: a state of the art

This thesis presents the results of our research on Italian verb classes. As already discussed in the Introduction (see above), our approach lies at the interface of syntax and semantics: that is, verb classes are understood as sets of verbs - or better of distinct senses of verbs- that share common argument realization patterns (i.e., they share the same constructions) and that profile the same template of event (i.e., they evoke the same conceptual frame).

However, before discussing in depth the theoretical frameworks and the theories on argument structure that we adopted, we will first briefly outline other approaches on verb semantics and argument structure.

1. SYNTACTIC-SEMANTIC INTERFACE AND ARGUMENT STRUCTURE

The argument structure of a verb is defined as the lexical information about the arguments of a predicate and their semantic and syntactic properties; more specifically, the information on how semantic properties of verbs relate to the overt expression of arguments and predicates.

"Argument structure is an interface between the semantics and syntax of predicators (which we may take to be verbs in the general case) (...) Argument structure encodes lexical information about the number of arguments, their syntactic type, and their hierarchical organization necessary for the mapping to syntactic structure."

[from: Bresnan, 2001:304]

However, what sets apart different theories and frameworks is how this structure is represented in language. Different theories have been elaborated on the argument structure of verbs. In particular, it can be viewed as a syntactic or semantic phenomenon. Syntactic approaches are typical of the Generative framework (e.g. Chomsky, 1965, 1981; Williams, 1981; Grimshaw, 1990; Hale & Keyser, 2002).

In Government and Binding Theory (Chomsky, 1981), argument structure is typically viewed as hierarchically represented: “argument structure is a structured representation which represents prominence relations among arguments”(Grimshaw, 1990:4) (e.g. Williams 1981, Marantz 1984, Belletti & Rizzi 1988, Grimshaw 1990, Wechsler 1995). Each argument is associated with a θ -role (theta-role), a formal device that is used to represent the argument structure required syntactically by a particular verb (Theta theory). This concept, that is, is purely syntactic in nature. Theta roles are stored in a verb's theta-grid, i.e. the lexical specification of the thematic properties of a predicate. “The initial syntactic representations are literally built on the basis of the thematic representations stored in the lexicon (θ -GRIDS).” (Belletti & Rizzi, 1988: 291) The correspondence between theta grids and sentences is accomplished by means of the Theta Criterion, which describes the match between arguments and theta roles. In Williams (1981) the theta-grid was conceptualized as an unordered list of theta-roles; however, Grimshaw (1990) equated it to argument structure, which is defined on purely semantic grounds. Theta theory and the notion

of theta roles are however limited to the Chomskyan versions of Generative grammar and to Lexical-Functional Grammar (see Falk, 2001 and Bresnan, 2001)¹.

Many other theories of argument realization, e.g. Simpler Syntax (Culicover & Jackendoff, 2005) and construction grammar (Goldberg, 1995), eschew theta roles as a representative device, as they adopt a semantic approach on argument structure (e.g. Pustejovsky, 1995). In other words, arguments are not viewed as obligatorily filled syntactic slots, but rather as the participants of the event denoted by a given verb.

It is precisely on those types of approaches that our system of verb classes is constructed: lexical semantics is considered crucial in influencing the syntactic behavior of a verb. By examining those syntactic behavioral patterns, it is possible to build semantically homogeneous classes of verbs. In the next sections of this chapter we will discuss our theoretical background and our approach to verb classification.

2. CLASSES OF VERBS

Verb behavior has always attracted great interest: verbs semantics and syntactic realization are at the center of a debate that goes on since Plato. Modern linguistics has taken a deep interest in the study of verbs and, in particular, in the last 40 years a new line of investigation has developed, since the pioneering work of

¹ Lexical-functional grammar (LFG) is a theory of grammar which is very similar to Chomskyan approaches in implementing theta-roles.

Charles Fillmore in the 1960s and 1970s, i.e. the clustering of verbs into coherent classes (see for example Fillmore, 1968; 1970).

A class of verbs can hence be roughly described as a group of verbs sharing some common properties, or more precisely as “sets of semantically-related verbs sharing a range of linguistic properties, such as the possible realizations of their arguments and the particular interpretation associated with each possible argument realization.” (Levin, 2013: 1)

In fact, it has been recognized that verbs that share common semantic features can be grouped on the basis of their regular syntactic patterns of argument realizations. It is therefore possible to define various and different classes of verbs in terms of shared meaning components and similar syntactic behavior.

Understanding how verbs can be grouped and what is precisely the status of the resultant verb classes has been a major goal of many scholars, operating in different research fields and from different approaches (lexical semantics, computational linguistics, cognitive sciences etc.). In fact, verb classes are extremely useful for their ability to capture generalizations about a range of properties both within a given language and cross-linguistically.

A very large literature on verb classification is now available, and it could easily be said that “the term that best describes the current research on verb classes is ‘embarrassment of richness’.” (Lenci, 2014:17) However, all the different approaches to verb classification share the basic assumption that verbs are to be

classified based on some common feature (syntactic or semantic), which reflects more basic elements of meaning.

This chapter will provide an overview of the different theoretical frameworks which we considered and used to build a classification of Italian verbs. We will start by defining what a verb class is and how it has been treated in the literature (1.1). Then, we will turn to the most influential work of verb classification for English Verbs, Levin's 1993 *English Verb Classes and Alternations (A Preliminary Study)* and to its continuations (1.2, 1.2.1). Section 1.3 deals with VerbNet, an online verb lexicon based on Levin (1993). The last part of the chapter will be dedicated to the revision of the literature on those aspect of verb classification that have played a major role in our research but that are not typical of a Levin/VerbNet approach. In particular, we will concentrate on constructionist approaches and on the Frame Semantics point of view on verb classification.

Since both Levin and VerbNet classify verbs according to their ability to appear in syntactic alternations, in section 1.4 the concept of argument alternations and the alternative accounts of this phenomenon will be revised; those will be of crucial importance for our classification. Finally, we will describe FrameNet and frame semantics (1.5), which were used as a semantic reference for our classes (see next chapters).

3. THE IMPORTANCE OF VERB CLASSES

Fillmore's seminal work "The Grammar of Hitting and Breaking" (1970) can be considered the first attempt to describe verbs semantics in terms of class membership. Fillmore was the first to recognize the crucial importance of verb classes for many and different purposes: since then, homogenous classes of verbs have been considered useful devices for capture patterns of shared verb behavior, investigate the verb lexicon and identify grammatically relevant elements of meaning.

In Fillmore (1970), the author focuses on the two verbs of the title (*break* and *hit*), and proves that, even if they share a intuitive and basic meaning, they do not behave in a similar syntactic fashion:

- (1) a. *The stick broke.*
b. **The tree hit.*

[Fillmore, 1970: 126-128]

They can both be "characterized as agent-act-on-patient verbs" (Levin & Rappaport Hovav, 2005: 1), nevertheless *break* and *hit* show very dissimilar syntactic behavior. For example, in (1a) and (1b) it is shown that *break* allows the inchoative construction (or causative-inchoative alternation, see below) while *hit* does not.

This difference in the allowed syntactic patterns of the two verbs is attributed by Fillmore to the fact that they represent larger classes that include other similar verbs that show the same syntactic realizations:

- a. Break verbs: *bend, fold, shatter, crack...*
b. Hit verbs: *slap, strike, bump, stroke...*

[Fillmore, 1970: 130]

The difference between *break* and *hit* and its paradigmatic importance in explaining features of verb's meaning and behavior has been developed further in the following years.

Levin, for example, used the two verbs (and corresponding verb classes) to show the manner-result complementarity (see below): "Breaking verbs are change of state verbs, describing a change of state in an entity. In contrast, hitting verbs are surface contact verbs, describing often forceful contact with an entity, without entailing a change in its state." (Levin, 2013: 2).

Since Fillmore's paper, much research on verb classifications grounded in the verbs' ability to take part in certain syntactic patterns has been done. Understanding how verbs can be grouped in lexical-semantic classes has attracted great interest in many related fields such as lexical semantics, computational linguistics, cognitive sciences, etc. (see Pinker, 1989; Jackendoff, 1990; Levin, 1993; Dorr, 1997; Dang et al., 1998; Merlo and Stevenson, 2001). In fact, as Fillmore had already predicted in 1970, semantically coherent verb classes are a useful device for capturing many and various generalizations over a vast range of properties, both within a given language and cross-linguistically, and can therefore be used as a valuable means of inquiry.

Several classifications are now available for English verbs (e.g.: Pinker, 1989; Jackendoff, 1990; Levin, 1993;). The largest and the most widely renown for English is the classification by Levin (1993), a seminal study on verb classes based on *argument alternations* (see below).

Several online lexicons were built on the basis of various approaches to words (and specifically verbs) classifications; these resources, as the research projects from where they stem, are mostly done for English, e.g.: *WordNet* (Miller, 1995; Fellbaum, 1998), *VerbNet* (Kipper-Schuler 2005), *FrameNet* (Fillmore et al., 2003).

Other languages as well followed tried to adapt the English taxonomies, for example the different semantic classifications of *Italian WordNet* (Pianta et al., 2002) and *ItalWordNet* (Roventini et al. 2000), or *Simple's* verb classes (Lenci et al., 2000), which is partly inspired to the Generative Lexicon developed by Pustejovsky (1995) (Lenci, 2014).

These resources, however, are not all based on the distributional behavior of verbs. In fact, an important point to mark is that verbs can be classified according to various and different properties, and several views on a semantic taxonomy of verbs are possible. We adopted a constructionist and strongly distribution-based approach, but other types of classification are nonetheless available. For example, verbs can be classified on the basis of the semantic field to which they belong. An example of a purely semantic classification of words is Wordnet (Miller, 1995: Fellbaum, 1998), an online lexical database for English which clusters together nouns, verbs, adjectives and adverbs into sets of cognitive synonyms (synsets), each expressing a distinct concept. WordNet also represents the semantic links among the distinct synsets (e.g.: troponymy, entailment, antonymy, etc.), thus structuring the lexicon in a network of synset relations. Wordnet is based only on semantic grounds, and does not take into consideration the syntactic behavior of the verbs it clusters.

However, in our research of Italian verb classes, we tried to distance ourselves from the existing systems of classifications, although using them as a basis and as a reference, and to develop a new method that could provide a classification as cohesive and coherent as possible (See Chapter 2 for further discussion).

Having thus outlined different approaches to argument structure and verb classifications, what verb classes are taken to be in the literature and the assumption they are based upon, what is their purpose and which are the most important classifications in the current literature, we will now turn to an in-depth description of the works that provided us with a reliable source for our classification.

The first sources that will be analyzed are Levin's *English Verb Classes and Alternations* (1993) and its extensions and the online verb lexicon VerbNet (Kipper et al. 2000; Kipper-Schuler 2005), which provides a refined taxonomy of English verbs based on the syntactic and semantic descriptions of Levin classes.

4. ENGLISH VERB CLASSES AND ALTERNATIONS

This book by Beth Levin (Levin, 1993) provides a summary of the theoretical research done on lexical-semantic verb classification for the decades leading up to it, and has opened the way for new trends of researches and linguistic investigations.

Levin's approach is based on the assumption that "the behavior of a verb, particularly with respect to the expression and interpretation of its arguments, is to a large extent determined by its meaning. Thus verb behavior can be used effectively to probe for linguistically relevant pertinent aspects of verb meaning." (Levin, 1993:1)

Hence, the author shows, for a large set of English verbs, that some facets of verb meaning have strong correlations with syntactic behavior and with the interpretation of their arguments.

More specifically, Levin verb classes are based on the presence - or absence - in the syntactic patterns of verbs of the phenomenon of argumental (or diathesis) alternations. This notion refers to “alternations in the expressions of arguments, sometimes accompanied by changes of meaning.” (Levin, 1993:2) In fact, Levin agrees with various studies (Fillmore 1967, Guerssel et al.1985, Hale and Keyser 1986, 1987) in considering argument alterations as sensitive to particular components of verb meaning, and therefore the best indicator of differences in verb behavior.

E.g.: examples (3) and (4) show the so-called English *locative alternation*, that is the verbs *spray* and *load* have the ability to express their arguments with different patterns.

- (3) *a. Sharon sprayed water on the plants.*
 b. Sharon sprayed the plants with water.
- (4) *a. The farmer loaded apples into the cart.*
 b. The farmer loaded the cart with apples

[examples taken from Levin, 1993: 2]

Starting from this primary assumptions, the author analyzes roughly 3,000 verbs (for over 4100 senses) on syntactic and semantic grounds, for the identification of a large-scale classification of verbs. In this classification, “verbs which display the same or a similar set of diathesis alternations in the realization of their argument structure are assumed to share certain meaning components and are organized into a

semantically coherent class.” (Kipper et al., 2007: 23). Although alternations are the primary means for identifying verb classes, additional properties (related to subcategorization, morphology and extended meanings) are taken into account as well.

The book is structured in two parts. In the first, the author investigates the argument (or diathesis) alternations of English verbs, such as Causative-Inchoative, Dative, Locative etc. The second part is instead an analysis of English verb classes (and additional subclasses that further subcategorize the members of a class), which are considered to be both semantically coherent and syntactically pertinent.

Therefore Levin’s verb classes are understood as being two-dimensional: firstly, verbs are (at least partially) classified according to their semantic content, giving rise to classes such as Manner of Motion verbs, Change of State Verbs, Kill Verbs etc. Secondly, each argument alternation defines a verb class, that is thus defined as the set of verbs which undergo a given alternation. As mentioned above, in fact, diathesis alternations are considered by the author to explain differences in verb meaning:

“If the distinctive behavior of verb classes with respect to diathesis alternations arises from their meaning, any class of verbs whose members pattern together with respect to diathesis alternations should be a semantically coherent class: its members should share at least some aspect of meaning. (...)Thus diathesis alternations can be used to provide a probe into the elements entering into the lexical representation of word meaning.”

[from Levin, 1993:14]

This double investigation results in 48 broader and 192 finer-grained classes, according to the 79 alternations.

Each class is accurately described by the author; fig.1 shows the entry for the class of KILL verb (class n^o 42).

42 Verbs of Killing

42.1 Murder Verbs

References: Brousseau and Ritter (1991), Carter (1976, 1988), Dixon (1991), Dowty (1979), Fodor (1970), Kac (1972a, 1972b), G. Lakoff (1970a), J.D. McCawley (1970b, 1972a, 1972b, 1976), Morgan (1969), Morreall (1976), Parsons (1990), Ravin (1990), Shibatani (1972, 1976b), Wierzbicka (1980)

Class Members: assassinate, butcher, dispatch, eliminate, execute, immolate, kill, liquidate, massacre, murder, slaughter, slay

Section 42.1

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Properties:

(776) Brutus murdered Julius Caesar.

(777) *Causative Alternations:

- a. Brutus murdered Julius Caesar.
- b. *Julius Caesar murdered.

(778) *Middle Alternation:

- a. The bandits murdered innocent victims.
- b. *Innocent victims murder easily.

(779) *Instrument Subject Alternation (except *kill*):

- a. Brutus murdered Julius Caesar with a dagger.
*The dagger murdered Julius Caesar.
- b. The exterminators killed the insects with DDT.
The DDT killed the insects.

(780) *Resultative Phrase (except *kill*):

- *Brutus murdered Julius Caesar dead.
Brutus killed Julius Caesar dead.

[fig.1, Levin,1993: 230-231]

Levin names each class and subclass with the verb that most prototypically represents the general event lexicalized by the class itself (e.g.: Verbs of Killing, Verbs of Putting etc.). Then, she proceeds to describe each subclass (e.g.: *Murder* verbs).

The first information provided is the bibliographic references of pre-existing studies in the literature; then, she lists the class (or subclass) members in alphabetical order. The last section of the description is the set of “Properties” of the given subclass: namely, the alternations the verbs do and do not allow. A brief comment of the properties follows, and generally explains the semantic and syntactic features of the class and subclass, the idiosyncratic properties and the syntactic patterns that are specific only to some members (e.g.: “The verbs in this class all describe killing. The verb kill is the class member with the least specific meaning (...)”, “None of the verbs in this class lexicalizes a means component”, “few members of this class of verbs appear to be able to take instrumental phrases headed by the preposition *with*.”, etc. (Levin, 1993: 231)).

Levin’s criteria for class membership are therefore grounded on the sharing of particular diathesis alternations; this proposal “can be regarded as a particular instance of the so-called Distributional Hypothesis (Harris 1954, Miller & Charles 1991, Lenci 2008).” (Lenci, 2014: 20) According to this hypothesis some aspects of lexical meaning depend on their distribution and behavioral patterns in linguistic contexts, “and the degree of semantic similarity between two linguistic expressions A and B is a function of the similarity of the linguistic contexts in which A and B can appear.” (Lenci, 2014 *ibidem*)

Even though the focus of Levin’s work is clearly the English language, it has been argued by many scholars that verb classes allow generalizations on properties

extending beyond the limits of an individual language (for example, see Merlo et al., 2002 for an adaptation of 20 Levin classes to Italian).

The system of verb classes in Levin's (1993) has been often used by the Natural Language Processing community as evidence for the semantic similarity of verbs (Jing & McKeown, 1998; Lapata & Brew, 1999; Kohl et al., 1998).

As it has been shown, the basic claim of Levin (1993) is in fact to demonstrate that syntactic alternations can be the basis for classes of verbs that have semantic coherence as well, and that those verb classes also accord with linguistic intuitions. However, subsequent examinations of Levin's classes and alternations, as in Dang et al. (1998) (see below), have shown that the classes the author identifies "are not simply the product of automatic application of a set of rules about participation in alternations, but are partially semantically motivated" (Baker and Ruppenhofer, 2002:38). In fact, a classification strictly based on the presence or absence of argument alternations would have given much finer distinctions, and the inevitable splitting of many semantically coherent classes; the classification thus acquires a hybrid syntactical-semantic character. In other words, although the work by Levin maintains its fundamental role in the study of verb classification, further researches have demonstrated that verb meaning does not reveal itself, at least not completely, in syntactic alternations, but that more complex and basic features are to be considered (see below for further discussion).

Another problem in the structure of the work is found in argument alternations patterns for verbs: since the goal of the book is to be a "preliminary

study”, the classification mainly deals with verbs taking only noun and prepositional phrase complements, and excludes those taking sentential arguments.

In the following years, several works that followed up on Levin’s research have tried to fill the gap and implement the set of existing classes by adding other verbs that were initially excluded. We will discuss the major extensions of the classification, since they had a great importance in the developing of VerbNet, which uses Levin’s classification and its implementations.

4.1) EXTENSIONS OF LEVIN (1993)

Since the publication of *English Verb Classes and Alternations*, many additional studies have dealt with some of the main issues present in the book, both refining and extending the coverage of the classification Levin initiated for English verbs.

The works sprung from Levin’s investigation are numerous and various; for example Olsen et al. (1997) is dedicated to the implementation of Levin (1993) by refining verb classes according to verbal telicity, and Dorr (1997) added further classes for verbs which do not fall into any of the Levin groups due to their distinctive syntactic behavior.

However, here we will mainly discuss those works that were also used by VerbNet to extend its coverage, in particular, Dang et al. (1998) and Korhonen and Briscoe (2004).

Dang et al. (1998) augmented Levin's taxonomy with a set of new *intersective classes* whose verbs share membership with more than one Levin class; these classes were created by grouping together sets of existing classes with overlapping members.

The study by Dang and colleagues aims to resolve a major issue of the original classification, that is that "some Levin classes contain members that exhibit a diverse range of possible semantic components" (Kipper-Schuler, 2005: 14), due to fact that many verbs are polysemous and hence seem to belong in various and different classes. Fig.2 illustrates an example of an intersective Dang class made from several original Levin classes: *Carry, Push/Pull and Split verbs*. An intersective class is created by clustering together subsets of Levin classes that show at least three overlapping members. The verbs in parentheses are the ones that participate in all the alternations for the classes, although they are not listed by Levin as members in all the original classes. The membership in an intersective class is assigned if the verb is listed in each of the existing classes that were grouped together.

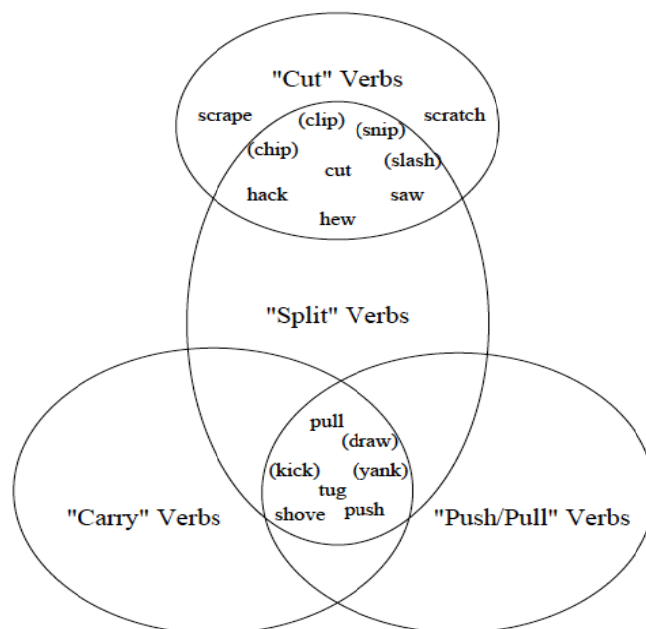
Levin classes are not comprehensive enough: as already mentioned, the only types of verbs the author analyzes in depth are the ones taking NP and PP complements. With respect to this issue, an extremely important study that followed and implemented Levin's taxonomy is Korhonen and Briscoe (2004), which proposed a substantial extension of Levin's classification, supplementing it with 57 novel classes semi-automatically derived from corpora.

As a result of this work, the taxonomy gained considerably in breadth: specifically, verbs taking adjectival, adverbial and adpositional phrases, particle,

predicative, control and sentential complements were investigated, since they were largely excluded from Levin's work.

In their paper, Korhonen and Briscoe provide an evaluation of their taxonomy to support the stance that the novel classes are adequate for NLP tasks and they prove that "the extended classification has good coverage over the English verb lexicon and thus constitutes a resource suitable for large-scale NLP use." (Korhonen and Briscoe, 2004: 8)

Kipper et al. (2006) further supplemented Korhonen and Briscoe (2004) with another extension including 53 additional classes. These two extensions of the original Levin's work were integrated into VerbNet to provide a wider coverage of the English lexicon.



[fig.2, from Kipper-Schuler (2005: 15)]

These extensions in particular have proven to be very helpful to build VerbNet, which integrated the original and novel classes in a “hierarchical verb lexicon with syntactic and semantic information for English verbs.” (Kipper-Schuler 2005: 28) In the next section, we will describe VerbNet structure and its function with regard to the present work.

5. VERBNET²

VerbNet (Kipper et al., 2000; Kipper-Schuler, 2005) is the most important broad-coverage class-based online verb lexicon existing for English verbs. VerbNet is organized into verb classes which are based on the original taxonomy by Levin (1993) and which have been extended and refined in order to achieve a higher (syntactic and semantic) coherence among members of a class (see Kipper et al. 2006a and 2006b; Kipper et al. 2008;).

Verb classes are hierarchically organized and the relation between parent class and child subclass is strictly monotonic; this means that “a child subclass inherits all the information from its parent class, and adds information to it, which can be in terms of imposing further restrictions on the roles, or adding syntactic frames or semantic predicates to the subclass.” (Kipper-Schuler, 2005: 42)

That is, VerbNet is constructed with a “tree” structure for classes, which is constituted by an obligatory *top class*, that is the highest class in the hierarchy; every feature that is listed at this first level is common to all verbs in the class, even in lower

² <http://verbs.colorado.edu/~mpalmer/projects/verbnet.html>

levels. It often happens that the top class does not have any members. Beside the top class, at lower levels of the hierarchy there are the *parent classes* and the *child classes* (or subclasses). This strict hierarchical structure of the lexicon was inspired by the Acquilex Lexical Knowledge Base(LKB) (Copestake, 1992).

VerbNet provides detailed syntactic-semantic descriptions for each class, as Fig. 3 depicts. The example represents the lexical entry for the class number 42, MURDER verbs. The complete description of a class is articulated in three distinct parts.

The first section of VerbNet class description is a list of its members, with mappings to several other resources such as the abovementioned WordNet, FrameNet (Baker et al., 1998), PropBank (Kingsbury and Palmer, 2002)³ and Ontonotes Sense Groupings (Hovy et al., 2006)⁴. The various resources were linked together using SemLink⁵, in order to combine different types of information. The content of all four of these resources can be browsed on-line using the Unified Verb Index⁶. The entry for each lexical item in the Unified Verb Index, with all the mappings to the various resources, is exemplified in fig. 4 with the research of the verb “to kill”.

Secondly, each class contains semantic information in the form of the thematic roles associated with the arguments (e.g.: for MURDER verbs, Agent,

³ corpus of text annotated with information about basic semantic propositions. Predicate-argument relations were added to the syntactic trees of the Penn Treebank.

⁴ process for rapid sense inventory creation and annotation, based on the recognition that sense distinctions can be represented in an hierarchical structure

⁵ <http://verbs.colorado.edu/semlink/>

⁶ <http://verbs.colorado.edu/verb-index>

Patient, Instrument); VerbNet's argument list consists of a set of 23 thematic roles. Selectional restrictions on arguments, (e.g.: [+ Animate]) are explicitated as well, in order to indicate the preference of thematic roles allowed by the classes. VerbNet's selectional restrictions are based on EuroWord-Net (Vossen, 2003) top level entries. Syntactic frames may also be constrained in terms of which prepositions are allowed.

The third part consists in a set of frames illustrating the possible surface realizations of the argument structure; this last part of the description is articulated in four levels: firstly, a brief description of the syntactic frames allowed by members (e.g.: "NP V NP" and "NP V NP PP.instrument") is given; secondly, the frames are exemplified with a sentence (e.g.: "Brutus murdered Julius Caesar" and "Caesar killed Brutus with a knife"); thirdly, a syntactic description with each thematic role associated to the corresponding position in the example is provided, and lastly the frame is formally described by explicit semantic information, in the form of semantic predicates (e.g.: CAUSE) expressing a temporal function, in a manner similar to the event decomposition of Moens and Steedman (1988) (for further details see Kipper-Schuler, 2005).

No Comments		murder-42.1 <i>Members: 17, Frames: 2</i>		Post Comment	CLASS HIERARCHY MURDER-42.1 MURDER-42.1-1
MEMBERS KEY					
ANNHILATE	ELIMINATE (FN 1, 2; WN 3; G 1)	LIQUIDATE (FN 1; WN 1; G 4)	SLAUGHTER (FN 1; WN 1, 2; G 1, 2)		
ASSASSINATE (FN 1; WN 1; G 1)	EUTHANIZE	LYNCH	SLAY (FN 1; WN 1)		
BUSHWHACK (WN 1; G 1)	EXECUTE (FN 1; WN 1, 2; G 1)	MASSACRE (FN 1; WN 1)			
BUTCHER (FN 1; WN 1)	EXTERMINATE	MURDER (FN 1; WN 1; G 1)			
DISPATCH (FN 1; WN 3; G 3)	IMMOLATE (WN 1)	OFF			
ROLES REF					
<ul style="list-style-type: none"> AGENT [+ANIMATE] PATIENT [+ANIMATE] INSTRUMENT 					
FRAMES REF KEY					
NP V NP					
EXAMPLE	"Brutus murdered Julius Cesar."				
SYNTAX	<u>AGENT V PATIENT</u>				
SEMANTICS	CAUSE(AGENT, E) ALIVE(START(E), PATIENT) NOT(ALIVE(RERESULT(E), PATIENT))				
NP V NP PP.INSTRUMENT					
EXAMPLE	"Caesar killed Brutus with a knife."				
SYNTAX	<u>AGENT V PATIENT (WITH) INSTRUMENT</u>				
SEMANTICS	CAUSE(AGENT, E) ALIVE(START(E), PATIENT) NOT(ALIVE(RERESULT(E), PATIENT)) USE(DURING(E), AGENT, INSTRUMENT)				

[fig.3]

kill	MURDER-42.1-1, SUBJUGATE-42.3, (PROPBANK), (FN KILLING), (GROUPING)
kill.n	(GROUPING)
killing.n	(GROUPING)

[fig.4]

The first version of VerbNet included 4,100 verb senses (over 3,000 lemmas) distributed across 191 first-level classes, and 74 subclasses. This version was evaluated through a mapping to roughly 50,000 instances of PropBank corpus instances (see Kipper-Schuler 2005), and its frames were proven to account for roughly 78% of exact matches found in PropBank frames.

However, in order to create a more reliable lexical resource, in the following years VerbNet was expanded by integrating the aforementioned expansions of Levin classification, and consequently new classes and subclasses were added, and new verbs have been supplemented from the LCS database (Dorr et al., 2001) and Sketch Engine (Bonial et al., 2013). The now available version (VerbNet 3.2) features 8537 verbs represented, 273 main classes and 214 subclasses, and it boosted up to a 90.86% coverage of the Proposition Bank data (Palmer et al., 2005)

VerbNet is, today, the most important class-based verb lexicon for English, and various and numerous attempts have been made to translate or adapt such resource to other languages. For example, Merlo et al. (2002) have used cross-linguistic similarities to convert 20 Levin classes to Italian, obtaining high accuracy (86.3%). Recent direct translations of VerbNet are the ones of Estonian VerbNet (Jentson 2014) and the Brazilian Portuguese VerbNet (Scarton and Aluisio, 2012). Other studies comparable to VerbNet were also done for Spanish (Ferrer, 2004), German (Schulte Im Walde, 2006), and Japanese (Suzuki and Fukumoto, 2009). In French several studies and researches were done throughout the last 20 years; Saint-Dizier (1996) first produced a resource rather similar to VerbNet, even if the research has stopped and there is no available result. Other later work has focused on the automatic acquisition of subcategorization frames, grouped according to their syntactic and semantic similarity (Sun et al., 2010). The most complete work on the creation of a French VerbNet is however Pradet (2014).

Our research (as will be discussed in depth in the next chapter) did not aim for a direct translation of a VerbNet/Levin-like classification, but rather chose to integrate these taxonomies with other types of information and lexical resources in order to create an independent system for Italian verbs, and yet comparable to Levin's classes and VerbNet.

We will now turn to a more accurate description of argument alternations. In fact, Levin's classification, and consequently VerbNet's, is based on alternating verbs, but more recent works have questioned the very essence of what an alternation is. These new studies in the constructionist framework will be very important for the present work.

6. ALTERNATIONS

Argument (also known as: diathesis, valence) alternations are one instantiation of the larger phenomenon of multiple argument realization - that is, the ability of most verbs to appear in various syntactic contexts - and have been at the center of linguistic research for the last decades. The study of argument alternations has changed greatly in the last half of the XX century (see Levin 2014): in the last fifty years the focus has shifted from purely syntactic analyses to accounts in which the semantic dimension has gained more and more attention.

In the 1960s argument alternations were taken to be essentially syntactic in nature and were analyzed with transformational analyses. The alternating verb was assumed to have one basic meaning and one basic argument realization from which

the other was realized via transformations. By the end of the decade and the beginning of the 1970s, though, non-transformational approaches to argument alternations emerged: the two alternating variants were considered to be linked by a lexical rule, leading to accounts where alternating verbs are systematically listed in the lexicon with two related but distinct meanings. Each of these meanings gives rise to its own realization of the verb's arguments.

This kind of analysis of alternations continued for some time, but from the beginning of the 1990s a new line of work began to emerge: it attributed the differences in meaning between variants to separate and different constructions - that is structures combining form and meaning - rather than to verbal polysemy. (Goldberg 1992, 1995 for first applications of constructionism to Dative Alternation.) This new approach considered alternations to be epiphenomena (Goldberg 2002): all verbs are monosemous, and their "core" meaning persists across all their uses⁷.

Construction grammar is grounded on the notion that the basic assumption that a verb — or "root" (Pesetsky 1995) — can be associated with a construction if its meaning is compatible with the constructional meaning (Ghomshehi & Massam's (1995: 199) Compatibility Principle) (see next chapter for further explanation). I will concentrate on such new theories in the next section.

⁷A "neo-constructionist" approach (Borer 2003, 2005) has emerged in the first decade of the Millennium, within the Minimalist program (Chomsky 1995). It maintains the association of semantic interpretations with syntactic structures, but the syntactic structures are understood to be built according to minimalist syntactic assumptions.

Syntactic alternations are considered to be a cross-linguistic phenomenon even though their particular instantiations vary greatly across languages (Haspelmath, 1993; Nedjalkov, 1979; Nichols et al., 2004 for causative alternation, Dryer 1986; Malchukov et al., 2010; Siewierska, 1998 for multiple realizations of the English dative alternation, etc.). Furthermore, speakers are able to make extremely subtle judgments about argument alternations, and to further extend such judgments to novel constructions, as for the case of new denominal verbs (e.g.: the Dative Alternation *I texted the address to Sarah / I texted Sarah the address*).

Maybe the most compelling example showing that “what enables a speaker to determine the behavior of a verb is its meaning” (Levin, 1993: 4) is given in Hale and Kayser (1987): the authors considered the obsolete English verb *to gally*, an archaic verb form of the verb “to frighten, to worry”, in sentences like *The sailors gally the whales*. Speakers who were unfamiliar with the term assumed it meant “to see”, while others recognized the original meaning of the verb; on the basis of these semantic assumptions, people were able to determine the syntactic behaviour of the verb. If they thought of the verb as a form of “to see”, it could not partake in the so-called Middle Alternation, while in the meaning of “to frighten”, the verb allows it:

(5) a. *The sailors gally the whales.*

b. **The whales gally (see).*

(6) a. *The sailors gally the whales.*

b. *The whales gally easily*

This and many other examples should show that a verb syntactic behavior is to a large extent determined by its meaning. For this reason, argument alternations are understood to bear significant relevance in the study of the lexical semantics of verbs and of verbal behavior.

Argument alternations are easily recognizable; “many verbs can be found in multiple syntactic contexts, but some pairs of contexts involving a particular verb are taken to be linguistically privileged and, thus, to be an object of linguistic investigation” (Levin, 2014: 1) Such contexts share some features that characterize them as alternations: they tend to have the same arguments, although in a different configuration; they share a core meaning that is maintained in both contexts, and finally one form seems to be a paraphrase of the other (7) or shows a significant overlapping in meaning (8):

(7) a. *Avery gave an opera ticket to Taylor.*

b. *Avery gave Taylor an opera ticket.*

(8) a. *The looters shattered the store window.*

b. *The store window shattered.*

[examples taken from Levin, 2014: 1]

Argument alternations have had and still have a crucial importance in studies on argument realization and on verb classes. However, it is generally assumed that of the two forms one is derived or paraphrased from the other. A number of non-derivational approaches to argument alternations have developed in the last years, since it is more and more clear that it is not “profitable to analyze one phrasal pattern solely by implicit or explicit reference to another.” (Goldberg, 2002: 223)

These approaches take alternations to be epiphenomena, and each syntactic pattern to be independent. In the present work a similar stance is assumed: we did not focus on pairs of alternating argument realization patterns, but rather on the single constructions. We will now turn to analyze these approaches.

6.1) NEW APPROACHES TO ALTERNATIONS

In the last decades, new ways of understanding pairs of alternating verbs have emerged, which consider multiple argument realization patterns as independent argument structure constructions that specify how a verb's arguments may be expressed: "differences among instances of the same surface pattern are often most naturally attributed directly to the different verbs and arguments involved." (Goldberg, 2002: 327) That is, Goldberg - and the constructionist approach in general - claims that it is preferable to avoid positing derivations and to concentrate on surface forms since there are generally more numerous, broad and powerful generalizations surrounding particular surface forms than the ones that come from transformational and derivational accounts. In other words, it is preferable to concentrate on each surface pattern on its own terms: grammar does not involve any transformational or derivational component, and semantics is associated directly with surface form (Culicover & Jackendoff, 2005; Goldberg, 2002).

More specifically, this means that traditional accounts of argument alternations as an autonomous phenomenon are biased, since they under-represent the generalizations that exist. This is in striking contrast with earlier transformational

or derivational accounts of argument alternations (see Edmonds, 1972; Hall, 1965; Dowty, 1978; Jackendoff, 1975; Pinker, 1989), which posited specific processes for deriving one variant of an alternation from another.

These new studies concentrated in finding new ways to account for the linguistic phenomena previously explained as alternations. For example, Goldberg (1995, 2002) and Boas (2003) and a number of other studies devoted their attention to the Locative Alternation of the SPRAY/LOAD subclass (see chapter 3, section 2.7):

(9) a. *Joe loaded boxes onto the truck.* b. *Joe loaded the truck with boxes.*

(10) a. *Lila sprayed paint onto the wall.* b. *Lila sprayed the wall with paint.*

[examples taken from Boas, 2003: 27]

Both Goldberg and Boas give a different account for the so-called alternation after having explained the flaws in the pre-existing theory of alternations, and defining a new methodology to work on multiple argument realization patterns.

Goldberg (1995) was the first to propose that multiple argument realizations could be best explained in terms of independently existing argument structure constructions. In her view, grammatical constructions are “taken to be the basic units of language” (1995:4) that “can be viewed as free-standing entities, stored within the lexicon alongside lexical items, idioms, and other constructions that may or may not be partially filled.” (1995:221) Constructions are assumed to be conventional form-function pairs of varying levels of complexity and abstraction (Goldberg 1995; 2006) and are to be characterized as independent and not as a variants in an alternation.

In other words, the constructionist approach holds that each argument structure construction specifies its semantic and information-structure properties; this inevitably greatly enhances the role of the lexicon, which is now believed to include phrasal patterns with their own idiosyncratic syntactic or semantic properties.

According to Goldberg (1995) “simple clause constructions are associated directly with semantic structures which reflect scenes basic to human experience” (Goldberg, 1995: 5). This means that there is a limited number of formal appearances of frames, which are formed by syntactic patterns mapped to semantic frames, giving rise to the more abstract notion of construction. For example, one type of argument construction which has received great attention is the Ditransitive construction (see for further discussion Goldberg, 2002:330 and following). The term “ditransitive” is here used to generally refer to a three-argument construction, which can be found in different forms across languages: usually, subject, object, and a dative NP (Siewierska, 1998) or the double object construction in English. That is, the Ditransitive construction takes the form of *subj[a1]> V> obj[a2]> obj2[a3]* and profiles the general semantic frame of “X causes Y to receive Z”.

(11) *John sent Julia a letter / John sent a letter to Julia*

(12) *Gianni ha mandato una lettera a Giulia*

In short, constructions generalize over a set of frames expressing their meanings by similar syntactic patterns. The verb classes then result from the clusters of verbs belonging to the same semantic field and whose valency frames are licensed by the same construction. Argument alternations, therefore, are not longer seen as a

primary source for linguistic investigation, but merely as epiphenomena. Each syntactic pattern should be regarded as an independent structure (see below for further discussion).

Furthermore, one of the main advantages claimed by constructionist approaches is that surface argument structure alone can lead to broader syntactic and semantic generalizations than those captured by derivations or transformations: “by carefully examining a fuller range of surface phenomena, broader generalizations, surface generalizations in the form of Argument Structure Constructions, are revealed.” (Goldberg, 2002:349) Goldberg refers to this as to the *surface generalization hypothesis*, which “suggests that it is possible to overplay the importance of alternative forms (paraphrases).” (Goldberg, 2002: 329)

For example, the author, analyzes the Ditransitive construction:

(13) a. *Mina bought book for Mel.* → *Mina bought Mel a book* .

b. *Mina sent a book to Mel.* → *Mina sent Mel a book*

(14) a. *Mina bought a book for Mel.* b. *Mina bought him a book.*

(15) a. *Mina sent a book to Mel.* b. *Mina sent Mel a book.*

[examples from Goldberg, 2002:330]

Many generative theories derive the two ditransitive patterns in (13) (which in English is instantiated by the so-called Double Object construction) from distinct input- expressions, which correspond to their rough paraphrases (Baker, 1988; Larson, 1988). Even certain constructional approaches treat the two as distinct instances of two independent constructions (e.g. Jackendoff, 1990; Kay, 2001). Goldberg, instead, claims that both forms share many properties with each other and

are on the contrary systematically different from their paraphrases (see also Langacker, 1991; Oehrle, 1975). For example, both (14a) and (15a) share a superficial form, adverbs may not separate the two NP arguments, neither type of ditransitive expression allows the theme argument to be the third person singular *it* (Green, 1974; Oehrle, 1975) etc.

In other words, Goldberg suggest that “there are good reasons to group the two ‘outputs’ together as distinct from the ‘inputs’” (Goldberg, 2002: *ibidem*), as in (14) and (15).

To justify her argument, Goldberg (2002) refers to Chomsky (1970) and its claims on derived and underived nouns, which, the author says, are based on surface generalizations. Since derived nouns (i.e., nouns that have verbal counterparts) have exactly the same syntax of NPs based on underived nouns, it is simpler not to consider the first as derived from the latter. From this principle, Goldberg infers the generalization, applicable to verbs as well as nouns, that “it is preferable to avoid deriving A from C if there exists a pattern B that has the same syntax and semantics as C and yet cannot serve as input from which to derive A.” (Goldberg, 2002: 329)

More specifically, in Goldberg’s view it is the verb that captures what is shared between members of an alternation; therefore, the focus must be shifted to individual verbs and their argument roles, which allow to motivate distinctions among instances of the same general argument structure construction (and not different structures). That is, surface structure gains importance because instances of the same construction may differ, allowing rather diverse ranges of syntactic patterns, which

are all paraphrases ascribable to the same structure. Furthermore, according to Goldberg the traditional transformational and derivational frameworks has under-represented the generalizations that exist across argument structures. E.g.: the “dative” or “locative” constructions can be grouped together, at least in the case of English, in a wider “caused-motion” generalization.

- (16) *a. She gave a book to him. “dative”*
b. She loaded the hay onto the wagon. “locative”
c. She tossed the book to him.
d. She tossed the book toward him.
e. She tossed the book toward the wagon.
f. She tossed the book onto the wagon.

[from Goldberg, 2009: 96-7]

That is, (16a-f) are all instances of the same “caused-motion” construction. Another compelling example Goldberg makes is the fact that ditransitives and “benefactive” ditransitives should not be treated as distinct constructions because of their distinct paraphrases, but should be regarded as stemming from one single construction since both types pattern alike both semantically and syntactically.

That is, the author emphasizes the importance of generalizations based on same form and meaning, and disregards those that can be made from different syntactic patterns of a same verb: “instances of a same construction with different verbs may have more in common than instances of a same verb with distinct though similar constructions.” (Perek, 2015: 149) In other words, the perspective has changed: at the center of the attention there is no longer a verb that takes different argument patterns (e.g.: *I sent a message to Julia/ I sent Julia a message*), but rather

a construction instantiated by different verbs (e.g.: “cause X to receive Y” *I sent a message to Julia/ I bought a book for Julia*).

Similar stances on argument alternations have been made in the Frame Semantics framework; as in constructionist approaches, alternations are not considered *per se* but are rather understood to be epiphenomena. Alternations arise from verb polysemy, or as Boas (2011: 207) puts it: “differences in syntactic behavior are best explained in terms of the different polysemy networks of senses associated with each verb.” That is, a verb’s meaning is not only represented in terms of a single minimal lexical entry, but it is rather formed by a network of distinct but interrelated senses; the multiple senses are linked to each other but ought to be considered and described separately (Boas, 2003). The same verb corresponds to several different lexical units (that is, pair of a word and its associated sense), which evoke very different semantic frames.

For example, in Boas (2011) the author exemplifies the difference between Levin’s classification and a Frame Semantics approach to verb classes with the case of Levin’s BUILD verbs, which are claimed to exhibit a number of specific alternations. However, the author shows that not all of the members exhibit the same syntactic behavior; this is caused by the frequent absence of a one-to-one mapping between semantics and syntax. In other words, several verbs describing “the creation of a product through the transformation of raw materials” (Levin, 1993: 174) do not participate in the syntactic alternations which should characterize the class itself, despite their semantic similarities.

The author reports several examples showing how alternations are not the best way for defining verb classes. E.g., the verb *to construct*, is semantically similar to the members of Levin's BUILD verbs (it involves the creation of a product through the transformation of raw materials). However, since it does not exhibit the same syntactic alternations of the class, it is excluded.

(17) a. *Lena constructed a building out of the bricks.*
b. **Lena constructed the bricks into a building.* (MATERIAL-PRODUCT ALTERNATION)

(18) a. *Lena constructs buildings.*
b. **Lena constructs.* (UNSPECIFIED OBJECT ALTERNATION)

[examples taken from Boas, 2011: 210]

However, also verbs which are considered members of the class at issue do not occur in these two alterations. This fact raises the question on "how many syntactic alternations should a verb participate in (or not) in order to be classified as belonging to a particular verb class" (Boas, 2011: *ibidem*). Another compelling example made by Boas regards the verb *to weld*, which also fits the semantic characteristics of the BUILD class.

(19) a. *Samuel welded a sword out of the iron.*
b. *Samuel welded the iron into a sword.*

(20) a. *Samuel welds swords.*
b. *Samuel welds (again).*

(21) a. *Samuel welded a sword (out of iron) for his friend.*
b. *Samuel welded his friend a sword (out of iron).*

[examples from Boas, 2011:211]

The examples in (19)-(21) show that *weld* occurs in three of the alternations used by Levin to characterize the verb class (but it is not present in others). Given the syntactic similarity of the verb with the BUILD class, one would expect it to be a member. Instead, Levin (1993:161-162) classifies *weld* in the SHAKE verbs class, which specifies "the manner in which things are combined, rather than the result" of the combining. The examples I just reported, and others, clearly show that "although alternating syntactic behavior may be taken as an indication of verb class membership, it does not always work, thereby excluding other relevant verbs from the same semantic class." (Boas, 2011:211)

This irregular behavior is, in Boas' opinion, best explained in terms of different polysemy networks: "some verbs exhibit similar polysemy patterns where their respective LUs [lexical units] evoke the same semantic frames. At the same time, however, other verbs do not exhibit the same types of polysemy patterns, and their respective LUs may differ in number and types of semantic frames they evoke." (Boas, 2011: 221).

To sum up, Frame Semantics assumes that semantic criteria are the primary mean to identify class membership of a given lexical unit. Semantic frames are therefore structuring devices that help to group verbs in classes based on their ability to profile similar types of situations and events. In this view, multiple argument realization patterns combined with a single verb are not licensed by autonomous constructions but by polysemy networks of interrelated, albeit distinct, senses (see also Iwata, 1998; Fillmore & Atkins, 2000; Boas 2001, 2002).

From the late 1990s an online database based on frame semantics principles has been developed: FrameNet (Baker et. al, 1998). Based on evidence from the British National Corpus, FrameNet clusters together words that are semantically similar, i.e. that evoke the same semantic frame.

FrameNet, although based on Frame Semantic, is also capable to account for generalizations regarding argument structure; as Baker and Ruppenhofer (2002) have discussed, FrameNet can capture the alternating syntactic behavior of verbs. E.g. the English Locative alternation (*John sprayed paint on the wall/ John sprayed the wall with paint*) is accounted for in terms of two distinct frames, Placing and Filling, each evoked by different lexical units (i.e. words). The “variants” of a syntactic alternation can be linked through the frames each one evoke: “syntactic alternations are accounted for in terms of frame-to-frame relationships and the valences of pairs of lexical units evoking frames that are semantically related” (Boas, 2010: 70-1), for example, in the aforementioned Locative alternation example the Filling frame uses the Placing frame.

Given the relevance that this online resource had in the development of our classification, I will describe FrameNet more in depth in the next section.

7. FRAMENET⁸

FrameNet is an online lexical database which stems from a research project housed at the International Computer Science Institute in Berkeley, mainly initiated by Charles J. Fillmore.

FrameNet greatly differs from other lexical resources, in that it is not based on sense relations like WordNet. Instead, it is organized in terms of semantic frames, which are understood to be “structuring devices to model the types of knowledge necessary for interpreting utterances in the language” (Boas, 2011:214).

FrameNet is based on frame semantics (Fillmore, 1976, 1977, 1982, 1985, Fillmore and Baker, 2001, 2010), a theory of meaning that relates linguistic meaning to encyclopedic knowledge. Frame Semantics is based on the idea that word meanings cannot be understood without access to the encyclopedic information about given word. This means that word meanings are seen in terms of a structured extra-linguistic background, which constitutes a “conceptual prerequisite for understanding the meaning” (Fillmore and Atkins, 1992: 76-77) and that motivates the concept encoded by a word. Hence, word meaning evokes a *frame* of semantic knowledge relating to the concept it highlights (i.e., refers to), and it is best explained and understood on the basis of such semantic frame: a conceptual structure that describes a type of situation, object, or event along with the participants in it.

⁸ <https://framenet.icsi.berkeley.edu/fndrupal/>

The roles in a frame are referred to as "frame elements" (FEs) and the frame-evoking pairs of a lemma and a sense are called "lexical units" (LUs). FrameNet describes LUs in terms of the semantic frames they evoke. (see Ruppenhofer et al., 2006; Boas, 2011) : "the job of FrameNet is to define the frames and to annotate sentences to show how the FEs fit syntactically around the word that evokes the frame."⁹

FrameNet aims to "characterize the canonical combinatory possibilities of the lexical units of English (...), based on attestations from a very large corpus. (...) The combinatorics is expressed in terms of linkings of "frame elements" (equivalent to a refined notion of semantic roles) with their syntactic realization." (Fillmore, 2001). The FrameNet database contains 1,200 semantic frames, 13,000 lexical units (including multi-words expressions) and over 190,000 example sentences; it relies on corpus-based evidences, which further differentiates it from Levin's classification, whose evidences are primarily taken from linguistic literature. The FrameNet lexical database consists of a lexicon, with entries for nouns, verbs and adjectives. Each entry (representing a lexical unit) describes the FEs and the syntactic patterns that can occur with a given lexical unit. These syntactic patterns are then supported by annotated examples.

A third element is the frame repository, which contains descriptions of each frame's basic conceptual structure and supplies descriptions for the elements participating in such structures. "These three components form a highly relational

⁹ <https://framenet.icsi.berkeley.edu/fndrupal/about>

and tightly integrated whole: elements in each may point to elements in the other two.” (Baker et al., 1998:87)

Fig. 4 and 5 show an example of the representation of a frame, namely the “Killing” conceptual frame. The first part of the description provides a description of the conceptualized event (“A Killer or Cause causes the death of the Victim”) with an example (“John drowned Mary”) and a list of the FEs subdivided into core and non-core elements. In the second part (in fig.5) the set of the core elements of the frame (e.g.: Instrument, Killer, Means) is illustrated, together with the specific frame-to-frame relations, which relate the frame to other frames in the network (e.g.: the Killing frame inherits from the fame of Transitive_Action). Finally, there is a list of all the lexical units that are part of the given frame, with the their part of speech (*annihilate.v, annihilation.n, asphyxiate.v, assassin.n, assassinate.v* etc.).

It is also possible to visualize the relations between frames and frame elements by using the FrameGrapher, an interactive visual representation of the frame-to-frame relations in the data. The relations within the KILLING frame are shown in fig.7.

Since its very beginning, the FrameNet project has been extremely influential in both linguistics and NLP tasks. However appealing the hypothesis that members of the same semantic class refer to events sharing a certain number of features is, it still raises the problem of finding effective, independently motivated, and objective criteria to establish the conceptual features relevant to estimate verb semantic similarities. At least part of the large degree in variability in semantic verb

classifications is indeed due to the lack of such precise identity criteria of the relevant semantic features grounding the class choice (Lenci, 2014).

However, the frame-semantic criteria on which the database is grounded are easily applicable cross-linguistically. In fact, defining verb classifications on extra-linguistic grounds allows one to compare different languages without having to deal with language-specific instances of syntax. Hence, we considered FrameNet and its groupings to be a reliable source for the semantic description of our verb classes (see following chapter).

Killing

Definition:

A **Killer** or **Cause** causes the death of the **Victim**.
 John **DROWNED** Martha

FEs:

Core:

Cause [] An inanimate entity or process that causes the death of the **Victim**.
 Excludes: Killer The rockslide **KILLED** nearly half of the climbers.

Instrument [Instr] The device used by the **Killer** to bring about the death of the **Victim**.
 Semantic Type: Physical_entity It's difficult to **SUICIDE** with only a pocketknife.
 Excludes: Cause

Killer [Kill] The person or sentient entity that causes the death of the **Victim**.
 Excludes: Cause

Means [] The method or action that the **Killer** or **Cause** performs resulting in the death of the **Victim**.
 Semantic Type: State_of_affairs The flood **EXTERMINATED** the rats by cutting off access to food.
 Excludes: Cause

Victim [] The living entity that dies as a result of the killing.
 Semantic Type: Sentient
 Non-Core:

[fig.5]

FE Core set(s):

(Instrument, Killer, Means)

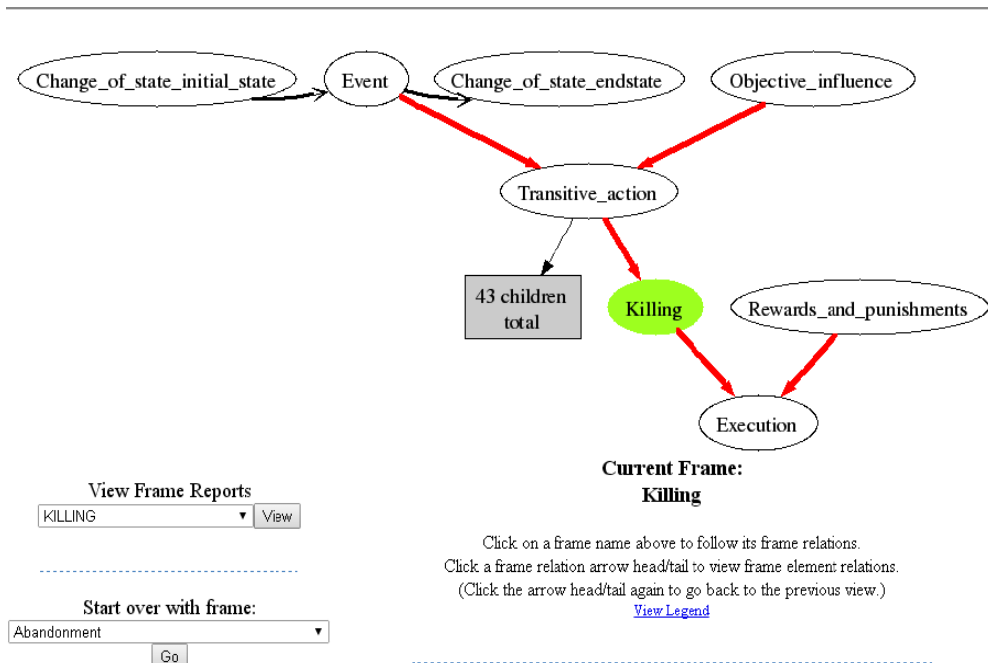
Frame-frame Relations:

Inherits from: [Transitive_action](#)
Is Inherited by: [Execution](#)
Perspective on:
Is Perspectivized in:
Uses:
Is Used by:
Subframe of:
Has Subframe(s):
Precedes:
Is Preceded by:
Is Inchoative of:
Is Causative of: [Death](#)
See also:

Lexical Units:

annihilate.v, annihilation.n, asphyxiate.v, assassinate.v, assassination.n, behead.v, beheading.n, blood-bath.n, bloodshed.n, butcher.v, butchery.n, carnage.n, crucifixion.n, crucify.v, deadly.a, decapitate.v, decapitation.n, destroy.v, dispatch.v, do.in.v, drown.v, eliminate.v, euthanasia.n, euthanize.v, exterminate.v, extermination.n, fatal.a, fatality.n, fratricide.n, garrote.v, genocide.n, holocaust.n, homicide.n, immolation.n, infanticide.n, kill.v, killer.n, killing.n, lethal.a, liquidate.v, liquidation.n, liquidator.n, lynch.v, massacre.n, massacre.v, matricide.n, murder.n, murder.v, murderer.n, patricide.n, pogrom.n, regicide.n, shooting.n, silence.v, slaughter.n, slaughter.v, slaughterer.n, slay.v, slayer.n, slaying.n, smother.v, smothering.n, starve.v, suffocate.v, suffocation.n, suicide.n, suicide.v, take (one's) life.v, take out.v, terminate.v

[fig.6]



[fig.7]

7.1) Levin/VerbNet vs FrameNet

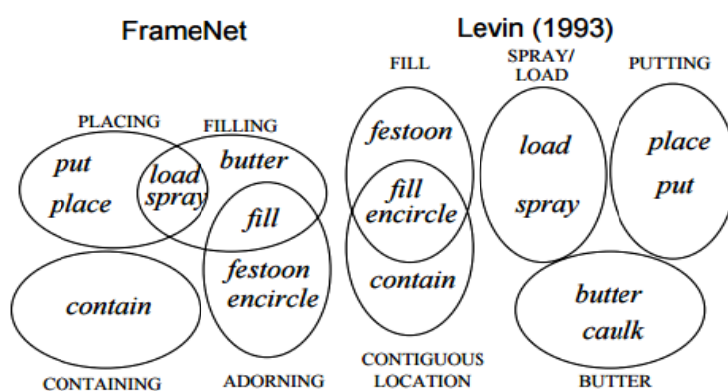
It is now clear from the discussion above that the approaches on verb classification of FrameNet and of Levin and VerbNet differ greatly. Baker and Ruppenhofer (2002) have explained and analyzed in depth the discrepancies between the two systems. Firstly, in FrameNet membership to the same class, i.e. semantic frame, is assigned on the basis of shared meaning components. This means that predicates do not need to exhibit the same syntactic behavior, and frames can thus include alternators and non-alternators. To give an example, Baker and Ruppenhofer (2002) show the case of the verbs *load* and *fill* (see fig. 8), which have long been at the center of the discussion on argument alternation and argument structure. According to FrameNet, both verbs belong to the Filling frame. *Load* is, additionally, also a member of the Placing frame, whereas *fill* is also listed in the Adorning frame. "This reflects the facts (both syntactic and semantic) that Filling is causative (Theme-Object) and Adorning (Theme-Subject) is not." (Baker and Ruppenhofer, 2002: 28) In Levin, instead, alternating patterns are understood to be crucial for the classification, hence alternators and non-alternators cannot be in the same verb class, "and the interchangeability between fill and load in the syntactic pattern is not captured" (Baker and Ruppenhofer, *ibidem*).

Another important difference between the two systems is that FrameNet is based on attested corpus examples, while in Levin and VerbNet case many class members result only from linguistic intuition, and are not supported by corpus data. Furthermore, as aforementioned, a rigorous classification grounded on alternations

would split verbs that are semantically similar, or group together verbs that behave similarly but that are rather distant in meaning. Therefore, Levin's classes and FrameNet's frames are not always perfectly compatible, but can be be roughly comparable, one can be narrower or broader or also partially overlapping.

FrameNet's approach as well shows some limitations in its ability to capture generalizations; for example, both FrameNet and the Intersective Classes approach of Dang et al. (1998) are capable of characterizing relations between senses of words only by positing a more general sense that connects the two more specific ones: in FrameNet this is done by inheritance of the frames, while in Dang it is achieved by class intersection. A final difference between FrameNet and Levin/VerbNet classification is the fact that the former covers not only verbs but also nouns and adjectives, which fall under the same semantic characterization of verbs.

In conclusion, Levin/ VerbNet and FrameNet's approaches are complementary in their treatment of verb behavior, and can thus be both extremely useful in delineating an integrated taxonomy of verbs; they are both accessible on the Unified Verbs Index (see fig.5 for the lexical entry of KILL).



[fig.8, from Baker and Ruppenhofer, 2002:28]

8. SUMMARY

In this first chapter we have generally reviewed and summarized the most important approaches to verb classification and argument alternations in the literature: from the early works of Charles Fillmore on Frame Semantic and verb classification in the 60s and 70s, to the FrameNet research project held at Berkeley, from the seminal work done by Levin (1993) on verb classes and alternations, to the subsequent implementations, to the construction of VerbNet and the new constructionist approaches of Goldberg. We have illustrated how, throughout the years, the theoretical frameworks and approaches to the general criteria for verb classification have changed. It is now clear, therefore, that verb classes and their building criteria have been at the center of the linguistic debate for decades, and a new attempt of building a classification is not at all an easy task. It must take into consideration the multitude of existing works and resources, and try to combine their most relevant features into a cohesive and comprehensive result, which might at the same time provide a new contribution to the general debate. We will describe the methodology we set up to develop a classification of Italian verbs in the next chapter.

CHAPTER 2: Classifying Italian verbs: methodological principles

This work represents an attempt to build a classification for Italian verbs, grounded in the constructionist framework and distribution-based. The aim of the research was to develop a first set of Italian verb classes that could be compatible with the Levin/VerbNet classification (see previous chapter), while being at the same time original and autonomous, reflecting the characteristics of Italian syntax and verb semantics.

Mainly, as already said in the previous chapter, the work on verb classes has been done firstly in English and then translated to other languages (see for example Pradet et al., 2014), since the main assumption of most approaches to verb classification is that the basic meaning components shared by classes can be applied cross-linguistically (Jackendoff, 1990).

However, what we tried to accomplish was to develop a method that, though inspired by the works on English, was also autonomous from these sources and better adapted to the peculiarities of Italian. As already mentioned, the classification we present here is grounded in a constructionist framework; within this general framework, however, we did not base the work only on one theory (see previous chapter for a review of the literature), but instead the method we developed allowed us to create a system that integrates various aspects and models into an original and autonomous work.

Existing taxonomies are numerous and multifarious; this variance among verb classes is due to their granularity (i.e. the number of semantic classes), but especially to the criteria with which such classes are structured (see Čulo et al., 2008, Lenci, 2014). This divergence among different verb classifications lies in their starting assumptions in particular, on the main distinction between *ontology-based* and *distribution-based* classifications. These two types of approaches differ with respect to “the extent to which the distributional properties of verbs, i.e. the set of linguistic constructions and patterns they occur with, is adopted as the main criterion for class identification and class membership.” (Lenci, 2014: 17) In the present work we decided to follow the distributional approach; this means that we developed a methodology for verb classification which is firmly rooted in the verbs’ distributional behavior. In a nutshell, the two main methodological principles we always kept in mind are distributionalism and constructionism.

In the next section we will outline our methodological principles and how our classification is structured.

1. WHAT IS A VERB CLASS?

The aim of this research is to create an independent and autonomous taxonomy for Italian verbs, strongly rooted in a distributional and constructionist perspective. Therefore, according to this assumption, a verb class can be roughly described as a set of semantically related verbs that share the same constructions. Since constructions are intrinsically defined as pairings of form and structure - i.e. syntactic templates paired with semantic and pragmatic content - verb classes will

have to be characterized by a syntactic and a semantic layer, which are mutually dependant. These classes are to be found by a close inspection of corpus-based data and empirical distributions: “distributional data de facto represent the most robust ‘observables’ that are available to us to reconstruct verb meaning and to define the proper membership criteria of semantic equivalence classes.” (Lenci, 2014: 18).

An important element to stress to further refine our definition of verb classes is the fact that verbs are generally polysemous, i.e. they can have many different senses that are associated with (sometimes) extremely different syntactic patterns. Any type of verb classification has to take into account such polysemy. The difference in behavior of different verb meanings lead to the fact that polysemous verbs are to be cross-listed, that is each sense of the verb belong to a different class. E.g. the Italian verb *abbattere* typically means “to demolish”, and should be listed among the members of a class such as the VerbNet class DESTROY verbs (class n. 44). However, it can also take the very specific sense of “to kill an animal”, and therefore it will also be included in the VERBS of KILLING class, ASSASSINARE subclass. This means that not a verb *per se*, but rather a particular verb sense is to be considered member of a given class. Verb classes, that is, are equivalence classes of verb meanings.

We will now briefly turn to our main methodological principles and the goals we pursued in the course of the present work. The method and the structure of the classes will be analyzed in depth in following sections.

1.1) METHODOLOGICAL PRINCIPLES AND GOALS

The starting point of the present work is Levin (1993) and the online verb lexicon VerbNet, which were described in the previous chapter. Nevertheless, as already mentioned, the classification we propose is not an attempt to convert VerbNet and Levin classes to Italian (for a direct conversion of Levin's classes in Italian see Merlo et al. (2002)): the resultant classes are not based on the semantic and syntactic criteria used by Levin and by the scholars which followed her line of work, and are to be considered an independent, albeit compatible, attempt to verb classification from Levin/VerbNet classes. Conversely, our method is the result of an integrated and thorough examination of several and various syntactic and semantic sources: FrameNet (see previous chapter) for the semantic roles associated to each class, and ValPaL (see below) for the distribution of syntactic constructions. What we tried to achieve, to sum up, was not a translation of VerbNet/Levin's work, but rather the creation of an autonomous classification that, even if inspired to VerbNet/Levin is nonetheless adapted to Italian syntax and semantics, and is rooted in the constructionist framework.

Another important new element of the taxonomy of Italian verbs that is worth stressing is the assumption that semantic classes must be regarded as having a *prototype* structure. Some verbs are in fact more "prototypical" for a given class than others, therefore forming a "core group". This greater or lesser degree of prototypicality is given by the number of typical constructions of the class the verbs participate in. For example, in the ASSASSINARE verbs class (a subclass of UCCIDERE

verbs, cf below), some “core” verbs like *impiccare* (“to hang by the neck”) allow the Direct Reflexive Construction.

(1) *Il prigioniero si è impiccato stanotte (The prisoner hanged himself last night)*

However, a conspicuous number of class members do not normally show this construction, and they allow it only in very specific pragmatic contexts, as the example of *fucilare* (“to execute by firing squad, to shoot”) shows:

(2) **Gianni si è fucilato (*John executed himself)*

(3) *C'è chi si è fucilato da sé, (...) un modo come un altro per andarsene.¹⁰*

(there are those who shot themselves with a rifle, (...) just another way to go.)

The prototypical structure and contrasts within a given class emerge from differences in the idiosyncratic aspects of verb meanings. More specifically, it reflects the distinction between a more general part of meaning shared by the whole semantic class and more specific components of verb meaning. That is, particular semantic properties of a verb meaning may “block” the realization of some constructions or add constructions that are not typical of the class, as the examples of *impiccare* allowing the Reflexive Construction show. Such semantic constraints are however cancellable: in particular pragmatic contexts they can get overridden, allowing the verb to take constructions it would not generally have. To better characterize this

¹⁰ example taken from ‘14, by Jan Echenoz

phenomenon, we refer to the important distinctions between Event Structure template and Root that will be treated in the next section.

1.2) TEMPLATE vs ROOT

Many theoretical proposals hypothesize that argument realization stems directly from verb meaning; although such theories are numerous and rather different between one another, they are all based on the fundamental assumption that verb meaning can be decomposed into more basic elements: a structural element and an idiosyncratic one. These approaches are generally referred to as *predicate decompositions*; the main idea is that verb meaning can be “formulated in terms of one or more primitive predicates chosen to represent components of meaning that recur across significant sets of verbs” (Levin & Rappaport Hovav 2005:69).

These primitive predicates form the first, structural element of verb meaning, the so called *template* or *event schema*; this is what defines class membership, i.e. is what all the verbs in a given class share on a semantic level.

The second and specific element of meaning is the *root* (Pesetsky 1995); it defines the idiosyncratic semantic content of a verb and distinguishes it from the other class members (see Grimshaw (2005 [1993]) “semantic structure” vs. “semantic content” distinction). “There is a limited inventory of event schemas, representing the types of events available for linguistic encoding. Each root has an ontological categorization, chosen from a fixed set of types.” (Rappaport Hovav et al., 2010:23) For example, a root can be a state, a place/container, a manner, an instrument, etc.

The ontological categorization of a root defines its association with an event schema: they can be integrated as arguments or modifiers into such schemas. The event structure of a verb, in other words, arises from the combination of the root with one or more primitives; this double structure allows verbs to be part of semantically coherent classes and, at the same time, to retain their semantic distinctiveness.

The most fundamental property of event structure is the distinction between complex events, consisting of two subevents, and simple events, consisting of a single subevent (Levin & Rappaport Hovav, 1999). For example:

(4) *Complex event structure: [[x ACT _{<MANNER>}] CAUSE [BECOME [y <STATE>]]]*

(5) *Simple event structure: [x ACT _{<MANNER>}]*

The representation in (5) is a simple event structure for an activity, but states and changes of state are also understood to have simple event structures. On the contrary, (4) is instead the representation of a complex causative event¹¹, composed by two subevents.

Roots are usually italicized and in angle brackets. They can be integrated in a template either as arguments or modifiers (of predicates). They are notated via subscripts when they serve as modifiers.

In the literature, what is generally considered to be syntactically relevant is the event structure; for example, Levin and Rappaport Hovav refer to event structure as

¹¹ All complex events are understood as causatives in Levin and Rappaport-Hovav view.

the “lexical semantic representation which determines argument realization” (Levin & Rappaport Hovav, 2005: 78).

However, what our classes show is that not only the template but also the idiosyncratic roots have the capacity to affect argument realization, as demonstrated by the ASSASSINARE verbs examples.

The specific roots can, in fact, block some argument realization patterns, thus creating differences within classes. Root constraints are however pragmatic in nature: they can be cancelled if additional premises are added, and the blocking semantic features are eliminated.

For instance, in (2) the sense of the verb *fulciare* shifts from “execute someone by firing shot” to the more general meaning of “shoot”. That is, reflexivization generally imposes a constraint on the argument occupying the subject slot; in this particular participant, in fact, two thematic roles (Agent and Theme) coexist (Jezek, 2001). Verbs that require an external Agent to carry out the action profiled by the verb (like *fulciare*) do not allow a Reflexive form, since the first argument (the subject) and the second one (the direct object) cannot co-refer. In (2), however the particular context cancel the feature [+external_agent], and therefore subject and object can corefer and the Direct Reflexive form is permitted.

The interaction of root and general template, and how they act on argument realization and verb semantics, is still a very problematic area. There is no general agreement in the literature; the clearest example is maybe the manner/result verbs dichotomy: Rappaport Hovav & Levin (2010) argue that verbs fall into two primary,

broad semantic classes with respect to the association of roots and event structure: verbs that encode the manner in which some action is carried out, and verbs encoding a result state.

a. Verbs encoding a manner: *run, walk, swim, scrub*, etc.

b. Verbs encoding a result: *break, smash, crush, destroy*, etc.

[examples from Beavers & Koontz-Garboden, 2012]

However, in their paper Beavers & Koontz-Garboden (2012) argue that “manner of killing verbs encode both manner and result, and therefore counterexemplify the manner/result complementarity in its strictest sense” (Beavers & Koontz-Garboden, 2012: 351).

2. METHOD AND RESOURCES

The method we will describe in the following sections was not established *a priori*, nor taken from other previous works in the literature, but is the result of a continuous process of refinement and adjustment; The resultant classes (to be described in Chapter 3) aim to be a first example of this integrated and comprehensive process.

2.1) BOOTSTRAPPING CLASSES

To build our classification we selected a sample of Italian verbs to “bootstrap” our semantic classes. As a representative sample for our research we used the list of the first 1000 high-frequency Italian verbs, as found and analyzed by Viola in her master thesis (see Lebani et al., 2014). This set of high-frequency verbs was selected

by matching the 1746 high frequency Italian verbs indicated by the Italian dictionary // *Sabatini-Coletti* (henceforth: *S&C*) (Sabatini and Coletti, 2012)¹² with the corresponding verbs in *La Repubblica* corpus (Baroni et al., 2004). This way, each verb was assigned a frequency value. Then, the sample was reduced to the most frequent 1000 verbs and each entry was associated with its syntactic frames registered in *S&C*, excluding archaic, technical and literary uses. (Lebani et al., 2014).

However, we also added other Italian verbs, to enlarge classes to new potential members or when a particular class was not attested in the original sample (e.g., *IMBURRARE* verbs). We marked the verbs that were not present in the original list with a star (e.g., *imburrare**).

The primary source that was investigated for the creation of Italian semantic classes was Levin's and VerbNet taxonomy. We took into consideration several Levin/VerbNet classes (E.g. KILL verbs, PUT verbs etc.) and from these we tried to extrapolate comparable Italian classes; we left the names of such classes unaltered to remark this compatibility even if our method of class construction was often distant from that source.

Once a VerbNet class was selected, we tried to find the verbs in the Italian sample that could correspond to the English members of that class. Therefore, the process of verb grouping started from the lexical semantic of the Italian verbs, trying to create sets of lexemes that cohesively profiled the same type of event (e.g: *UCCIDERE* verbs).

¹² http://dizionari.corriere.it/dizionario_italiano/

In a second phase, the groups of selected verbs were refined by closely examining the syntactic patterns they shared.

As a consequence of such distributional analysis, some verbs were discarded and others were added, mostly due to syntactic reasons. E.g.: some verbs, although semantically similar, are not constructed the same way as the other members of the class.

It is worth stressing again The main difference between our classification and Levin/VerbNet's: while Levin bases her classification on the different argument alternations that verbs undergo, we followed constructionist approaches that consider alternations to be epiphenomena. This means that we do not take alternations to be reliable indicators of verb meaning and behavior, but, on the contrary, we consider each alternating form independently: "it is profitable to look beyond alternations and to consider each surface pattern on its own terms. Differences among instances of the same surface pattern are often most naturally attributed directly to the different verbs and arguments involved."(Goldberg, 2002: 327)

We described each verb with its syntactic and semantic frame: each syntactic pattern is linked to a semantic counterpart, in the form of a semantic role list¹³ and selectional preferences. After having thus organized the verbs, we extrapolated the general syntactic and semantic information about the class from the single members:

¹³ We used the 36 roles inventory proposed in the context of the Verbnets project (Verbnets Annotation Guidelines: 19-22)

what syntactic and semantic structures are common, which constructions are idiosyncratic of just one verb, which constructions are instead shared only by a limited set of verbs, and which selectional preferences constraints are imposed to the various fillers of the slots in the constructions.

In sum, we created a classification whose starting point is indubitably Levin's seminal work and its extension in VerbNet classification, but whose resulting classes are possibly distant or rather autonomous from the original "model", due to inevitable syntactic differences, new insights coming from distributional data and the constructionist theoretical framework we have assumed.

We will now describe the online resources that were explored to gain information about class structure: LexIt, S&C and ValPaL. The general layout of verb classes is instead described in Section 3.

2.2) RESOURCES

In the following section we will describe the various online databases and resources that were used to build semantic verb classes strongly anchored in distributional evidences.

2.2.1 LexIt and *Sabatini & Coletti*

To individuate the syntactic constructions each verb allowed we combined two online resources. The first is S&C, which has already been mentioned above, the only Italian dictionary that indicates the verb valency in the lexical entry of the verb.

Fig.1 shows the typical structure of a lexical entry representing a verb (e.g.: *uccidere* “to kill”). The information given by the dictionary is various: division in syllables, word class (in this case “v.”, verb), and some indications on the conjugation (“irr. coniug come *decidere*”). In addition, the lexical entry description provides the subcategorization frames (“v.tr”- “v.intr”) and the corresponding syntactic patterns, and a list of the verb’s senses clustered together according to the frame they share.

This is particularly useful to us for the treatment of polysemous verbs: in fact, our classes group together similar verb senses with shared syntactic patterns, and S&C provides us with a fundamental tool to distinguish among the several - and quite often rather similar - senses of verbs. This distinction allows us to separate different meanings (and different syntactic realizations) in different verb classes and subclasses.

The image shows a screenshot of the online dictionary S&C. At the top, it says "Dizionario di Italiano" and "il Sabatini Coletti Dizionario della Lingua Italiana". Below that is a search bar with a "CERCA" button. The main content area shows the entry for "uccidere" [uc-ci-de-re] v. (irr.: coniug. come *decidere*). The entry is organized into subcategorization frames:

- v.tr. [sogg-v-arg]**
 - 1 Privare della vita una persona o un animale **SIN ammazzare**; *u. una mosca*; **freq.** al passivo: *essere ucciso da un rapinatore*; **estens.** fare morire una pianta: *la brinata ha ucciso i germogli*
 - 2 **fig.** In usi iperb., privare qlcu. dell'energia vitale: *la noia ti ucciderà*; soffocare, danneggiare gravemente qlco.: *questa politica uccide il turismo*
- v.intr. (aus. avere) [sogg-v]** Provocare la morte: *è una malattia che uccide*
- uccidersi**
- v.rifl. [sogg-v]**
 - 1 Togliersi la vita, suicidarsi
 - 2 Detto di due o più soggetti, togliersi la vita l'un l'altro
- sec. XIV**

On the left side of the entry, there is a vertical list of related words: ubriacare, ubriacatura, ubriachezza, ubriaco, ubriacone, uccellazione, uccellare, uccelletto, uccelliera, uccello, uccidere, uccisione, ucciso, uccisore, uderente, udienza, udire, uditivo, udito, uditore, and uditorio.

[fig.1, lexical entry of the verb *uccidere* in the online dictionary S&C]

However important, S&C only gives dictionary-type of information, that is does not provide any kind of insight on the verb distributional properties. This is why we combined its use with the exploration of LexIt, a corpus-based lexical resource on Italian argument structure created by the Laboratory of Computational Linguistics of the University of Pisa (Lenci et al., 2012). “LexIt distributional profiles contain a vast array of statistical information, automatically extracted from corpora with state-of-the-art computational linguistic methods.”¹⁴ LexIt was automatically built and it includes the distributional profiles that were extracted from two major corpora of Italian, *La Repubblica*¹⁵ (approximately 331 million tokens) and the Italian Wikipedia database¹⁶ (approximately 152 million tokens).

In this resource, each lemma is associated with a syntactic frame and a semantic profile: the semantic profile specifies the set of the possible fillers of the slots and their selectional preferences; the syntactic frame, instead, presents the range of syntactic contexts in which the lemma occurs. Fig.2 shows the entry for the lemma *uccidere* (“to kill”). A set of syntactic profiles, ordered by frequency, is listed, specifying the syntactic dependencies with which a predicate occurs (subj, obj, comp_a, etc.) and the subcategorization frames it can take (subj#obj, subj#0, subj#obj#comp-a, etc.). From the semantic point of view, the profile indicates the set of the most prototypical fillers of the frame’s slots (in the example below, the object slot) and the semantic type of such arguments (see fig.3).

¹⁴ <http://lexit.fileli.unipi.it/>

¹⁵ <http://dev.sslmit.unibo.it/corpora/corpus.php?path=&name=Repubblica>

¹⁶ http://it.wikipedia.org/wiki/Pagina_principale

given verbs but also the “typical modifiers”, by which we intend those adjuncts which are particularly close to the event profiled by the verb even though they are not integrated in the argument structure. In fact, LexIt does not make any distinction between verb arguments and adjuncts.

Another advantage of LexIt for the analyses of argument realizations of verbs is that every prepositional argument (marked as “comp-“) of a frame bears the precise indication of the preposition heading the PP (e.g. “comp-a”). S&C, instead, does not give information about the specific prepositions selected for by the complements (see fig.1).

On the other hand, the subcategorization frames in S&C are a more reliable starting point for individuating the syntactic frames of a verb, since LexIt presents many errors due to the fully automatic procedure it was used to build it. Therefore, a certain amount of “noise” in the data has to be considered.

To sum up, in our analysis the two resources were integrated in order to have a more complete and reliable array of evidence to individuate the syntactic patterns of verbs. As already mentioned, these two resources were also integrated with native speaker’s intuitions.

2.2.2 ValPaL (VALency PATterns Leipzig)

In addition to LexIt and S&C, another online resource was consulted for individuating syntactic structures: the typological database ValPaL, edited by Iren

Hartmann, Martin Haspelmath, & Bradley Taylor, which we explored for its Italian section (Cennamo & Fabrizio, 2013).¹⁷

This database is part of the Leipzig Valency Classes Project, which compares valency classes (or “verb types” in Levin’s terms) among different languages. The project aims to follow up cross-linguistically the works by Levin (1993) for English and by Apresjan (1967) for Russian, to see “which aspects of these classifications are universal and which are language-particular”(Malchukov, 2014:1)

The authors selected 80 verb meanings that should exemplify a representative sample of the verbal lexicon, and should show some kind of cognitive salience. These verb meanings have also been chosen because they have been reported to show distinctive syntactic behaviors (within and across languages) in the literature.

For each of the 35 languages ValPaL explores, “basic” (i.e.: frequent and not rare) counterparts verbs to the general verb meaning in the various languages are listed (e.g.: general meaning KILL, specific Italian verb *uccidere*). Each verb is then described by its coding frames, associated examples, a table indicating verb meaning, semantic micro-roles, coding sets and argument types, and valency alternations and their occurrence.

Fig. 4 shows the screenshot of the first part of the ValPaL entry for the verb *uccidere*. It consists of the coding frame of the verb, which contains information about the coding of the arguments. In the example below, the coding frame for *uccidere* is **1> V.subj[1]> 2(con+3)**. This formalized description simply means that the

¹⁷ <http://valpal.info/languages/italian>

first argument of the verb (1) is the subject; it is followed by the verb itself and by a second argument (2). The third argument (3) is the complement of a prepositional phrase headed by {con} (con+3). The entry also contains a glossed example, which illustrates the verb, its coding frames and alternations.

Then, a table illustrates other features of the verb. Verb meaning is the cross-linguistic general event of which the verb at issue is a language-specific instantiation (i.e.: KILL); the micro-roles associated with the arguments 1, 2 and 3 are the specific semantic roles of an argument of the individual verbs (e.g.: the “Killer” of a “kill” event); the coding sets are the coding means for the arguments (e.g.: argument 1, the killer, is coded as the verb subject); finally, the cross-linguistic argument types associated with the event described by the verb (e.g.: the Killer is the A-argument type, coded like the 'breaker' of 'break', the Killee is P-argument type, coded like the 'broken thing' of 'break', and the Killing Instrument is an I-argument type, coded like the instrument of 'cut').

Fig.5 exemplifies the second part of the description of the verb containing the constructions (or valency alternations) that the given verb can take. A valency alternation in ValPaL terminology is defined as “a set of two different coding frames that are productively (or at least regularly) associated with both members of a set of verb pairs sharing the same verb stem.” (Malchukov, 2014: 10)

Each alternation is associated with its name and description (by clicking on the “more info” icon), the frequency with which it occurs (“regularly, marginally, never”)

and with glossed and translated examples, for the most part constructed by the native speakers contributors of the Italian ValPaL.

The screenshot shows the ValPaL interface for the verb 'uccidere'. At the top, there is a navigation bar with tabs for 'Language contributions', 'Verb meanings', 'All Coding frames', 'Microroles', 'About', and 'Export'. Below this, there are sub-tabs for 'Italian', 'Verb forms', 'Coding frames', 'Coding sets', 'Alternations', and 'Examples'. The main heading is 'uccidere'. Under 'Coding frame', there is a box containing '1 > V.subj[1] > 2 (con+3)' and the text 'Simplex Verb form'. To the right, under 'Examples', there is a list of examples starting with '(64) L'uomo ha ucciso la vittima con una pistola.' followed by a morphological breakdown: 'l'=uom-o ra uccis-o la vittim-a con un-a pistol-a' and the translation 'The man killed his victim with a gunshot.' Below the examples is a 'show 2 more...' button. At the bottom, there is a section for 'Verb meaning, Microroles, Coding sets and Argument types' which contains a table:

#	KILL	Coding set	Argument type
1	killer	V.subj	A
2	killee	Ø	P
3	killing instrument	con+NP	I

[fig.4, lexical entry for the verb *uccidere* in ValPa]

The screenshot shows the 'Alternations' section of the ValPaL website. It includes a navigation bar similar to the previous screenshot. Below the navigation bar, there are filters for 'Filter by type' (Coded, Uncoded) and 'Filter by occurrence' (Regularly, Marginally, Never). A search box is also present. The main content area shows 'Showing 20 entries' and a table with three columns: 'Alternation name', 'Occurs', and 'Examples'. The table lists various grammatical forms of the verb 'uccidere' and their corresponding example sentences and translations.

Alternation name	Occurs	Examples
Direct Reciprocal Reflexive more info	R	(145) <i>Nel duello, i due nemici si uccisero.</i> ★ 'The two enemies killed each other in the duel.'
Direct Reflexive more info	R	(63) <i>La giovane si è uccisa.</i> ★ 'The young lady killed herself.'
Impersonal of Reflexives more info	R	(128) <i>Ci si uccide per la disperazione.</i> ★ 'One kills oneself/We/You/They (indef.) kill ourselves/yourself/themselves out of despair.'
Impersonal Passive more info	R	(731) <i>In guerra si viene uccisi senza motivo.</i> ★ 'At war, one is/we/you/they (indef.) people are killed without any reason.'
Impersonal Reflexive more info	R	(61) <i>Ai nostri giorni si uccide per futili motivi.</i> ★ 'Nowadays one kills/we/they (indef.) kill for futile reasons.' show 1 more...
Passive more info	R	(62) <i>I due testimoni saranno uccisi.</i> ★ 'The two witnesses will be killed.'
Reflexive Passive more info	R	(147) <i>La quagli-a si uccid-e così.</i> ★

[fig.5, alternations for the verb *uccidere* in ValPa]

Even though ValPaL does not provide any classification or taxonomy of verbs (in fact, the database only describes one verb for each of the basic meanings), it is extremely useful for our research since verbs are considered to profile universal events that are differently lexicalized in the various specific languages. The proposed verb forms are not hierarchically ordered, but they are supposed to represent the most salient elements of corresponding verb classes. Hence the patterns each verb take and their semantic structure is to be considered common (or at least prototypical) to all the members belonging to the class. Moreover, the formalism we use to describe the syntactic constructions associated with the semantic classes is closely inspired to the one used in ValPaL, because of its very clear link between syntactic and semantic layer (see below).

3. CLASS LAYOUT

The verb classes that were identified are described both from a syntactic and a semantic point of view, since constructions - which we regarded as the main criterion for distinguishing verb classes - are intrinsically characterized by a semantic and a syntactic layer.

This integrated method of class representation is common to VerbNet as well; however our approach differs rather significantly from VerbNet's type of representation. In fact, not only we disregarded argument alternations, but we associated each class with the corresponding FrameNet (Baker et al., 1998) conceptual frame to provide its semantic characterization. As illustrated in chapter 1,

semantic frames are defined as schematic representations of situations involving various participants, propositions, and other conceptual roles (Fillmore, 1976).

Each verb class is completely described by the corresponding Verbnet or Levin class (and the possible subclass number), its set of members, a semantic frame specifying the associated FrameNet frame, a list of constructions, (possible) typical modifiers and idiosyncratic constructions of specific verbs.

In the following sections we will describe more specifically the layout of each part of our classes, illustrating it with the example of the VERBS OF KILLING class. This particular class was chosen as an example because of its small size and because it is able to exemplify the important elements of the class layout.

3.1) CLASS NUMBER AND MEMBERS

3.1.1 VerbNet class

To underline the compatibility of our classification with the original Levin/VerbNet one, we generally maintained the name and the general properties of a specific Levin/VerbNet class (or classes). In this way, the similarities and differences between the taxonomies also emerge clearly.

For instance, our KILLING class corresponds to VerbNet 42nd class; however its subclass ASSASSINARE verbs does not precisely correspond to a VerbNet class but contains elements from the classes 42.1 and 42.2, MURDER verbs and POISON verbs (see fig. 6 and 7 below) (for a more detailed account of subclass, see below).

RETURN HOME | BACK | SEARCH VerbNet v3.2 VIEW OF: MANAGE ALL COMMENTS | UNIVERSITY OF

No Comments

murder-42.1

Members: 17, Frames: 2

POST COMMENT

CLASS HIERARCHY

MURDER-42.1

MURDER-42.1-1

MEMBERS

ANNIHILATE	ELIMINATE (FN 1, 2; WN 3; C 1)	LIQUIDATE (FN 1; WN 1; C 4)	SLAUGHTER (FN 1; WN 1, 2; C 1, 2)
ASSASSINATE (FN 1; WN 1; C 1)	EUTHANIZE	LYNCH	SLAY (FN 1; WN 1)
BUSHWHACK (WN 1; C 1)	EXECUTE (FN 1; WN 1, 2; C 1)	MASSACRE (FN 1; WN 1)	
BUTCHER (FN 1; WN 1)	EXTERMINATE	MURDER (FN 1; WN 1; C 1)	
DISPATCH (FN 1; WN 3; C 3)	IMMOLATE (WN 1)	OFF	

[fig.6, MURDER verb subclass in VerbNet]

UCCIDERE Verbs

VerbNet Classes: 42

subclass of: VERBS OF KILLING

Class Members:

Verbs	Senses
<i>ammazzare</i> "to kill"	Ammazzare qualcuno (To kill someone)
<i>uccidere</i> "to kill"	Uccidere qualcuno (To kill someone)

[fig.6a, UCCIDERE subclass in our classification]

RETURN HOME | BACK | SEARCH VerbNet v3.2 VIEW OR MANAGE ALL COMMENTS | UNIVERSES

No Comments

poison-42.2

Members: 24, Frames: 4

[POST COMMENT](#)

CLASS HIERARCHY

POISON-42.2

NO SUBCLASSES

MEMBERS

ASPHYXIATE (FN 1; WN 1)	DISEMBOWEL	HANG (FN 1; WN 3; C 2)	STAB (FN 1; WN 1; C 1)
BEHEAD	DROWN (FN 1, 2; WN 4; C 1)	IMPALE	STONE (FN 1)
BULLET	ELECTROCUTE (FN 1; WN 2)	KNIFE (FN 1; WN 1)	STRANGLE (WN 1; C 1)
CRUCIFY (FN 1; WN 1; C 1)	EVISCERATE	POISON (WN 2; C 1)	STRANGULATE (WN 1; C 1)
DART (C 4)	GARROTE (FN 1; WN 1)	SHOOT (FN 1, 2, 3; WN 2; C 1)	SUFOCATE (FN 1; WN 1)
DECAPITATE	GAS (WN 1)	SMOTHER (FN 1; WN 2; C 2)	THROTTLE (C 1)

[fig.7, POISON subclass in VerbNet]

ASSASSINARE Verbs

VerbNet Classes: 42.1, 42.2

Subclass of: VERBS OF KILLING

Class Members:

Verbs	Senses
<i>abbattere</i> "to kill [an animal]"	Abbattere un cervo (To kill a deer)
<i>affogare</i> * "to drown"	Affogare i cuccioli (To drown the puppies)
<i>assassinare</i> "to assassinate, murder"	Assassinare il presidente (To assassinate the president)
<i>crocifiggere</i> * † "to crucify"	Crocifiggere Gesù (To crucify Jesus)
<i>decapitare</i> * "to behead"	Decapitare il re (To behead the king)
<i>eliminare</i> "to eliminate"	Eliminare il nemico (To eliminate the enemy)
<i>fucilare</i> * "to shoot, execute by firing squad"	Fucilare il condannato (To shoot the convict)
<i>giustiziare</i> * "to execute"	<u>Giustiziare</u> il prigioniero (To execute the prisoner)
<i>impiccare</i> * "to hang by the neck"	Impiccare il bandito (To hang the bandit)

[fig 7a, ASSASSINARE subclass in our classification]

3.1.2 Class members

Each class is provided with a table containing the list of its members, which were for the most part found in Viola's master thesis (Lebani et al., 2014) frequency list, which we used to bootstrap the classes. However, we also added other verbs that were not part of this list and satisfy the class properties. In the alphabetically ordered lists of verbs belonging to a given class these verbs are always marked with a star to differentiate them from those belonging to the core subset, e.g.: *affogare** ("to drown) (see fig. 7a). If a verb was not present in the LexIt database, we marked it with a *crux* (e.g.: *crocifiggere*†*, see fig. 7a).

Each verb in the list is associated with a glossed example describing the sense of the verb relevant for the class. English translations of the class members¹⁸ and examples are provided as well (see fig. 6a and 7a above), possibly with their transliteration following the Leipzig Glossing Rules.

3.2) SEMANTIC FRAME

The semantic information given in VerbNet is provided by a set of thematic roles and semantics predicates, a formal description of the event and of its temporal structure. In our preliminary work, we chose not to include the latter two types of information. "Although it is difficult to determine a well-motivated set of thematic roles, our goal is to provide as much information as possible for classes, without

¹⁸The English translations of all the verbs in the present work are taken from the online dictionary Wordreference.com

details of each specific verb.” (Kipper Schuler, 2005: 30). Our description is instead based on FrameNet conceptual frames: this resource also describes the argument structures in terms of roles (the FEs), however what differentiate this approach is that such elements are specific to the concepts described by the frames: the FEs are “local to particular conceptual structures (frames); some of these are quite general, while others are specific to a small family of lexical items.” (Baker et al., 1998: 87) The overall semantic frame of our classes, thereby, is to be understood as a “conceptual, schematic representation of a situation”. (Lenci, 2014:18) Inserting FrameNet as a semantic, cognitive and conceptual reference for the classes allowed us to integrate the “ontological” taxonomies (e.g.: FrameNet), in which the features useful for verb classification are ascribable to extra-linguistic properties and encyclopedic information of the event profiled by a given verb, and the distributional ones (e.g.: Levin, 1993), which infer the linguistically relevant aspects of verb meaning from the analysis of the constructions the verb participates in.

As an example, we describe the semantic frame associated with the class of UCCIDERE verbs (fig.8).

Semantic frame: A Killer or Cause causes the death of the Victim with an Instrument

FrameNet Frame: Killing

Arguments	Roles	Semantic types
a1	Killer, Cause	
a2	Victim	Animate
a3	Instrument	

[fig.8, semantic frame of the UCCIDERE verbs subclass]

The first information that is given is a FrameNet-like description of the profiled conceptual event (“A Killer or Cause causes the death of the Victim with an Instrument”) together with the conceptual frame of reference (“FrameNet Frame: Killing”). Secondly, a table illustrating the arguments involved in the event is provided; the arguments are numbered (first, second, third etc. arguments, formalized as *a1*, *a2*, *a3*, etc.) as in ValPaL descriptions (see above). Each argument is associated with its corresponding role. We chose to adopt FrameNet’s roles because we wanted to be able to refer to a pre-existing and well established set of roles in the vast and discordant literature concerning semantic role lists.

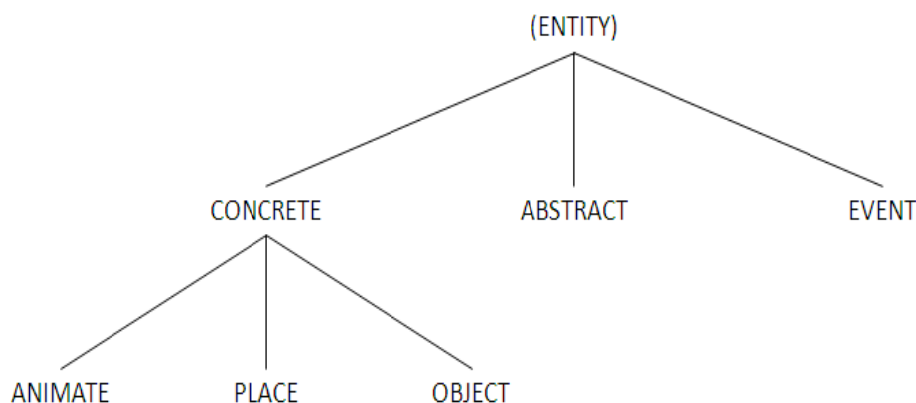
Another important element of the frame is the information about the selectional preferences of the arguments, or semantic types. We included this information since verbs often impose selectional constraints on their arguments (e.g.: Animacy constraint). We chose to explicitly mark only the cases of “strict” constraints entailed by verb semantics. For instance, as fig. 8 shows, UCCIDERE verbs require an Animate *a2*, but this constraint does not hold for *a1*. In fact, in a Killing event the

Patient (Victim) must be animated, but the Subject that carries out the profiled action is not necessary volitional and animate (a Killer) but can also be an inanimate Cause.

(6) *Gianni ha ucciso Maria (John killed Mary)*

(7) *Il terremoto ha ucciso Maria (The earthquake killed Maria)*

The selectional preferences of the arguments were defined with respect to the following ontology of semantic types presented in by Lebani and Lenci (2013). As can be seen in fig.9, the taxonomy of arguments is minimal, but linguistically plausible.



[fig. 9, taken from Lebani & Lenci, 2013]

3.3) CONSTRUCTIONS

By the cross examination of LexIt, S&C and ValPaL we were able to find the shared behavioral patterns that could be associated with each class. The constructions presented in the class layout are divided in three tables, which represent the shared argument realizations of the class, the most typical modifiers, and the possible idiosyncratic constructions specific of a single verb. To illustrate such organization the example of UCCIDERE verbs will be used.

The first table presented (*Constructions*) groups all the constructions shared by the members of the class; each construction is associated with an example and the (possible) idiosyncratic roots that block that specific pattern. The syntactic frames are represented with a formalism adapted from ValPaL (see above), which allowed us to link the syntactic layer of the constructions to the arguments described in the semantic frame. E.g.: *subj[a1]> V> obj[a2]* is the formalized description of the transitive construction. It states that the first argument is associated with the subject and is followed by the verb. After the verb comes the direct object, which is associated with the second argument.

Passive and reflexive constructions are explicitly marked according to similar conventions; e.g.: *subj[a2] > pass-V ({da}[a1])* represents the passive construction: the subject is here linked to the second argument and the verb is in the passive form. The first argument be realized as a PP complement headed by {da} (elements in parentheses are optional). Instead, *subj[a1,a2]>si- recip-V* is the representation of the reciprocal construction: here the subject is associated with both the first and second argument and is followed by the reciprocal particle “si” and by the verb. In fig. 10 we can see the constructions shared by UCCIDERE verbs.

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1] > V > obj[a2]	<i>Il rapitore uccide l'ostaggio</i> (The kidnapper kills the hostage) <i>L'incidente ammazzò sei persone</i> (the accident killed six people)	
subj[a1] > V	<i>Medusa uccide con lo sguardo</i> (Medusa kills with a glance)	
subj[a1] > V > obj[a2] > {con,a} [a3]	<i>Il rapitore <u>uccise</u> gli ostaggi con un coltello</i> (The kidnapper killed the hostages with a knife)	
subj[a1=a2:Animate] > si-dir_refl-V	<i>Cleopatra si <u>uccise</u> con il morso di un serpente</i> (Cleopatra killed	

[fig.10, a part of the table of the different constructions of our classification]

Secondly, the *Typical Modifiers* are listed: a set of the complements that we considered to be adjuncts and not arguments, but that are nevertheless closely tied to the event profiled by the class. E.g.: Causal PPs are the most typical modifiers of UCCIDERE verbs; they are not in the argument structure of the class but the “KILL” event has an extremely high probability to lexicalize a purpose or a cause for the perpetration of the action(see fig. 11). The modifiers are described by the preposition that heads the PP and introduces the complement (in curly brackets), the roles associated with such modifier and potential obligatory semantic types. Glossed example are provided for each structure.

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{per}PP	Purpose, Cause		<i>uccidere qualcuno per vendetta</i> (to kill someone for revenge)

[fig.11]

The last group of syntactic patterns is the one showing the *Idiosyncratic Constructions*, that is the most relevant constructions that are typical of a specific verb (or verbs), but are not shared by the majority of the class members. They are described by the syntactic realization of the construction and an example. If more verbs allow the given structure, they are listed in an additional column. The idiosyncratic constructions are indicated with their syntactic structure and an example.

Idiosyncratic constructions:

Construction	Examples
subj[a1] > V > obj[a2] > {di}{botte, pugni, legnate,...}	<i>Gianni ha ammazzato il ragazzo di botte</i> (John killed the boy by beating him → John beat the boy a lot)
subj[a1=a2] > si-refl-V > {di}{fatica, lavoro, studio,...}	<i>Mi ammazzo di lavoro</i> (I'm killing myself with work → I'm working to exhaustion)

[fig.12, the table illustrating the idiosyncratic constructions in our classification]

3.4) SUBCLASSES

Verb classes can be further divided into subclasses, according to semantic or syntactic criteria. If a group of verbs, all listed under a certain class, cohesively behave syntactically in a partially different way (e.g.: set of constructions allowed only by this

group and not by other members) and appear to share also some semantic properties not common to the whole class, the class at issue can be further subdivided.

It is important to note that class structure is strictly monotonic, i.e. each subclass always adds more information to, and at the same time preserves the features of, its parent class. E.g.: ASSASSINARE verbs adds further specifications to the UCCIDERE subclass, for example a necessarily animate and volitional agent. This internal monotonic hierarchical structure of classes is typical of Levin and VerbNet taxonomy as well: “a class may be subdivided according to specific syntactic frames or semantic predicates which are true only for a subset of the class members.” (Kipper-Schuler, 2005: 29).

When possible, the internal structure of the classes was kept compatible with Levin/VerbNet: in the internal subdivision we tried to follow Levin and VerbNet subclasses system. That is, we used Levin and VerbNet’s subdivisions as a starting point. However, we departed from Levin’s subdivision when the properties defined for English verbs did not apply to Italian (e.g.: subclasses based on the presence or absence of a syntactic alternation that is not possible in Italian), or when other solutions were regarded to better describe the verb behavior.

Specifically, because of the differences in syntax and semantics between the two languages new subclasses had to be added, or based on different syntactic grounds with respect to English, and existing subclasses were eliminated or heavily modified.

E.g.: the VERBS OF KILLING class is further articulated with the UCCIDERE subclass and the ASSASSINARE verbs subclass, which “merges” two VerbNet classes (41.1 and 41.2) (see fig. 7a). Moreover, unlike Levin, we excluded the POISON verbs group from the class at issue since they do not prototypically imply the death of the victim, which is the basic semantic feature of UCCIDERE and ASSASSINARE verbs.

CHAPTER 3: ITALIAN VERB CLASSES

In the previous chapters we outlined the existing approaches to verb classes and argument alternations, the seminal work of Levin (1993) and its extensions, including VerbNet (see chapter 1), and the construction-based method we chose to adopt for the present classification, with an accurate description of the online resources we used and the layout we designed to verb classes (see chapter 2). In this chapter, a first repertoire of classes of Italian verbs will be presented.

We first examined KILL verbs (class 42) to “tune” our method, since this class is not particularly numerous, has clear-cut semantic and syntactic distinctions within subclasses, and the distance between Italian and English class structure is quite small - and yet, as we discovered - there are some significant differences. The classes we present here are just a first example of how a taxonomy of Italian verbs, independent from and yet compatible with VerbNet criteria, can be achieved. It is clear that much additional work should be done to fully develop a full-blown, large-scale classification of Italian verbs.

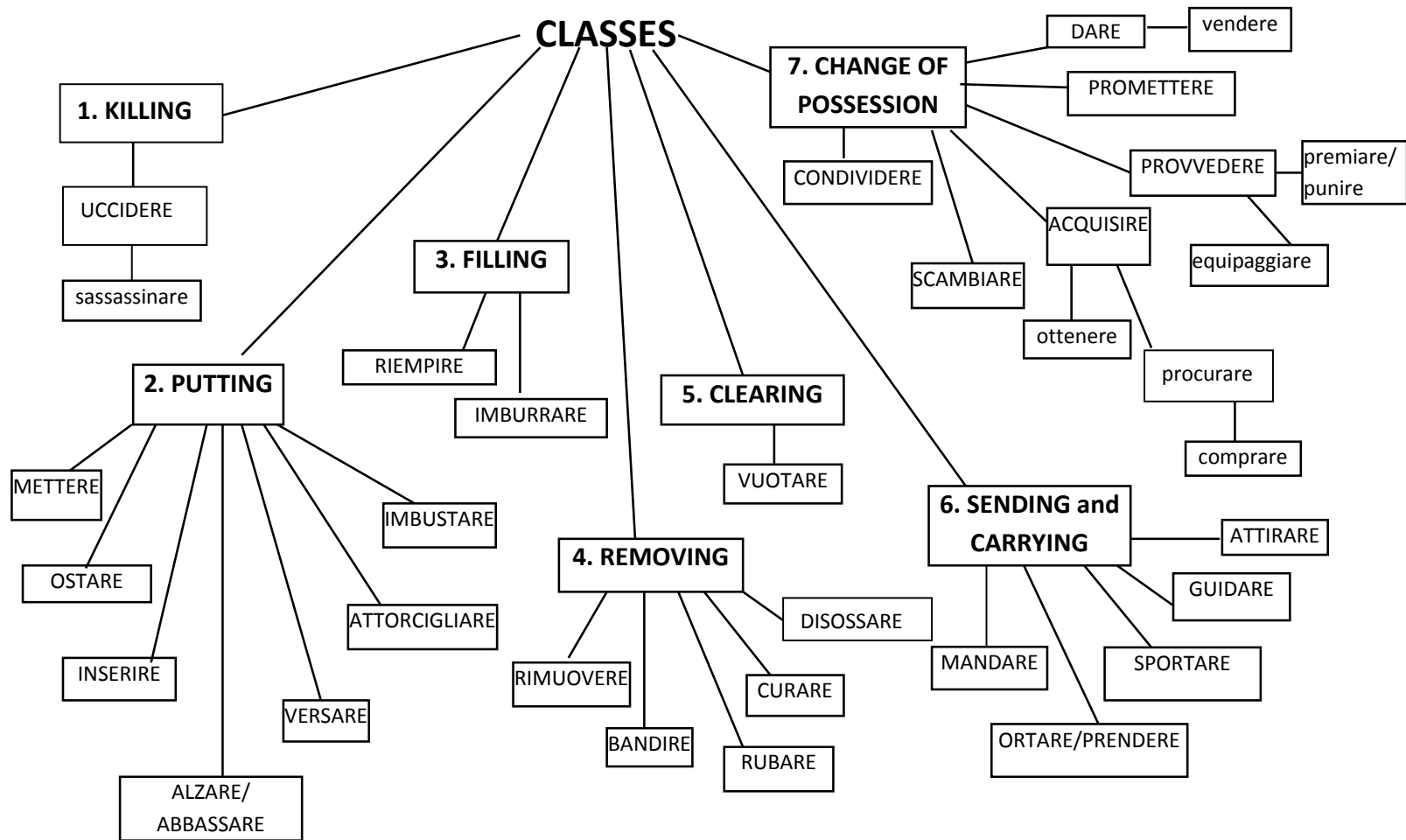
The verbs we analyzed are all transitive and, beside VERBS OF KILLING, refer to a macro-event describing a Theme being moved by an Agent or Cause. We will first present the classes according to the layout described in chapter 2, and then provide a comment for each subclass to describe the general and particular properties of the verbs and to highlight their distinctive features, the linguistic criteria used for their grouping, the differences and similarities with the

corresponding English class (if existing at all). The examples provided all come from native speaker's intuition, if not specified otherwise in the notes.

It is important to note that the verbs listed under each class are not meant to exhaustively represent all the possible members of the class. The verbs in each of our classes, as mentioned in chapter 2, come from the high-frequency list of *S&C* dictionary and from native speakers' intuition. Therefore, it is possible that in some cases only a small subset of the possible members is presented.

We maintained the original Levin/VerbNet English name for the general description of the classes (e.g.: verbs of KILLING, verbs of PUTTING, etc.), but we named each subclass with the most prototypical Italian member of the subclass at issue (e.g.: UCCIDERE verbs, METTERE verbs).

A last note to mention regards the thematic roles, in particular the distinction between Theme and Patient: we did not adopt a Patient role for all Animate a2s, but rather we characterize as Patients only the Animate objects which are completely affected by the verb (e.g. VERBS of KILLING). Therefore, an object, even if Animate, that does not fulfill this requirement will be characterized as a Theme (e.g.: VERBS of SENDING AND CARRYING).



1. VERBS of KILLING

UCCIDERE Verbs

VerbNet Classes: 42

subclass of: VERBS OF KILLING

Class Members:

Verbs	Senses
<i>ammazzare</i> "to kill"	Ammazzare qualcuno (To kill someone)
<i>uccidere</i> "to kill"	Uccidere qualcuno (To kill someone)

Semantic frame: A Killer or Cause causes the death of the Victim with an

Instrument

Framenet Frame: Killing

Arguments	Roles	Semantic types
a1	Killer, Cause	
a2	Victim	Animate
a3	Instrument	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1] > V > obj[a2]	<i>Il rapitore uccide l'ostaggio</i> (The kidnapper kills the hostage) <i>L'incidente ammazzò sei persone</i> (the	

	accident killed six people)	
subj[a3] > V > obj[a2]	<i>La mitragliatrice uccise dieci soldati</i> (The machine gun killed ten soldiers)	
subj[a1] > V	<i>Medusa uccide con lo sguardo</i> (Medusa kills with a glance)	
subj[a1] > V > obj[a2] > {con,a}[a3]	<i>Il rapitore uccise gli ostaggi con un coltello</i> (The kidnapper killed the hostages with a knife)	
subj[a1=a2:Animate] > si-dir_refl-V	<i>Cleopatra si uccise con il morso di un serpente</i> (Cleopatra killed herself with a snake's bite)	
subj[a1,a2] > si-recip-V	<i>I due nemici si uccisero a vicenda</i> (The two enemies killed each other)	
ci-si-refl-impers-V	<i>Ci si uccide per disperazione</i> (One kills oneself out of despair)	
subj[a2] > si-refl_pass-V	<i>I nemici si uccidono con facilità</i> (Enemies are killed easily)	
subj[a2] > pass-V ({da}[a1])	<i>Il soldato fu ucciso dal nemico</i> (The soldier was killed by the enemy)	
si-impers-pass-V	<i>In guerra si viene uccisi</i> (At war, one gets killed)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{per}PP	Purpose, Cause		<i>uccidere qualcuno per vendetta</i> (to kill someone for revenge)

Idiosyncratic constructions:

Construction	Examples
subj[a1] > V > obj[a2] > {di}{botte, pugni, legnate,...}	<i>Gianni ha ammazzato il ragazzo di botte</i> (John killed the boy by beating him → John beat the boy a lot)
subj[a1=a2] > si-refl-V > {di}{fatica, lavoro, studio,...}	<i>Mi ammazzo di lavoro</i> (I'm killing myself with work → I'm working to exhaustion)

Comment:

These verbs refer to the act of killing someone, without any further lexicalized specification of instrument or manner¹⁹. They are always telic and the object argument must be Animate. The subject, on the other hand, can be an inanimate Cause other than an Animate Killer. Only when the subject is Animate and agentive, however, UCCIDERE verbs admit the reflexive form; the subject thus

¹⁹ In Levin 1993 the author does not insert this class, but she just mentions in the *Murder Subclass* that “the verb kill is the class member with the least specific meaning: it lexicalizes nothing about the specific means, manner, or purpose involved in bringing about death; it also differs from the other class members in its behavior.” (Levin 1993: 231). Since in Italian there are two verbs that behave like the English *to kill*, I decided to create a new subclass given the deep similarity between these two verbs.

becomes a Victim. Moreover, these verbs allow an Instrumental subject as well: in this case, the *a3* fills the subject slot:

(1) *Il veleno nel cibo uccise tutti i commensali* (The poison in the food killed all the guests)

These verbs differ from the ASSASSINARE Verbs, with the exception of *massacrare*, in allowing an additional sense that resembles FILL Verbs. In some contexts, *ammazzare* and *uccidere* can take a PP introduced by {di} (*ammazzare di lavoro*, to kill someone with work → overload with work; *uccidere di fatica*, to kill someone with fatigue → exhaust someone etc.) the meaning of which comes close to “fill someone with something” and is hyperbolic. This construction does not entail the death of *a2*.

ASSASSINARE Verbs

VerbNet Classes: 42.1, 42.2

Subclass of: VERBS OF KILLING

Class Members:

Verbs	Senses
<i>abbattere</i> “to kill [an animal]”	Abbatere un cervo (To kill a deer)
<i>affogare*</i> “to drown”	Affogare i cuccioli (To drown the puppies)
<i>assassinare</i> “to assassinate, murder”	Assassinare il presidente (To assassinate the president)

<i>crocifiggere* † “to crucify”²⁰</i>	Crocifiggere Gesù (To crucify Jesus)
<i>decapitare* “to behead”</i>	Decapitare il re (To behead the king)
<i>eliminare “to eliminate”</i>	Eliminare il nemico (To eliminate the enemy)
<i>fucilare* “to shoot, execute by firing squad”</i>	Fucilare il condannato (To shoot the convict)
<i>giustiziare* “to execute”</i>	Giustiziare il prigioniero (To execute the prisoner)
<i>impiccare* “to hang by the neck”</i>	Impiccare il bandito (To hang the bandit)
<i>linciare* “to lynch”</i>	Linciare il colpevole (To lynch the culprit)
<i>massacrare “to slaughter”</i>	Massacrare le vittime (To slaughter the victims)
<i>trucidare* “to slay”</i>	Trucidare donne e bambini (To slay women and children)

Semantic frame: A Killer or Cause causes the death of the Victim with an

Instrument

Framenet Frame: Killing

Arguments	Roles	Semantic types
a1	Killer	
a2	Victim	Animate
a3	(Instrument) ²¹	

²⁰ As mentioned above, the star (*) indicates that the verb at issue was not found in S&C list but comes from intuition. The *crux* (†) instead is put next to verbs that are not present in the Lexit database.

²¹ The roles in brackets are the one that can be shadowed (Pustejosky, 1995: 63), that is the arguments that can be lexicalized by the verb itself.

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1] > V > obj[a2]	<i>L'uomo assassinò il Presidente</i> (The man assassinated the President)	
subj[a1] > V > obj[a2]>{con,a}[a3]	<i>L'assassino trucidò le vittime con un'ascia</i> (The killer slaughtered the victims with an ax)	
subj[a1] > pass-V ({da}[a2])	<i>Le vittime sono state massacrate a coltellate</i> (The victims were massacred with a knife)	
subj[a1=a2]> si-dir_refl-V (>{con}[a3])	<i>L'uomo si impiccò con una cravatta</i> (The man hanged himself with a tie)	<i>abbattere, massacrare, assassinare, eliminare, trucidare, linciare,giustiziare, decapitare, crocifiggere, fucilare</i>
subj[a2]> si-refl_pass-V	<i>I prigionieri si fucileranno all'alba</i> (The prisoners are to be executed by firing squad at dawn)	
si-impers-pass-V	<i>Si massacrano migliaia di agnelli per Pasqua</i>	

	(Thousands lambs are massacred for Easter day)	
--	--	--

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{per}PP	Purpose, Cause		<i>fucilare qualcuno per tradimento</i> (to shoot someone for treason)

Idiosyncratic constructions:

Construction	Examples
subj[a1] > massacrare > obj[a2] > {di}{botte, pugni, legnate}	<i>Gianni ha massacrato il ragazzo di botte</i> (John massacred the boy by beating him → John beat the boy a lot)
subj[a1] > si-massacrare > {di}{fatica, lavoro, studio,...}	<i>Mi massacro di lavoro</i> (I'm massacring myself with work → I'm working to exhaustion)
subj[a1] > affogare, impiccare > obj[a2] > {in}PP	<i>Ho affogato Gianni in mare</i> (I drowned Gianni in the sea)

Comment:

These verbs generally lexicalize something about the manner of killing (Levin 1993, and Beavers&Koontz-Garboden, 2012). However, from specific characteristics

of the members of this subclass it could be argued that a further subdivision in two additional groups may be applied; in fact, some members lexicalize a manner (*assassinare, trucidare*, etc.) and others the instrument (*crocifiggere, fucilare*, etc.) of the killing act.

They differ from UCCIDERE Verbs in taking only Agentive subjects; that is, a Cause cannot be lexicalized as subject in a construction involving a Murder verb. The only exception is *affogare*, which will be explained below. Moreover, they generally do not take the Reflexive form²², since the Victim of the act of killing is prototypically different from the Killer: *a1* cannot be co-referential with *a2*. It is interesting to note, however, that a few verbs in this class admit Reflexive Constructions:

(3) *Gianni si è impiccato* (Gianni hanged himself)

(4) *Gianni si è affogato* (Gianni drowned himself)

More generally, some verbs of the class (*impiccare, affogare*) seem to display a wider range of syntactic constructions than the others. This creates a prototype-like effect: some verbs seem to be the more central instances of this class, and others do not.

This inconsistency within the class reflects the fact that particular semantic properties of idiosyncratic roots block the realization of some constructions or vice versa the root may add different types of constructions that are not typical of the class, as examples (3) and (4) of *impiccare* and *affogare* show. In particular

²² Unless the meaning is somehow metaphorical, ironic or hyperbolic. We can however disregard these extended senses as they are not typical or frequent.

pragmatic contexts, however, some features that generally block the reflexive constructions may get cancelled. E.g.: the verb *fucilare* prototypically means “to execute [sb] by firing squad”;²³ this means that the Agent must be different from the Patient and therefore the verb does not allow any type of Reflexive construction. However, examples of Reflexive Constructions can indeed be found:

(5) *C'è chi si è fucilato da sé, (...) un modo come un altro per andarsene.*²⁴ (there are those who shot themselves with a rifle, (...) just another way to go.)

Here, the sense of the verb loses the feature [+ external_Agent] and assumes the more general meaning of “shoot”.

Moreover, some verbs do not necessarily entail the death of the Victim. It is prototypically implied, but this pragmatic implicature may be cancelled. E.g., while the verb *assassinare* necessarily profile the death of the victim, and therefore (6) is impossible, (7) shows that the verb *impiccare* can also, in specific pragmatic contexts, profile an event in which the Patient is hanged by the neck, but does not die.

(6) **I nemici assassinarono Gianni, ma per fortuna gli alleati arrivarono in tempo per salvarlo* (*The enemies assassinated Gianni, but luckily the allies arrived to save him)

²³ source: www.wordreference.com

²⁴ example taken from ‘14, by Jan Echenoz

(7) *I nemici impiccarono Gianni, ma per fortuna gli alleati arrivarono in tempo a salvarlo* (The enemies hanged Gianni, but luckily the allies arrived to save him)

ASSASSINARE verbs can take Instrumental or Causative PPs, but only *massacrare* admits the {di}PP-construction already mentioned for *KILL Verbs*. This sense, that is “exhaust someone with something”, is the only case in which *massacrare* can take the reflexive construction, “exhaust oneself with something”.

Abbatere is listed in this class under the very specific sense of “to kill an animal”- typically in a hunt or by a veterinarian.

Another interesting case are the verbs *affogare* and *impiccare*, which can also be found in a Locative construction (see table of Idiosyncratic Constructions).

(8) *Affogare Gianni in mare* (To drown Gianni in the sea)

(9) *Impiccare Gianni ad un albero* (To hang Gianni to a tree)

This behavior may be due to the particular way of killing expressed by these verbs. : *affogare* means “killing somebody by putting him into a liquid”, *impiccare* instead means “killing by suspending something at a (typically) high location” (the the English counterpart “to hang” has also the general sense of of suspending from above). In other words, these verbs have a spatial semantic component, hence the possibility to occur with a locative construction.

For *affogare*, moreover, the Locative construction seems to behave like the Cause of the death of the Victim; this is demonstrated by the fact that the

complement of the PP can also figure as non animate subject of the verb, and allows passivation:

(8) *Il Titanic ha affogato molte vite in mare* (Titanic has drowned many lives in the sea)

(9) *“La storia ha schiacciato tutto e il mare ha affogato le vite”*²⁵ (History has crushed everything and the sea drowned the lives)

(10) *“(...) è stato affogato dai marosi dell’odio”*²⁶ (He was drowned by billings of hate)

A possible explanation is that water - the most prototypical concept to fill the Location slot for the verb - can also be perceived and expressed as if it were a living organism, therefore taking on features typical of Agents, such as the ability to surface as subject in a murder event.

The cases with a non-agentive subject are rather limited, but it nonetheless represents an exception to the general rule constraining the subject of ASSASSINARE verbs to be strictly Agentive, as we mentioned above. Another interesting characteristic of *affogare* is that it is the only verb that can take both a transitive and an unaccusative construction; when the verb occurs in a transitive structure, it belongs to the ASSASSINARE verbs subclass, but when used unaccusatively it takes the meaning of “to die drowning”²⁷:

²⁵ example taken from: <http://www.italoeuropeo.it/primo-piano?start=26>

²⁶ example taken from:

http://www.cittanuova.it/429605/Passare_allaltra_riva_del_Mediterraneo.html

²⁷ the unaccusative use of *affogare* is prototypical with respect to the accusative use here described.

(11) *Gianni ha affogato Giulia* (Gianni drowned Giulia)

(12) *Gianni è affogato* (Gianni drowned)

Levin also includes in the class of Verbs of Killing a few verbs that she characterizes as POISON verbs, that “relate to actions which can be ways of killing.” (Levin, 1993:231). However, these types of verbs do not specifically entail that the result of the action is death; these verbs, in fact, express ways of generally causing harm and lexicalize a means component. They can be associated with an act of killing, in general, if the PP is omitted the meaning of the sentence seems to implicate death of the Patient, but the verb itself does not lexicalize a Killing event.

Since this fundamental difference sets the group of POISON verbs apart from the rest of the class, we decided not to include an Italian counterpart in our classification.

2) VERBS of PUTTING

METTERE verbs

VerbNet Class: 9.1

Subclass of: VERBS OF PUTTING

Class Members:

Verbs	Senses
<i>caricare</i> "load"	Caricare il fieno sul camion (To load the hay on the truck)
<i>collocare</i> "position"	Collocare il vaso sul davanzale (To position the vase on the window sill)
<i>coltivare</i> "cultivate"	Coltivare i pomodori (To cultivate tomatoes)
<i>disporre</i> "arrange"	Disporre i fiori nel vaso (To arrange the flower in the vase)
<i>installare</i> "install"	Installare un software (To install a software)
<i>mettere</i> "put"	Mettere un libro sul tavolo (To put a book on the table)
<i>piantare</i> "plant"	Piantare il basilico in giardino (To plant basil in the garden)
<i>piazzare</i> "place"	Piazzare una sentinella sulla torre (To place a sentinel on the tower)
<i>porre</i> "put, lay"	Porre qualcosa in disparte (To put something away)
<i>rimettere</i> "put back"	Rimettere un libro nella libreria (To put a book back on the library)
<i>seminare</i> "sow, spread"	Seminare il grano nel campo (To sow wheat in the field)
<i>sistemare</i> "set, arrange"	Sistemare i vestiti (To arrange clothes)
<i>situare</i> "situate"	Situare un personaggio nel contesto (To situate a character in the context)
<i>spalmare*</i> "spread, rub"	Spalmare la crema sulla pelle (To rub the moisturizer on the skin)
<i>spostare</i> "move"	Spostare il libro sul tavolo (To move the book onto the table)

Semantic Frame: An Agent places a Theme at the Goal location

Framenet Frame: Placing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	Location

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {Loc}[a3]	<i>Gianni mette il libro sul tavolo</i> (Gianni puts the book on the table) <i>La crisi immerse gli imprenditori nei debiti</i> (The crisis immersed the entrepreneurs in dept)	
subj[a1]> V> obj[a2]	<i>Il generale ha disposto i cannoni</i> (The general has placed the guns)	<i>situare</i>
subj[a1=a2]> si-dir_refl-V> {Loc}[a3]	<i>Gianni si mette a tavola</i> (Gianni puts himself at the table [lit.] → Gianni sits at the table)	<i>caricare, coltivare, seminare, situare</i>
subj[a2]> pass-V> {Loc}[a3] ({da}[a1])	<i>il miele viene messo nel tè</i> (Honey is put into tea)	
si-impers-pass-V	<i>Si è messi in punizione</i> (One gets punished)	

subj[a2]> si-refl_pass-V	<i>I vestiti si mettono nell'armadio</i> (Clothes are to be put in the wardrobe)	
subj[a1]> si-ind_refl-V >obj[a2]> {Loc}[a3]	<i>Giulia si mette lo zaino sulle spalle</i> (Giulia puts the rucksack on her shoulders)	<i>collocare, disporre, installare, piazzare, situare, spostare</i>
ci-si-refl-impers-V	<i>Ci si dispone in fila indiana</i> (One places oneself in single file)	<i>situare</i>

Idiosyncratic constructions:

Construction	Examples
subj[a1=a2]> si-dir_refl-V > C-pred	<i>Mettiti seduto!</i> (Put yourself seated → Be seated!) <i>L'atleta si piazzò secondo</i> (The athlete placed second)

Comment:

These verbs refer to the most prototypical act of putting an entity in, on or into some location. They are all telic and agentive even when in the reflexive form. Like almost all the VERBS of PUTTING class, the locative PP can be omitted in a known context, or if the argument that fills the object position is prototypical for the verb. However, not all METTERE Verbs can omit the PP; the only idiosyncratic root which does not permit the construction *subj[a1]> V> obj[a2]* is *situare*, which requires the *a3*.

An interesting case to note is *spostare*, which is cross-listed between METTERE Verbs and RIMUOVERE Verbs (see below), since it can be constructed with two PPs:

- (1) *Ho spostato l'armadio dall'ingresso al salotto* (I moved the wardrobe from the hall to the living room) subj[a1]> V> obj[a2]> {da}PP1> {a}PP2

When taking both the Locative PPs or only PP2, *spostare* is listed among METTERE Verbs. When taking just PP1 or when omitting both the PPs, the verb belongs to the RIMUOVERE class. Therefore it can be said that in the class at issue the verb cannot omit its Locative PP, or it would have to be classified otherwise.

One of the major innovation of the present work with respect to the current literature is that we chose not to include a SPRAY/LOAD subclass in our classification, but rather to cross-classify the verbs roughly corresponding to English SPRAY/LOAD in the two classes of PUTTING and FILLING verbs (see below)²⁸.

English SPRAY/LOAD verbs have been at the center of a wide linguistic debate, and have been often defined only in terms of alternations (e.g. Rappaport and Levin 1988, Levin 1993):

- a. *Jack sprayed paint on the wall.* (locative variant)
- b. *Jack sprayed the wall with paint.* (with variant)

[from Levin, 1993: 51]

²⁸ These verbs are: *caricare, coltivare, piantare, seminare, spalmare*.

However, Goldberg (1995, 2002) and Boas (2003) provide an account of English SPRAY/LOAD verbs that do not take argument alternations as a primary mean of classification. In the traditional approach, such verbs were understood to show what is usually called the “holistic/partitive” effect:

(2) *Ho caricato un camion di paglia* (I loaded a truck with hay) → holistic

(3) *Ho caricato la paglia nel camion* (I loaded hay on the truck) → partitive

In (3) the action performed by the verb does not affect entirely the Location; that is, the meaning of the sentence can be roughly explained as “I put something in a location”. Therefore, the semantic frame of reference will be a PUTTING frame. The construction in (2), on the other hand, is associated with a “holistic” or “affected” interpretation, where the action of the verb involves the Location as a whole. That is, “the location is understood to be in some sense completely affected by the action”(Levin 1993:118). These verb refer to a FILLING semantic frame, in which *a2* is totally filled with the content expressed by *a3*. Given the two distinct senses of this group of verbs and their different semantic behavior, we decided to split them in the two aforementioned classes. In fact, this subdivision works according to our basic claim: alternations are epiphenomena, and what has to be considered is each construction by itself, and the semantic frame it evokes.

In sum, we have two different classes (VERBS of PUTTING and of FILLING) between which we cross-classified the Italian counterparts of SPRAY/LOAD verbs; this allows us to consider each construction and each sense of this group of verbs separately and independently.

ACCOSTARE VERBS

VerbNet Classes: 9.2

Subclass of: VERBS OF PUTTING

Class Members:

Verbs	Senses
<i>accostare</i> "put close"	Accostare il tavolo al muro (To put the table close to the wall)
<i>allineare</i> "align"	Allineare le bottiglie (To align bottles)
<i>appendere</i> "hang"	Appendere la giacca (To hang the jacket)
<i>appoggiare</i> "lean"	Appoggiare la sedia alla porta (To lean the chair to the door)
<i>sospendere</i> "hang up"	Sospendere un filo (To hang a wire)

Semantic Frame: An Agent places a Theme at the Goal location

Framenet Frame: Placing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	Location

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Gianni ha appoggiato il bicchiere</i>	

	(John has laid the glass)	
subj[a2]> V> {Loc}[a3]	<i>Il quadro è appeso alla parete</i> (The painting hangs from the wall)	
subj[a1=a2]> si-dir_refl-V> {Loc}[a3]	<i>Gianni si è appoggiato al muro</i> (Gianni leaned against the wall)	<i>sospendere</i>
subj[a1]> si-ind_refl-V> obj[a2]> {Loc}[a3]	<i>Gianni si accostò una mano alla fronte</i> (Gianni put his hand on his forehead)	<i>allineare, sospendere</i>
subj[a2]> pass-V > ({da}[a1])	<i>Il quadro è stato appeso da Gianni</i> (The painting was hanged by Gianni)	
si-impers-pass-V	<i>Si è appesi ad un filo</i> (One is hanged by a thread)	
ci-si-impers-V	<i>Ci si appende ai rami</i> (We hang ourselves to the branches)	
subj[a2]> si-refl_pass-V	<i>I quadri si appendono dritti</i> (paintings are to be hanged straight)	

Idiosyncratic constructions:

Construction	Examples
subj[a1]> V	<i>Ho accostato</i> (I pulled over)

Comment:

These verbs refer to putting an entity at some location, specifically in contact with another entity. What sets them apart from the rest of the class is the fact that they also specify the spatial configuration that the placed entity takes with respect to the surrounding environment. Moreover, another distinguishing feature of this subclass is that they also allow an intransitive construction, which is instead impossible for *METTERE* verbs:

(1) *Ho appeso il quadro al muro / Il quadro è appeso al muro* (I hanged the painting on the wall/ The painting hangs from the wall)

(2) *Ho messo il libro sul tavolo/ *Il libro è messo sul tavolo* (I put the book on the table/ *The book is put on the table)

When these verbs are constructed transitively they are telic, but when they take the intransitive form their Aktionsart changes, and the profiled event is a state. That is, the two constructions are also considerable as the variants of the Causative alterations, in which the intransitive form is generally understood “as a change-of-state event undergone by some entity, and the transitive use denotes that this change of state event has been brought about or caused by some different entity” (Schäfer, 2009: 641). This reflects also on the auxiliary the verb takes in compound tenses (*avere*, “to have” for the transitive form and *essere* “to be” for the intransitive); that is, the intransitive form is unaccusative (Perlmutter, 1978; Jezek, 2003)

(1) *Gianni ha appeso il quadro ieri* (Gianni hanged the painting yesterday)

(2) *Il quadro è appeso lì da sempre* (The painting has been hanging there since forever)

They all allow Reflexive constructions apart from *sospendere*, which seems only to have the active form: the root of the verb does not allow *a1* and *a2* to co-refer, even if the constraint may be cancelled in particular pragmatic contexts:

(3) *Marina Abramovic (...) si sospende nel vuoto avvolta da pitoni* (Marina Abramovic (...) suspends herself mid-air wrapped up in pythons)²⁹

The verb *accostare* can omit not only *a3* but also *a2* when it means “to pull over”. The direct object is prototypically a vehicle and it’s inferred by the context.

(4) *Ho notato che la polizia mi seguiva, quindi ho accostato* (I noticed the police was following me, so I pulled over)

This case of object omission, like many can be found in the verbs analysed in this work, is referable to what Lo Duca (Lo Duca, 2000:232) calls ‘*definite null objects*’, which pertains to verbs “that only allow the intransitive variant if P is recoverable from the linguistic context (anaphoric null object) or from discourse (deictic null object)” (Cennamo, 2011: 27). The shadow argument is signaled in brackets in the Semantic Frame role list.

²⁹ Example taken from S.Chinzari & P.Ruffini, 2000: 155. *Nuova scena italiana: il teatro delle ultime generazioni*, Castelvechi.

INSERIRE VERBS

VerbNet Classes: 9.3

Subclass of: VERBS OF PUTTING

Class Members:

Verbs	Senses
<i>chiudere</i> "close, enclose"	Chiudere qualcuno in manicomio (To close somebody in an institute)
<i>immergere</i> "immerge"	Immergere un corpo in acqua (To immerse a body in water)
<i>imprimere</i> "impress"	Imprimere il sigillo nella cera (To impress the seal in the wax)
<i>infilare</i> "insert"	Infilare un piede nella scarpa (To insert a foot in a shoe)
<i>inserire</i> "insert"	Inserire la chiave nella serratura (To insert the key in the keyhole)
<i>introdurre</i> "introduce"	Introdurre gli ospiti nel salone (To introduce the guests in the parlor)
<i>rinchiudere</i> "shut in"	Rinchiudere qualcuno in prigione (To shut someone in jail)

Semantic Frame: An Agent places a Theme at the Goal location

Framenet Frame: Placing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	Location

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {in}[a3]	<i>Ho infilato la chiave nella serratura</i> (I've inserted the key in the keyhole)	
subj[a1]> V> {in}[a3]	<i>Gianni è immerso in acqua</i> (Gianni is immersed in water)	<i>introdurre</i>
subj[a1=a2]> si-dir_refl-V > {in}[a3]	<i>Gianni si introdusse in casa</i> (Gianni inserted himself in the house → entered the house)	
subj[a1]> si-ind_refl-V> obj[a2]> {Loc}[a3]	<i>Giulia si infila la penna in tasca</i> (Giulia slipped the pen in her pocket)	<i>immergere, rinchiudere</i>
subj[a2]> pass-V > {in}[a3] ({da}[a1])	<i>La penna usb è stata inserita nel computer</i> (The pen-drive was inserted in the computer)	
si-impers-pass-V	<i>Si è introdotti in società</i> (One gets introduced in society)	
ci-si-impers-V	<i>Ci si infila attraverso i buchi nella rete</i> (We can insert ourselves [lit.] → we can pass through the holes in the fence)	
subj[a2]> si-refl_pass-V	<i>Le chiavi si infilano nella serrature</i> (Keys are to be inserted in keyholes)	

Comment:

These verbs refer to putting an entity in a (typically) secluded location. They characteristically take {in} as a locative preposition, but can be also found with a limited range of prepositions as *sotto*, *dentro* etc. A few of these verbs, as *immergere* or *chiudere*, can either take transitive and intransitive (unaccusative) forms, as in the previous subclass, and their aktionsart changes accordingly.

(1) *Gianni immerge il giocattolo nell'acqua* (Gianni immerses the toy in the water)

(2) *Il giocattolo è immerso nell'acqua* (The toy is immersed in water)

The other verbs, however, maintain their telic aktionsart no matter the syntactic constructions they participate in.

Chiudere is here used with the sense of “confine into a secluded location”, but it can also take a sense better represented by the ATTORCIGLIARE verbs subclass, and is accordingly cross-listed.

Several English FUNNEL verbs are cross-listed with VERBS of REMOVING: “some of these verbs can also be used as verbs of removing, taking *from*.”(Levin, 1993:114) However, no member of the Italian INSERIRE verbs allows such cross-classification. Furthermore, the English equivalent of *infilare* and *introdurre* are not present in Levin’s classification.

Some verbs also show the Indirect Reflexive construction³⁰. The verbs *immergere* and *rinchiudere* do not allow this kind of structure: this may be caused by a constraint in their root, blocking the Indirect Reflexive (but allowing the Direct one).

ALZARE/ABBASSARE VERBS

VerbNet Classes: 9.4

Subclass of: VERBS OF PUTTING

Class Members:

Verbs	Senses
<i>alzare</i> “to raise”	Alzare una bandiera (To raise a flag)
<i>abbassare</i> “to lower”	Abbassare la saracinesca (To lower the shutter)
<i>calare</i> “to lower”	Calare una scialuppa in mare (To lower a life boat in the sea)
<i>deporre</i> “to put down”	Deporre la borsa sul pavimento (To put down the bag on the floor)
<i>elevare</i> “to raise”	Elevare l’anima al cielo (To raise the soul to Heaven)
<i>levare</i> “to lift”	Levare i calici (To lift glasses)
<i>sollevare</i> “to lift”	Sollevare quaranta kg (To lift 40 kilos)

³⁰ The use of the reflexive pronoun *si* with (di)transitive verbs. *Si* is an argument of the verb, co-referent with the agentive A subject, denoting either the Goal/Beneficiary of the verbal activity or Possession in its canonical realizations. In its non-canonical realizations, *si* is not an argument of the verb, but denotes the degree of involvement/participation of the subject in the verbal activity (so-called Benefactive/Ethic Dative), frequently used in informal registers (Cennamo 2011, Cennamo and Fabrizio 2013)

Semantic Frame: An Agent places a Theme at the Goal location

Framenet Frame: Placing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	Location

Constructions:

Syntactic frames	Examples	Roots not taking the construction
subj[a1]> V> obj[a2]> {Loc}[a3]	<i>Giulia solleva le mani sopra la testa</i> (Giulia lifts her hands above her head) <i>Il vento solleva le foglie morte</i> (the wind lifts the dead leaves)	
subj[a1]> V> obj[a2]	<i>La fanciulla abbassò gli occhi</i> (The maid lowered her eyes)	
subj[a1]> si-dir_refl-V >{Loc}[a3]	<i>Lo speleologo si cala nella grotta</i> (The speleologist lowers himself in the cave → descends in the cave)	<i>deporre</i> ([a1][+animate])
subj[a2]> pass-V > ({da}[a1])	<i>La polvere è sollevata dal vento</i> (Dust is lifted by the wind)	
si-impers-pass-V	<i>Si è sollevati dal vento</i> (One gets raised by the wind)	
ci-si-impers-V	<i>Ci si cala con le funi</i> (One lowers	

	oneself → descend with ropes)	
subj[a2]> si-inacc-V	<i>La saracinesca si è abbassata per il vento</i> (The shutter has lowered for the wind)	<i>calare, elevare</i>
subj[a2]> si-refl_pass-V	<i>I pesi si sollevano lentamente</i> (Weights are to be lifted slowly)	

Idiosyncratic constructions:

Construction	Examples
subj[a1]> V> obj[a2] ({{contro}}{il padrone, il governo, ...})	<i>il sindacalista sollevò gli operai contro il padrone</i> (the trade unionist roused the workers against the master)
subj[a1=a2]> si-refl-V> ({{contro}}{la legge, la riforma, la guerra, ...})	<i>Gli studenti si sono sollevati contro la riforma della scuola</i> (the students roused against the school reform)
subj[a1]> si-ind_refl-V > {a}inf.	<i>Gianni si è abbassato ad aiutarmi, una volta tanto</i> (Gianni lowered himself → stoop so low as to help me, for once)
subj[a1]> V > {a} C-pred	<i>Gli egizi elevarono il gatto a divinità</i> (The Egyptians raised the cat to be a god)

Comment:

These verbs refer to putting an entity somewhere by moving it with a specified direction. As Cowper (1990) suggests, these verbs typically imply “exerting a force against the action of gravity” (Levin 1993: 115). However, the force may also be exerted according with gravity. Most of these verbs allow a Reflexive Construction with a Theme occupying the subject slot.

Sollevare, levare and *deporre* all take a Locative PP. The verb *deporre* seems not to allow the reflexive form with an animate (and agentive) a1, but only with a thematic (and inanimate) one:

(1) *Il limo si depone sul letto del fiume.* (The silt sediments on the river bed)

This particular constraint is possibly caused by the semantics of the root: this verb does not strictly imply a motion “against the action of gravity” (see above), but seems to lexicalize an event where the subject is typically understood as not-animate or not animate-like; pragmatic context can however cancel the implication:

(2) *Io non depongo i miei beni ai piedi della croce, se prima, non mi sono deposto io stesso* (I do not lay down my possessions at the feet of the cross if I have not laid myself first)³¹

Deporre seems to behave similarly to *depositare* (see below): their intransitive constructions both refer to an entity, typically a natural object, softly falling or being laid down onto something. This similarity is perhaps given by the fact that the Theme filling the subject position must be inanimate, yet capable of semi-spontaneous movement (as rain, dust, sand etc).

The verbs in this subclass (beside *calare* and *elevare*) also occur in an unaccusative construction with the particle *si*.

(3) *Il vestito si è sollevato con la brezza* (The dress lifted with the breeze)

³¹ example taken from: www.abbaziaborzone.it/2011/11/30/il-vissuto-della-prima-comunita

The roots that do not admit this construction are the ones that require an Agentive subject.

(4) Ho calato una corda nel pozzo (I lowered a rope in the well)

(5) *La corda si è calata nel pozzo (*The rope lowered in the well)

Another particular construction of this subclass concerns the verb *abbassare* (“to lower”), which in its Indirect Reflective form can take an infinitive phrase headed by the preposition {a}. This structure assumes the meaning “stoop so low as to/ abase oneself enough to.”³² The verb *elevare* can take a metaphorical meaning which can take a Predicative, in the sense of “to raise someone/something to be”.

VERSARE VERBS

VerbNet Classes: 9.5

Subclass of: VERBS OF PUTTING

Class Members:

<i>rovesciare</i> “topple”	Rovesciare il bicchiere (To topple the glass)
<i>spargere</i> “spread”	Spargere la vernice sul muro (To spread paint on the wall)
<i>riversare</i> * “pour, dump”	Riversare le frustrazioni su qualcuno (To pour one’s dissatisfaction on someone)
<i>versare</i> “pour, spill”	Versare il vino sulla tovaglia (To pour wine on the table cloth)

³² translations taken from www.wordreference.com

Semantic Frames: An Agent or a Cause causes a Fluid to move from a Source to a Goal

Framenet Frame: Cause_Fluidic_Motion

Arguments	Roles	Semantic types
a1	Agent, Cause	
a2	Fluid	Substance
a3	Goal Area	Location

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {Loc}[a3]	<i>Giulia versa il vino nel mio bicchiere</i> (Giulia pours wine in my glass) <i>La nave rovescia carburante in mare</i> (the ship dumps fuel in the sea)	
subj[a1]> V> obj[a2]	<i>I fiori spargono un buon profumo</i> (flowers diffuse a very good smell) <i>Ho versato troppe lacrime per lui</i> (I shed too many tears for him)	
subj[a2]> si_anticaus-V	<i>Il vino si sparge sul tappeto</i> (Wine spreads on the carpet)	
subj[a1]> si-ind_refl-V> obj[a2]> {su}PP	<i>Le prefiche si spargevano cenere sui capelli</i> (The ancient roman mourners used to spread ash on their hair)	
subj[a2]> pass-V> ({da}[a1])	<i>L'acqua viene versata sull'incendio</i>	

	(Water is being poured on the fire)	
subj[a2]> si-refl_pass-V	<i>L'impasto nell'olio si versa quando è bollente.</i> (The dough is to be poured into the oil when it is boiling)	
ci-si-impers-V	<i>Ci si riversa in spiaggia d'estate</i> (We topple ourselves in [lit.] → we crowd the beach in the summer)	

Comment:

These verbs refer to putting an entity – typically a substance or liquid- into containers or on surfaces. They admit the Reflexive Passive construction but not the Impersonal Passive nor the Direct Reflexive ones, since the direct object is necessarily an inanimate entity.

VERSARE verbs allow the Anticausative Construction, which is understood to be “a coded valency decreasing operation marked by the reflexive morpheme *si*, whereby the original P argument/object of a transitive verb surfaces as subject.” (Cennamo, M. & Fabrizio, C. 2013). The event described in the Anticausative construction takes place spontaneously, without an external causer in the lexical representation of the verb (Koonz-Garboden 2009). In English as well POUR verbs allow Anticausatives, in fact the members of this subclass are said to participate in the Causative alternation:

(1) *Giulia versa il vino* (Julia pours wine)

(2) *il vino si versa* (Wine pours) → Anticausative construction

The verb *rovesciare* (here used in the sense of “to spill”, “to dump”) is cross-listed with RIMUOVERE verbs (see below).

ATTORCIGLIARE VERBS

VerbNet Classes: 9.6

Subclass of: VERBS OF PUTTING

Class Members:

Verbs	Senses
<i>arrotolare</i> * “roll, coil”	Arrotolare una sciarpa (To roll a scarf)
<i>avvolgere</i> “coil, roll, wrap”	Avvolgere il tappeto (To roll the carpet)
<i>attorcigliare</i> * “twirl”	Attorcigliare la corda (To twirl the rope)

Semantic Frame: An Agent places a Theme at the Goal location

Framenet Frame: Placing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	Location

Constructions:

Syntactic frames	Examples	Roots not taking the construction
subj[a1]> V > obj[a2]	<i>Gianni avvolge la corda</i> (Gianni rolls up the rope) <i>La nebbia avvolge la collina</i> (Fog wraps → surrounds the hill)	
subj[a1]> V> obj[a2]> {intorno a}[a3]	<i>La bambina attorciglia i capelli intorno alle dita</i> (The girl twirled her hair around her fingers)	
subj[a1=a2]> si-dir_refl-V> {in}[a3]	<i>Non vedo l'ora di arrotolarmi in una coperta!</i> (I'm looking forward to rolling myself in a blanket)	
subj[a1=a2]> si-dir_refl-V> {intorno}[a3]	<i>L'edera si attorciglia intorno al tronco</i> (Ivy twirls around the log)	
subj[a2]> pass-V> {{da}[a1]}	<i>Il nastro viene avvolto intorno al palo</i> (the ribbon is been wrapped around the pole)	
si-impers-pass-V	<i>Si viene avvolti da una coperta calda</i> (One gets wrapped into a warm blanket)	
ci-si-impers-refl-V	<i>Ci si avvolge in un abbraccio</i> (We wrapped each other in a hug)	
subj[a2]> si-refl_pass-V	<i>La corda si avvolge intorno al palo</i> (Rope is to be wrapped around the pole)	

Comment:

These verbs refer to putting an entity around something or someone. The Theme occupying the *a2* spot must therefore be “foldable”: something that can be coiled around the Goal Location (a rope, a ribbon, a plant, etc.).

Due to their meaning, AVVOLGERE verbs (like English COIL verbs) are found with a more limited range of prepositions heading the locative PP with respect to other verbs of PUTTING. The most prototypical are {in, intorno}.

AVVOLGERE verbs allow Direct Reflexives, since *a1* and *a2* can co-refer; in fact, these verbs do not require a volitional animate subject, nor an inanimate object: therefore we can find both Direct reflexive structures with an Animate subject (as in (1)), and with a non Animate subject (as in (2)).

(1) *“Mi attorciglio intorno alla mia irrequietezza”*³³ (I coil myself around my restlessness)

(2) *Il rampicante si attorciglia intorno alla colonna* (The vine coils [itself] around the pillar)

The verb *avvolgere* is cross-listed with the RICOVERARE subclass (see below).

³³ example taken from: <http://aforisticamente.com/2014/11/27/scrittori-di-aforismi-su-twitter-laradiceno/>

IMBUSTARE VERBS

VerbNet Classes: 9.10

Subclass of: VERBS OF PUTTING

Class Members:

Verbs	Senses
<i>avvolgere</i> "envelop"	Avvolgere un pacco (To envelop a package)
<i>custodire</i> "guard,shield"	Custodire un segreto (To guard a secret)
<i>depositare</i> "deposit"	Depositare i soldi in banca (To deposit money in the bank)
<i>imbarcare</i> "board"	Imbarcare passeggeri (To board passengers)
<i>imbustare*</i> "package, put in an envelope"	Imbustare una lettera (To put a letter in the envelope)
<i>incartare*</i> "wrap"	Incantare un regalo (To wrap a gift)
<i>parcheggiare</i> "park"	Parcheggiare la moto (To park the bike)
<i>ricoverare</i> "admit, shelter"	Ricoverare qualcuno in ospedale (To admit someone in the hospital)

Semantic Frame: An Agent places a Theme at the Goal location

Framenet Frame: Placing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	(Goal)	Location

Constructions:

Syntactic frames	Examples	Roots not taking the construction
subj[a1]> V> obj[a2]	<i>Gianni imbusta la lettera</i> (Gianni puts the letter in an envelope)	
subj[a1]> V> obj[a2]> {in}[a3]	<i>L'uomo depositò i suoi soldi in banca</i> (The man deposited his money in the bank) <i>Il fiume deposita detriti sulle rive</i> (the river sediments debris on its shore)	
subj[a1=a2]> si-dir_refl-V > {in}[a3]	<i>Mi sono ricoverata in ospedale</i> (I admitted myself at the hospital)	<i>custodire</i> , <i>depositare</i> ([a1][+animate]), <i>imbustare</i>
ci-si-impers-refl-V	<i>Ci si ricovera quando si sta male</i> (One admits oneself when one is sick)	<i>imbustare</i>
subj[a2]> V > {in}[a3] ({da}[a1])	<i>Il bambino è stato ricoverato in ospedale</i> (The boy was admitted at the hospital) <i>I soldi sono stati depositati in banca</i> (the money was deposited at the bank)	
si-impers-pass-V	<i>Si depositano fondi in banca</i> (Funds are deposited in the bank)	
subj[a2]> si-refl_pass-V	<i>I fondi si depositano in banca</i> (Funds are to be deposited in the bank)	

Comment:

These verbs refer to putting an entity in a (typically) closed location. They are for the most part denominals (with the exception of *avvolgere*), deriving from the noun referring to the most typical location where the entity can be put (for example, the verb *depositare* comes from the noun *deposito*). They all allow Locative Phrases, but the main syntactic characteristic that sets this subclass apart from the rest of the VERBS of PUTTING class is the complete optionality of the locative PP. This is due to the fact that these verbs typically lexicalize the location, which is therefore more easily omitted than in other subclasses.

(1) **Ho messo un libro* (*I put a book)

(2) *Ho parcheggiato l'auto* (I parked my car)

However, if the verb in question presents a locative PP, the Locatum must be different from the noun which the verb is derived from, otherwise the PP is omitted. This characteristic resembles verbs which cannot take an Instrumental PP unless the argument of the phrase is different from the instrument they already lexicalize.

(3) *Ho parcheggiato l'auto in giardino* (I parked the car in the garden)

(4) * *Ho parcheggiato l'auto nel parcheggio* (*I parked my car in the parking-lot).

These verbs are instances of a quite common phenomenon: in some cases a verb's meaning already incorporates one of its argument. Such arguments are commonly called 'shadow arguments' (Pustejosky, 1995: 63)

Some verbs in this subclass also allow a non-animate *a1*:

(5) *Lo scrigno custodisce il tesoro* (The chest guards the treasure)

The *a2*-object position is occupied by an Animate entity for some verbs of the subclass, the most typical example being *ricoverare*. Other verbal roots show a more loose constraint on the Animacy of *a2*: the verb *imbarcare*, for example, allows both types of direct objects:

(6) *Abbiamo imbarcato i passeggeri* (We took on board the passengers)

(7) *Abbiamo imbarcato tutte le macchine* (We have embarked all the cars)

Depositare, *parcheggiare* and *imbustare* appear to admit only non animate objects, at least in their most prototypical, non figurative usages. Predictably, the verbs that take an Animate object allow the Direct Reflexive Construction:

(7) *Mi sono ricoverato in ospedale* (I admitted myself at the hospital)

However, some of the verbs with non animate objects show some instances of this structure too. The aforementioned verb *depositare* shows the Reflexive Construction with non animate *a1*.

(8) *La polvere si deposita sui mobili* (Dust deposits itself on the furniture)

Depositare, in its intransitive uses, seems to behave similarly to *deporre*: the subject of the Reflexive form is inanimate yet capable of movement, as in (8) (see above in the ALZARE/ABBASSARE subclass).

The verb *parcheggiare* allows the Reflexive form, but only with Animate *a2*. When this verb takes an animate object, its sense slightly differs from the most prototypical one, and it takes a figurative meaning:

(9) *I genitori hanno parcheggiato il figlio dai nonni* (The parents have parked their son at his grandparents')

As (9) shows, *parcheggiare + a2[+animate]* means “to provisionally place someone or something somewhere, especially to get rid of it”³⁴. Hence, only in this sense the verb admits the Reflexive Construction:

(10) *Giulia si è parcheggiata a casa mia tutto il pomeriggio* (Giulia has parked herself → has stayed unwanted at my house the whole afternoon)

Other verbs, such as *imbustare*, do not take the Reflexive form, since they do not admit a coreferential *a2* and *a1*. The verbs in this subclass are all telic.

3) VERBS of FILLING

RIEMPIRE VERBS

VerbNet Classes: 9.8

Subclass of: VERBS OF FILLING

Class Members:

Verbs	Senses
<i>caricare</i> “load”	Caricare il camion (To load the truck)
<i>coltivare</i> “cultivate”	Coltivare il campo (To cultivate the field)
<i>coprire</i> “to cover, to smother”	Coprire qualcuno di baci (To smother someone with kisses)
<i>piantare</i> “plant”	Piantare un orto (To plant a vegetable garden)
<i>riempire</i> “to fill”	Riempire la vasca (To fill the bath tub)

³⁴ explanation taken from Sabatini-Coletti Italian definition of the verb “parcheggiare”

<i>seminare</i> “sow, spread”	Seminare il campo (To sow the field)
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Semantic Frames: An Agent fills a container (the Goal) with a Theme

FrameNet Frame: Filling

Arguments	Roles	Semantic types
a1	Agent	
a2	Goal	
a3	Theme	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V > obj[a2]> {a, di, con}[a3]	<i>Gianni riempie il camion di paglia</i> (Gianni fills the truck with straw) <i>Gianni semina il campo a patate</i> (Gianni seeds the field with potatoes) <i>La pioggia ha ricoperto le strade di fango</i> (the rain covered the streets in mud)	
subj[a3]> V> obj[a2]	<i>La paglia riempie il camion</i> (straw fills the truck)	
subj[a1=a2]> si-dir_refl-V > {di}[a3]	<i>Giulia si è riempita di polvere</i> (Giulia filled herself with dust → she got dusty)	<i>caricare, coltivare, piantare, seminare</i>
subj[a2]> si_anticaus-V	<i>Il negozio si riempie di clienti</i> (the	<i>coltivare, piantare,</i>

>{di}[a3]	store fills itself with clients → fills with clients)	<i>seminare</i>
subj[a2]> pass-V> {a, di, con}[a3] ({da}[a1])	<i>Il mare è stato ricoperto di petrolio</i> (the sea has been covered in oil)	
subj[a1]> si-ind_refl-V> obj[a2] ({di}PP)	<i>Mi sono riempito il bicchiere di vino</i> (I filled the glass of wine by myself)	
ci-si-refl-impers-V	<i>Ci si riempie continuamente il bicchiere</i> (One constantly fills one's glasses)	
si-impers-pass-V	<i>Si viene riempiti di botte</i> (One gets filled with blows [lit.] → One gets severely beaten)	<i>piantare, seminare</i>
subj[a2]> si-refl_pass-V	<i>I bicchieri si riempiono per tutta la notte</i> (Glasses were filled all night long)	

Idiosyncratic constructions:

Construction	Examples
subj[a1]> si-refl-V > {di}[a2]	<i>Mi sono caricata di libri</i> (I burdened myself with books)

Comment:

In Levin (1993) FILL verbs are considered a subclass of VERBS of PUTTING, as they “describe the resulting state of a location as a consequence of putting something on it or in it” (Levin 1993: 120). In Framenet, however, FILL verbs form an autonomous class. We share FrameNet’s vision: verbs of FILLING and of PUTTING

are different classes, evoking different inferences; in particular, verbs of FILLING are understood to be prototypically holistic, while verbs of PUTTING obviously are not. The verbs in the FILLING class relate “to filling containers and covering areas with something, things or substance, the Theme. The area or container can appear as the direct object with all these verbs, and is designated Goal because it is the goal of motion of the Theme.”

Since they describe a resulting situation, these verbs alternate telic and stative senses: when “the Locatum, that is the argument of the PP, occupies the subject slot, the sentence can be understood as a state (Jackendoff, 1990)”. The *a1*-subject can be also expressed by a Location, resulting in an atelic sense as well. These verbs can also take the Anticausative Construction (see table above).

As already explained above, some verbs like *caricare*, which are typically grouped in an autonomous SPRAY/LOAD class, have been assigned here to both the RIEMPIRE and the METTERE subclasses.

The verb *chiudere* (here in the English sense “to enclose”) is cross-listed with *Funnel Verbs* and can also have an intransitive meaning.

IMBURRARE VERBS

VerbNet Classes: 9.8

Subclass of: VERBS OF FILLING

Class Members:

Verbs	Senses
<i>asfaltare*</i> "asphalt"	Asfaltare una strada (To asphalt a road)
<i>imburrare*</i> "butter"	Imburrare un toast (To butter a toast)
<i>oliare*</i> "oil"	Oliare una serratura (To oil a lock)
<i>pepare*</i> "season"	Pepare un piatto (To season a dish)
<i>salare*</i> "salt"	Salare la carne (To salt meat)

Semantic Frame: An Agent fills a container (the Goal) with a Theme

FrameNet Frame: Filling

Arguments	Roles	Semantic types
a1	Agent	Animate
a2	Goal	
a3	(Theme)	

Constructions:

Syntactic Frames	Examples
subj[a1]> V > obj[a2]> {a, di, con}[a3]	<i>Giulia imburra il pane con il burro salato</i> (Giulia butters the bread with salted butter)
subj[a3]> V> obj[a2]	<i>Gianni imburra il panino</i> (Gianni butters the

	sandwich)
subj[a2]> pass-V> {{da}[a1])	<i>La strada è stata asfaltata solo di recente</i> (The road was only recently asphalted)
subj[a2]> si-refl_pass-V	<i>La pizza si sala da cotta</i> (Pizza is to be salted when cooked)

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{con}PP	Instrument		<i>Giulia imburra il pane con un coltello</i> (Giulia butters the bread with a knife)

Comment:

No Italian correspondence for Levin's BUTTER verbs in the original sample of verbs used to bootstrap our analysis. However, there is little doubt that such a class exists for Italian as well, including verbs like *asfaltare**, *imburrare*†*, *oliare**, *pepare*†*, *salare**, etc. The criterion for class membership appears to be the lexicalization of the substance that is to be put on the theme, both for Italian and English.

Levin defines English BUTTER verbs as follows: "these verbs all have zero-related nominals; their meaning can be paraphrased as "put X on/in (something)",

where X is the noun that the verb takes its name from. These verbs appear similar to the spray/load verbs and the fill verbs in meaning.” (Levin, 1993:121)

Given the undoubtable resemblance to RIEMPIRE verbs, we decided to classify Italian IMBURRARE verbs under the present class, since their semantic frame conceptualizes a Filling event. Moreover, another compelling reason -syntactic in nature- to list these verbs under the VERBS of FILLING class is that they can also occur in constructions in which the Substance is encoded in a PP headed by {con} and the Location is represented as direct object:

(1) *Ho imburrato il pane con il burro vegetale* (I buttered the bread with vegetable butter)

IMBURRARE verbs cannot zero-related to a noun, since this derivational process is not possible in Italian, but rather they take the form of denominals. An interesting thing to note is that the Theme of the verb must be more specific than the noun the verb lexicalize (see the case of POISON verbs for a similar behavior):

(2) *Giulia imburra il pane* (Giulia butters the bread)

(3) **Giulia imburra il pane con del burro* (*Giulia butters the bread with butter)

(4) *Giulia imburra il pane con del burro salato* (Giulia butters the bread with salted butter)

They have Animate and agentive $a1$ that cannot corefer with $a2$, therefore they cannot occur in any type of Reflexive construction.

4) VERBS of REMOVING

RIMUOVERE verbs

VerbNet Class: 10.1

Subclass of: VERBS OF REMOVING

Class Members:

Verbs	Senses
<i>cancellare "erase wipe"</i>	Cancellare le scritte (To erase writings)
<i>distrarre "distract"</i>	Distrarre lo studente (To distract the student)
<i>dividere "divide"</i>	Dividere due fratelli (To divide two brothers)
<i>eliminare "eliminate"</i>	Eliminare la polvere (To eliminate → remove dust)
<i>levare " take away"</i>	Levare l'embargo (To take the embargo away)
<i>prendere " take"</i>	Prendere il giornale dal tavolo (To take the newspaper from the table)
<i>pulire "clean"</i>	Pulire lo sporco (To clean dirt)
<i>spazzare "sweep"</i>	Spazzare la polvere (To sweep dust)
<i>spostare "move"</i>	Spostare il divano (To move the couch)
<i>togliere "to remove"</i>	Togliere il pane dal forno (To remove the bread from the oven)

Semantic Frame: An Agent causes a Theme to move away from a Source

FrameNet Frame: Removing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Source	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Gianni rimuove l'ostacolo</i> (Gianni removes the obstacle) <i>Il detersivo rimuove le macchie</i> (Detergent removes stains)	
subj[a1]> V> obj[a2]> {da/di}[a3]	<i>Ho rimosso il virus dal computer</i> (I removed the virus from the computer)	
subj[a1=a2]> si-dir_refl-V	<i>L'ostacolo si rimosse da solo</i> (the obstacle removed itself) <i>Gianni e Giulia si sono divisi otto anni fa</i> (Gianni and Giulia separated eight years ago)	
subj[a1=a2]> si-dir_refl-V> {da}[a3]	<i>Giulia si distraeva dallo studio</i> (Giulia used to be distracted from	

	her studies) <i>I venti freddi si sposteranno da Nord</i> (Cold wind will move themselves [lit.] → will move from North)	
subj[a1]> si-ind_refl> obj[a2]	<i>Gianni si è tolto un sasso dalla scarpa</i> (Gianni removed a pebble from his shoe)	
ci-si-refl-impers-V	<i>Ci si toglie una curiosità alla volta</i> (One removes [lit.] → satisfies a curiosity at a time)	
subj[a2]> si-refl_pass-V	<i>Il fango si toglie bene dai vestiti</i> (Mud comes off easily from clothes)	<i>distrarre</i>
subj[a2]> pass-V > {{da}{a1}}	<i>Gli addobbi natalizi sono stati tolti dalla mamma</i> (Christmas decorations were removed by mom)	
si-impers-pass-V	<i>Si rimuoveranno le scritte sul muro</i> (Writings on the wall will be removed)	

Comment:

RIMUOVERE verbs refer to the removal of some entity (animate or inanimate) from a (sometimes figurative) location. They are all transitive and

typically telic. All verbs allow at least one type of Reflexive Construction. In cases of Reflexive Constructions with thematic *a1-a2* , an adverb may be required to “reinforce” the construction: *da solo, solo, a vicenda* etc are some of the predicative “reflexive adverbs” that can occur.

(2) *L’ostacolo si rimosse da solo* – The obstacle removed itself

RIMUOVERE verbs as well can take the Reflexive Passive construction, with the sole exception of *distrarre*.

Some of the verbs in this subclass are cross-listed. The verb *spostare* (“to move, shift”) is cross-listed with METTERE Verbs. The verb *dividere* is cross-listed with CONDIVIDERE verbs (see below): in Italian this verb has both the sense of “to divide, to separate”, and is hence constructed in accordance with RIMUOVERE verbs, and the meaning of “to share”, and is analyzed as a verb of CHANGE OF POSSESSION.

The verbs *cancellare, pulire, spazzare* are cross-listed with VUOTARE verbs (see below)

BANDIRE verbs

Verbnet class: 10.2

subclass of: VERBS OF REMOVING

Class Members:

Verbs	Senses
<i>allontanare “to expel”</i>	Allontanare qualcuno dal gruppo (To expel someone from a

	group)
<i>bandire* "to banish"</i>	Bandire qualcuno dal regno (To banish someone from the kingdom)
<i>cacciare "to dismiss"</i>	Cacciare qualcuno (To dismiss someone)
<i>deporre "to depose"</i>	Deporre qualcuno dal trono (To depose someone from the throne)
<i>escludere "to exclude"</i>	Escludere qualcuno dalla conversazione (To exclude someone from conversation)
<i>espellere "to expel"</i>	Espellere il bambino (To expell the child)
<i>scomunicare* "to excommunicate"</i>	Scomunicare l'eretico (To excommunicate the heretic)
<i>sollevare "to relieve, remove"</i>	Sollevare qualcuno dall'incarico (To relieve someone from the assignment)
<i>sospendere "to suspend"</i>	Sospendere l'intera classe (To suspend the whole class)

Semantic Frame: An Authority decides to expel a Member from a Group

FrameNet Frame: Exclude_Member

Arguments	Roles	Semantic types
a1	Authority	
a2	Member	Animate
a3	Source	

Constructions:

Syntactic Frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {da}[a3]	<i>Gianni caccia il figlio da casa</i> (Gianni kicks his son out from → of home)	
subj[a1]> V> obj[a2]	<i>L'allenatore espulse il giocatore</i> (The coach expelled the player) <i>Il nostro organismo espelle le tossine</i> (Our organism expels toxins)	<i>sollevare</i>
subj[a1]> pass-V > ({da}[a3])	<i>L'alunno è stato sospeso da scuola dall'insegnante</i> (the student was suspended from school by the teacher)	
subj[a1,a2]>si-recip-V	<i>I due esempi si escludono a vicenda</i> (The two examples mutually exclude each other)	<i>allontanare, bandire, cacciare, deporre, espellere, scomunicare, sollevare, sospendere</i>
si-impers-pass-V	<i>Si viene sospesi per le troppe assenze</i> (One gets suspended for too many absences)	
subj[a2]> si-refl_pass-V	<i>Le tossine si espellono con il</i>	

	<i>sudore</i> (Toxins are expelled with sweat)	
--	--	--

Idiosyncratic constructions:

Construction	Examples
subj[a1=a2]> si-refl-esclude	<i>Il bambino timido si esclude dal gruppo</i> (The shy boy excludes himself from the rest of the group)

Comment:

The verbs in this subclass are generally polysemous. They have a rather large spectrum of meanings, also quite different among one another and for this reason in the BANDIRE subclass all verbs are cross-listed. However, they all share a very specific sense, according to which they are here grouped: they profile an event on which an Authority removes an Animate *a2* from a Group or a Location. BANDIRE verbs are the only subclass of VERBS of REMOVING that typically take an Animate object. The subject is also typically agentive, however a few verbs (*espellere*, *allontanare*, and *cacciare*) allow non-agentive subjects and non-animate objects as well:

- (1) *L'organismo espelle le tossine* (The organism expels toxins)

They take a PP headed by {*da*} and they form a quite consistent subclass. The verbs in the BANDIRE subclass share the typical constructions of the VERBS of REMOVING class, i.e. *subj[a1]> V> obj[a2]> {da}[a3]* and *subj[a1]> V> obj[a2]*; the

latter, however, is not allowed by the verb *sollevare* which requires the {da} phrase. If used in a sentence omitting *a3*, this verb is typically understood in its most prototypical meaning, i.e. “to lift”. However, if further information is provided by the context, *sollevare* is understood as a BANDIRE verb:

(2) **La scuola ha sollevato l’insegnante.* (First interpretation : the school lifted the teacher)

(3) *La scuola ha sollevato l’insegnante. Picchiava i bambini* (The school removed the teacher. She hit children)

The only verb that can take the Reflexive Construction, in the Reciprocal form as well, is *escludere*. That is, this is the only BANDIRE verb in which the root allows the subject and the object to be co-referential. In all the other verbs the roots require the *a1* to be different from *a2*: the Authority cannot be the same as the banished Member.

RUBARE VERBS

VerbNet class: 10.5

Subclass of: VERBS OF REMOVING

Class Members:

Verbs	Senses
<i>cavare “to extract”</i>	Cavare un dente (To extract a tooth)
<i>prendere “to take”</i>	Prendere i soldi ai poveri (To take money from the poor)
<i>rapire “to abduct, kidnap”</i>	Rapire un bambino (To kidnap a child)

<i>riprendere</i> "to take again, to regain"	Riprendere qualcosa a qualcuno (To take something back from someone)
<i>ritirare</i> "to withdraw"	Ritirare i soldi (To withdraw money)
<i>rubare</i> "to steal"	Rubare gioielli (To steal jewels)
<i>sequestrare</i> "to sequester"	Sequestrare armi (To sequester arms)
<i>sfilare</i> "to pinch"	Sfilare il portafoglio (To pinch a wallet)
<i>sottrarre</i> "to subtract"	Sottrarre fondi (To subtract funds)
<i>strappare</i> "to extort, tear off"	Strappare una confessione (To extort a confession)

Semantic Frame: A Perpetrator takes Goods from a Victim or a Source

FrameNet Frame: Theft

Arguments	Roles	Semantic types
a1	Perpetrator	
a2	Goods	
a3	Source	Location
a4	Victim	Animate

Constructions:

Syntactic Frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {Loc}[a3]	<i>Il ragazzo ha rubato quei soldi in un supermercato</i> (The boy stole that money in a supermarket)	
subj[a1]> V> {a}[a4]	<i>Robin Hood rubava ai ricchi</i>	<i>riprendere</i>

	(Robin Hood used to steal from the rich)	
subj[a1]> V> obj[a2]	<i>La banda rubava automobili</i> (The gang used to steal cars)	
subj[a1,a4]>si-recip-V> obj[a2]	<i>I bambini si rubano la merenda</i> (Children are stealing snacks from each others)	<i>rapire</i>
ci-si-impers-V	<i>Ci si ruba spesso le idee</i> (We [impers.] often steal each other ideas)	
subj[a2]> pass-V> {da}[a1]	<i>I gioielli sono stati rubati dalla cameriera</i> (The jewels were stolen by the maid)	
si-impers-pass-V	<i>Si viene solitamente rapiti per un riscatto</i> (Usually one gets kidnapped for a ransom)	<i>cavare, rubare, sfilare</i>
subj[a2]> si-refl_pass-V	<i>I gioielli si rubano di frequente</i> (Jewels are frequently stolen)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{per}PP	Purpose, Cause		<i>L'uomo rubò i soldi per disperazione/ per la sua famiglia</i> (The man stole

			the money because of desperation → because he was desperate /the man stole the money for his family)
--	--	--	---

Idiosyncratic constructions:

Construction	Examples
subj[a1]> si-ind_refl> V> obj [a2]	<i>Mi prendo ciò che è mio di diritto</i> (I take for myself what is mine by right) <i>Mi riprendo i miei soldi</i> (I reclaim for myself my money)

Comment:

The RUBARE Verbs subclass and the next one (see below) gather verbs that can be characterized as verbs of possession deprivation: these verbs relate to removing something/someone from someone's possession or from a Location. Some of the verbs also allow benefactive or causal PPs to indicate on whose behalf or why the removal was done (*ritirare, rapire, sequestrare, rubare*). What sets apart this subclass from the others is in particular that these verbs can take up to four arguments, while all other REMOVING verbs have three.

The RUBARE verbs can omit *a2* in a known context (Object Omission) or when the object is prototypical to the verb in question; e.g.: the verb *rubare* is the

one with the most frequently found Object Omission, since its most typical object (money, valuable things) appears to be almost lexicalized in the verb itself.

(1) *Hanno rubato in casa di Gianni* (Someone stole in Gianni's home)

The verbs are all intrinsically telic and typically taking an Agentive subject. A few verbs allow the Impersonal Passive construction (see table above); the roots that block such construction are the ones who typically do not take an Animate *a2*, like *rubare*, and that hence cannot take an impersonal construction with *a2* surfacing as subject.

This same verb and his derivate *riprendere* also allow the Indirect (or Dative) Reflexive Construction.

Many of these verbs are cross-listed with CHANGE OF POSSESSION verbs (see below), since a stealing event necessarily brings about a change in the possession of the stolen entity.

CURARE verbs

VerbNet class: 10.6

Subclass of: VERBS OF REMOVING

Class Members:

Verbs	Senses
<i>assolvere</i> "to absolve"	Assolvere il peccatore (To absolve the sinner)
<i>curare</i> "to cure"	Curare i malati (To cure the sick)
<i>liberare</i> "to free"	Liberare qualcuno dalle catene (To free someone from

	chains)
<i>sciogliere "to release"</i>	Sciogliere qualcuno da una promessa (To release someone from a promise)

Semantic Frame: An Agent causes an Entity to move away from a Patient

FrameNet Frame: no correspondence

Arguments	Roles	Semantic types
a1	Agent	
a2	Patient	Animate
a3	Entity	

Constructions:

Syntactic Frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Il medico curò Giulia</i> (The doctor cured Giulia) <i>Il corpo rilascia calore</i> (the body emits heat)	
subj[a1]> V> obj[a2]> {da,di}[a3]	<i>Il prete assolse Gianni dei suoi peccati</i> (The priest absolved Gianni of his sins)	
subj[a1]> V> obj[a3]> {di}[a2]	<i>L'ambasciatore ONU difese i diritti dei bambini</i> (The UN ambassador defended children's rights)	
subj[a1=a2]> si-refl-V> {da}[a3]	<i>Sono riuscita a curarmi dal</i>	

	<i>raffreddore</i> (I managed to cure myself from the cold)	
ci-si-refl-impers-V	<i>Ci si difende anche da soli</i> (One can also defend oneself)	
subj[a3]> pass-V> {a,da}[a2]	<i>La malattia è stata curata dai medici</i> (The disease was cured by doctors)	
subj[a2]> pass-V> {{da}[a1])	<i>Le mura cittadine furono difese con valore</i> (The city walls were defended vigorously)	
si-impers-pass-V	<i>Si viene difesi da chi ci ama</i> (One is defended by who loves us)	
subj[a3]> si-refl_pass-V	<i>I peccati si perdonano a chi si pente</i> (Sins are forgiven to those who repent)	

Comment:

CURARE verbs, like RUBARE verbs, refer to possessional deprivation; as Levin points out, (Levin 1993:130), the difference between the two subclasses lies in the fact that CURARE verbs (CHEAT verbs) normally “describe depriving someone/something of an inalienable possession (in a broad sense)”. This means that the possession that is removed from the Patient by the Agent is typically an abstract concept (e.g., a sin, a thought, etc) or a concrete entity that the Patient had

almost as a part of her/himself (e.g.: a disease). This feature holds true for Italian as well.

There is no compatible semantic frame in FrameNet nor in ValPaL for this subclass, since its members all evoke different kinds of conceptual representations of events; however they all share a feature that is not highlighted neither in FrameNet nor in ValPaL: they all conceptualize the removal of a (possibly abstract) Entity from an Animate Patient. This is the reason why we have decided to consider this as a subclass of REMOVING verbs.

The verb *liberare* is cross-listed with VUOTARE verbs (see below) because it has two different, though related senses: if it takes a non Animate object (*liberare una stanza* “to clear a room”), it behaves as a VUOTARE verb, if the object is instead Animate (*liberare il prigioniero* “to free the prisoner”), the verb belongs to the CURARE subclass. Furthermore, in the latter sense this verb only admits constructions in which the *a2* is realized as a direct object - that is it only allows animate objects.

Liberare and *curare* admit the reflexive construction, while *assolvere* and *sciogliere* (do not. This is because the latter two are intrinsically understood to be actions that the subject cannot typically perform himself:

- (1) *Curarsi dal raffreddore* – to cure oneself from a cold
- (2) **Assolversi dai peccati* – *to absolve oneself from sins

DISSOSSARE VERBS

VerbNet Class: 10.8

Subclass of: VERBS OF REMOVING

Class Members:

Verbs	Senses
<i>decapitare*</i> "behead"	Decapitare qualcuno (To behead someone)
<i>deforestare*</i> "deforest"	Deforestare la giungla (To deforest the jungle)
<i>disboscare*</i> "deforest"	Disboscare un'area verde (To deforest green area)
<i>disossare*+</i> "debone"	Disossare un pollo (To debone a chicken)
<i>scuoicare*+</i> "skin"	Scuoicare un animale (To skin an animal)
<i>spellare*</i> "skin, peel"	Spellare un coniglio (To skin a rabbit)

Semantic Frame: An Agent causes a Theme to move away from a Source

FrameNet Frame: Removing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Source	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>L'uomo ha decapitato il nemico</i> (The man beheaded the enemy)	

subj[a1]> si-ind_refl-V> obj[a2]	<i>Mi sono spellata un ginocchio</i> (I skinned my knee)	
subj[a2]> si-refl_pass-V	<i>Il tacchino si disossa il giorno prima</i> (The turkey is to be deboned the day before)	
subj[a2]> pass-V > ({da}[a1])	<i>La zona è stata disboscata dall'ex sindaco</i> (The area was deforested by the former mayor)	
si-impers-pass-V	<i>Si è decapitati in guerra</i> (at war, one gets beheaded)	<i>deforestare*</i> , <i>disboscare*</i> , <i>disossare*†</i>

Comment:

In Levin's analysis of VERBS OF REMOVING two further subclasses are identified: PIT verbs and DEBONE verbs (respectively, 10.7 and 10.8), the main difference between the two being that PIT verbs are all zero-related to nouns, while DEBONE are not. The core meaning of the two subclasses seems to be similar, as they both can be paraphrased as "remove X from (something)," where X is the noun related to the verb root. The nouns that these verbs are based on might for the most part be considered to be an inalienably possessed part of an animal or plant (sometimes in a broad sense of inalienable possession)." (Levin, 1993: 131)

Since in Italian a zero-relation to a noun is impossible for verbs, it is clear that English PIT and DEBONE verbs would converge in only one subclass of denominal

verbs, more similar in their morphological formation to Levin's DEBONE verbs: "these verbs all have related nominals; morphologically, each verb is formed by the prefix *de-* plus this nominal." (Levin, 1993:131) Italian DISOSSARE verbs do not necessarily take the prefix *-de*, and the two subclasses do not merge entirely and perfectly in a single one, but it can be generally said that many verbs coming from the the two Levin's subclasses can be listed under only one subclass for Italian.

No examples for this subclass were found in the core sample of analyzed data, but various instances of Italian verbs can be found in the lexicon that meet with the semantic criteria for the DISOSSARE subclass.

They are all transitive, and they are generally construed with an *a2* - direct object affected by the action of the verb.

(1) *Mia nonna uccideva e disossava i polli* (My grandmother used to kill and bone chickens)

The verb *decapitare* is cross-listed with ASSASSINARE verbs, since its core meaning refers to the removal of the head from the Patient by an external Agent and therefore it implicates the violent death of the Patient.

5) VERBS of CLEARING

VUOTARE VERBS

VerbNet class: 10.3

Subclass of: VERBS OF CLEARING

Class Members:

Verbs	Senses
<i>cancellare</i> "erase, wipe"	Cancellare la lavagna (To wipe the blackboard)
<i>liberare</i> "free"	Liberare una stanza (To free a room)
<i>pulire</i> "clean, wipe"	Pulire il pavimento (To clean the floor)
<i>scaricare</i> "unload, discharge"	Scaricare il camion (To unload the truck)
<i>sgomberare*</i> "clear"	Sgomberare un magazzino (To clear a warehouse)
<i>spazzare</i> "to sweep"	Spazzare il porticato (To sweep the porch)
<i>svuotare</i> "empty"	Svuotare il frigo (To empty the fridge)
<i>vuotare*</i> "empty"	Vuotare le tasche (To empty one's pockets)

Semantic Frame: An Agent clears or empties a Source of a Theme

FrameNet Frame: Emptying

Arguments	Roles	Semantic types
a1	Agent	
a2	Source	
a3	Theme	

Constructions:

Syntactic Frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Ho liberato la cantina</i> (I cleared the basement)	
subj[a1]> V> obj[a2]> {da}[a3]	<i>Ho liberato la stanza dai mobili</i> (I cleared the room from the furniture)	
subj[a2]> si_anticaus-refl-V	<i>Il locale si svuota</i> (The club empties itself → empties)	<i>pulire, spazzare</i>
subj[a1=a2]> si-dir_refl-V> ({di,da}[a3])	<i>Giulia si è liberata da tutti i suoi impegni</i> (Giulia freed herself from all her appointments) <i>Il negozio si svuota di clienti</i> –The store empties itself →empties of customers	<i>spazzare</i>
subj[a2]> pass-V > ({da}[a1])	<i>La dispensa è stata svuotata dai tuoi amici</i> (the pantry was emptied by your friends)	
si-impers-pass-V	<i>Si liberano soffitte e cantine</i> (Basements and attics are cleared→ We clear basements and attics)	
subj[a2]> si-refl_pass-V	<i>La stanza si libera a fine ottobre</i> (The room is to be emptied by the	

	end of October)	
ci-si-impers-V	<i>Non ci si libera dai problemi andandosene</i> (One does not get free from problems by leaving)	<i>spazzare</i>

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{a}PP	Recipient		<i>Ho pulito la maglietta al bambino</i> (I cleaned the shirt to the kid)

Comment:

In Levin 1993 CLEAR verbs are considered to be a subclass of REMOVING verbs since they refer to the removal of a (typically unwanted) entity from a location. In FrameNet, however the LU for the verb “to clear” is linked not only with the REMOVING Frame, but also with the EMPTYING Frame, where words referring to “emptying containers and clearing areas of some substance or items”³⁵ are listed. Following the FrameNet approach, we decided to consider VERBS OF CLEARING as a different class, although strictly correlated to REMOVING verbs, both syntactically and semantically. Although these verbs “appear to relate to the removal of a

³⁵ from: <https://framenet2.icsi.berkeley.edu/fnReports/data/frameIndex.xml?frame=Emptying>

substance from a location, in at least some of their uses they are better characterized as verbs of change of state” (Levin 1993:124).

Two subclasses of Levin’s classification converge in the Italian subclass of VUOTARE verbs: the already mentioned CLEAR verbs and WIPE verbs. In particular, since English WIPE verbs are classified according to their participation in the Locative alternation, we decided to “split” this subclass, as we did with SPRAY/LOAD verbs (see above). That is, we cross-classified the Italian counterparts in two different classes: VUOTARE and RIMUOVERE verbs. The “holistic” construction of the Locative alternation (see example (1)) is classified with the first class, the “partitive” construction (see example (2)) with the latter.

(1) *Il maestro cancella la lavagna* (The teacher wipes the blackboard)

(2) *Il maestro cancella le scritte dalla lavagna* (The teacher wipes the writing from the blackboard)

As many change of state verbs, also VUOTARE verbs show different constructions resulting in the Causative alternation:

(3) *Gianni libera la stanza* (Gianni clears the room)

(4) *Si è liberata una stanza* (A room cleared)

The only “non alternating” verb of this subclass seems to be *pulire*, exactly like the English counterpart *to clean*, and *spazzare*. This may be because the verb *pulire* and *spazzare* needs a typically Agentive subject. Even when the subject is Thematic, the semantic constraints imposed by the root on the entity occupying the slot are the

same of verbs like *depositare* ("to deposit, sediment"): an object capable of motion, hence somehow similar to an Agent.

(5) *Il vento pulisce il cielo* (The wind cleans the sky)

(6) *Il vento spazza via le nuvole* (The wind sweeps the clouds away)

However, it is worth mentioning that there can be rare occasions in which *pulire* displays an Anticausative construction in pragmatically acceptable contexts:

(7) *Questo forno si pulisce da solo* (This oven cleans itself)

Also the verb *scaricare* is somewhat of an exception, since it seems to allow both constructions (Causative and Anticausative) only in one case, that is when the verb refers to an electronic device losing its charge:

(8) *Ho scaricato la batteria del telefono* (I discharged the battery of the phone)

(9) *La batteria del telefono si è scaricata* (The phone battery is out of charge)

These verbs also allow a Reflexive construction taking a PP headed by {di} or {da}.

The subject of the construction is typically agentive, with the exception of the verb *liberare*, which can take both an Agent and a Theme as subjects, and of the verbs *svuotare* and *vuotare*³⁶ that seems to allow only Thematic subjects.

(10) *Mi sono scaricato di tutte le responsabilità* (I discharged [lit.] → relieved myself of all responsibilities)

³⁶ the verb *vuotare* ("to empty") is perceived as archaic. It does not take the reflexive form with an agentive subject, but it used to in the past:- *Io mi vuoto la zucca in note* -I empty my head in notes → I'm thinking hard to write music Saccenti, G.S. , *Le rime di Giovan Santi Saccenti da Cerreto Guidi Accademico Sepolto*, 1808, Firenze)

In Levin 1993 CLEAR Verbs are understood to be characterized by the participation in the Locative Alternation. This however, does not hold for Italian VUOTARE subclass.

The verb *vuotare* admits the construction *subj[a1]> V> obj[a2]> {da}[a3]* but it normally prefers the direct object construction, without PP, since its meaning is typically understood as holistic.

(11) *“L’acqua è una brodaglia grigia che mia madre ha vuotato da uno dei secchi”*³⁷ (Water is a grey slop that my mother emptied from one of the buckets)

(12) *Il ragazzo ha vuotato il secchio* (The boy emptied the bucket)

6) VERBS of SENDING AND CARRYING

MANDARE verbs

VerbNet class: 11.1

Subclass of: VERBS OF SENDING AND CARRYING

Class Members:

Verbs	Senses
<i>consegnare “to deliver”</i>	Consegnare la posta (To deliver the mail)
<i>destinare “to dispatch”</i>	Destinare dei soldi a qualcuno (To dispatch money to someone)
<i>girare “to forward”</i>	Girare un’ e-mail (To forward an e-mail)

³⁷ example taken from: <https://gianlucachiappiniwordpress.com/2009/03/04/lodore-del-latte/>

<i>indirizzare "to address"</i>	Indirizzare una lettera a qualcuno (To address a letter to someone)
<i>inviare "to send"</i>	Inviare una cartolina (To send a postcard)
<i>mandare "to send"</i>	Mandare i saluti (To send regards)
<i>rimandare "to send back"</i>	Rimandare indietro un regalo (To send back a gift)
<i>spedire "to mail"</i>	Spedire un pacco (To mail a box)
<i>trasferire "to transfer"</i>	Trasferire dati (To transfer data)
<i>trasmettere "to transmit"</i>	Trasmettere un segnale radio (To transmit a radio signal)

Semantic Frame: A Sender plans a path for a Theme in order for it to arrive to a Goal or to a Receiver

Framenet Frame: Sending

Arguments	Roles	Semantic types
a1	Sender	
a2	Theme	
a3	Recipient/ Goal	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {a,da}[a3]	<i>Gianni ha inviato una lettera a Giulia</i> (Gianni sent a letter to Giulia)	
subj[a1]> V> obj[a2]	<i>Giulia ha inviato un pacco ieri</i> (Yesterday Giulia sent a package)	

subj[a1]> V> obj[a2]> {Loc}[a3]	<i>Ho spedito i bambini in campeggio</i> (I sent the kids to camping)	
subj[a1]> V>obj[a2]> {a}inf	<i>Gianni di solito manda sua sorella a fare la spesa</i> (Gianni usually sends his sister shopping)	<i>consegnare, girare, trasferire, trasmettere</i>
subj[a2]> pass-V> ({da}[a1])	<i>Il pacco è stato spedito stamattina</i> (The package was mailed this morning)	
subj[a1]> si-ind_refl-V> obj[a2]> {Loc}[a3]	<i>Mi sono mandato i dati sull' e-mail</i> (I sent myself the data via e-mail)	<i>consegnare</i>
subj[a1=a3]> si-ind_rec_refl-V>obj[a2]	<i>Anna e la sua amica si inviano sempre messaggi</i> (Anna and her friend always send each other texts)	<i>trasferire ???</i>
ci-si-impers-refl-V	<i>Ci si spedisce i regali a Natale</i> (We [impers.] send each other gifts at Christmas)	
si-impers-pass-V	<i>Quando si invia il modulo, bisogna allegare due fotografie</i> (When sending the form, one needs to attach two photos)	
subj[a2]> si-refl_pass-V	<i>Si è inviati come messaggeri di pace</i> (One is sent as a messenger of peace)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{attraverso,con...}PP	Instrument		<p><i>il prigionierò inviò una lettera con un piccione viaggiatore</i> (The prisoner sent the letter with a carrier pigeon)</p> <p><i>La malattia si trasmette per via aerea</i> (the disease is transmitted through the air → is wind-borne)</p>
subj[a1]> V> obj[a2]> {da}PP	Initial_Location	Location	<p><i>Gianni ha mandato una cartolina da Cuba</i> (Gianni sent a postcard from Cuba)</p>

Idiosyncratic constructions:

Construction	Examples
subj[a1]> V> obj[a2]> C_pred	<p><i>I genitori hanno mandato il figlio militare</i> (the parents sent their son to be a soldier)</p>

Comment:

The verbs in this class are characterized by expressing an event that causes an entity to change its location. In the MANDARE subclass the movement is not accompanied by the *a1*, and as Pinker (1989: 110) pointed out, the motion is

"mediated by a separation in time and space, sometimes bridged by a particular means of transfer".

In some contexts, the change of Location also implies a change of possession. However this is a pragmatic inference rather than an entailment, because it can easily be cancelled:

(1) *Ho mandato la lettera a Laura, MA lei non l'ha mai ricevuta* (I mailed the letter to Laura, BUT she never received it)

The verbs in this subclass are typically constructed with an *a2* as direct object and a prepositional phrase; the object of the PP (*a3*) can be either an Animate or a Location (Recipient/Destination) and it indicates the Goal, the final point towards which the action of sending is aimed. A peculiarity of MANDARE verbs in Italian, and SEND verbs in English, is the fact that they can also have an infinitive clause, possibly replacing the PP. In this case the dependant clause indicates the Goal or Destination of the action:

(2) *Ho inviato il mio amico a chiedere indicazioni* (I sent my friend to ask for directions)

Not all SEND verbs however show this construction, which is not admitted with *consegnare, girare, trasferire and trasmettere*. This may be due to constraints in their verbal roots: they do not typically allow an Animate *a2*, which is instead required for the aforementioned construction, or their meaning is much narrower in respect to others roots in the subclass (e.g. *inviare, spedire*). *Girare* ("to forward")

for example can only take few nouns as its direct object, all belonging to the semantic field of “mail”:

- (3) *Girare una mail, girare un messaggio, girare una petizione...* (To forward an e-mail, a message, an online petition...)

The other verbs are not so strictly constrained in their argument choice, but also seem to display a limited range in object selection.

MANDARE verbs and other subclasses (in Italian and in English as well) show a rather uniform pattern of modifiers: they can either be modified with an Instrumental PP, explaining in what way the action is being carried, or with a Locative PP, explaining from where the entity is being sent:

- (4) *Ho mandato un pacco con il corriere* (I sent a package with a courier)

- (5) *Ho mandato un pacco da Parigi* (I sent a package from Paris)

These verbs admit only the Indirect or Dative form of Reflexive, since their *a1* and *a2* cannot be co-referential, unless in very specific pragmatic contexts as in (7), but their *a1* and *a3* on the other hand can co-refer:

- (6) **Mi sono spedito a Roma* (*I sent myself to Rome)

- (7) *“Ho costruito un pacco, mi ci sono messo dentro e mi sono spedito in Australia”³⁸* (I built a package, I entered it and I mailed myself to Australia)

- (8) *Mi sono spedito un file sull’email* (I sent myself a file on my email)

The verb *trasferire* allows the Direct Reflexive as well:

³⁸ example taken from: http://www.huffingtonpost.it/2015/03/06/reg-spiers-australia-viag_n_6815826.html

(9) *Mi sono trasferito a Roma* (I moved [myself] to Rome)

This verb is here listed only in the sense of “to move someone or something”, that is in a sense that do not lexicalize a change in possession. It is cross-listed with CHANGE of POSSESSION verbs with the meaning of “to transfer”.

PORTARE/PRENDERE verbs

VerbNet class: 11.3

Subclass of: VERBS OF SENDING AND CARRYING

Class Members:

Verbs	Senses
<i>portare</i> “to bring”	Portare un amico a cena (to bring a friend to dinner)
<i>prendere</i> “to take”	Prendere un libro (To take a book)

Semantic Frame: An Agent brings a Theme to a Goal location

Framenet frame: Bringing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]>V> obj[a2]	<i>Giulia porta il dolce</i> (Giulia will bring the dessert)	
subj[a1]>V> obj[a2]> {Loc}[a3]	<i>La mamma ha portato la bambina dai nonni</i> (Mom brought the little girl to her grandparents) <i>Il taxi ci ha portato a casa</i> (The taxi brought us home)	
subj[a1]> si-ind_rec_refl-V> obj[a2]	<i>Anna e Luca si prendono la mano.</i> (Anne and Luke are taking each other's hands.)	
subj[a2]> pass-V> {{da}[a1]}	<i>I libri in biblioteca vengono presi gratuitamente</i> (In the library the books are taken for free)	
subj[a2]> si-refl_pass-V	<i>il cibo si prende con i guanti</i> (Food must be taken with gloves)	
si-impers-pass-V	<i>Si è presi dalla paura</i> (One is taken [lit.] → overcome with fear)	
ci-si-impers-refl-V	<i>Ci si porta un regalo in segno di amicizia</i> (We [impers.] bring	

	each other presents as a sign of friendship)	
--	--	--

Typical Modifiers

Modifier	Roles	Semantic types	Examples
{attraverso,con...}PP	Instrument		<i>prendere la città con la forza</i> (Take the city with the use of force)
{Loc}PP	Location		<i>Ho preso il libro sul tavolo</i> (I took the book on the table)

Idiosyncratic constructions:

Construction	Examples
subj[a1]> V> obj[a2]> {da, per}PP	<p><i>Prendere qualcuno per la gola</i> (to take someone by the throat / to cook for someone)</p> <p><i>Ho preso le calze dal cassetto</i> (I took the socks from the drawer)</p>

Comment:

Levin 1993 distinguishes among the various subclasses of SENDING AND CARRYING verbs one that is formed exclusively by the verbs “to bring” and “to take”. As the author explains, “these two verbs are set apart from other verbs of sending

and carrying by the presence of the deictic component of meaning and the lack of a meaning component that specifies the manner in which the motion is brought about" (Levin 1993:135). In fact, these verbs have been described in the literature as "verbs of continuous causation of accompanied motion in a deictically-specified direction" (Gropen et al. 1989, quoted from Levin 1993:135). They do not have an intransitive use, but are considered to be the causatives of *come* and *go*.

We decided to maintain this differentiation in the analysis of Italian verb classes, since the characteristics that Levin and others singled out for English seem to hold for Italian as well.

What distinguishes PORTARE/PRENDERE verbs from the rest of the class is their deictic nature: they intrinsically do not need any specification about the Destination where the Entity is brought to, since it is lexicalized in the root of the verb itself.

(1) *Ho portato un amico* (I brought a friend)

(2) *Ho mandato una lettera* (I sent a letter)

While in example (1) the pragmatic context already "fills" the PP gap (I brought a friend *in the place where I actually am*), in (2) a locative PP is required to fill the valence of the verb (I sent a letter *to whom? where?*).

A crucial difference exists between Italian and English: the polysemy of the verb *portare*. This verb can mean either "to bring" or "to carry", hence it is cross-listed between PORTARE/PRENDERE and TRASPORTARE³⁹ verbs. What truly

³⁹ In ValPal the verb *portare* is listed with the sense of "to bring"

differentiates the two senses of the verb is that In its second sense, listed under the TRASPORTARE subclass, the verb *portare* is not deictic.

These verbs do not allow the Reflexive construction unless it is in its Dative form: *a1* and *a2* cannot be coreferential.

TRASPORTARE verbs

VerbNet class: 11.4

Subclass of: VERBS OF SENDING AND CARRYING

Class Members:

Verbs	Senses
<i>accompagnare*</i> "accompany"	Accompagnare qualcuno (To accompany someone)
<i>esportare</i> "export"	Esportare vino (To export wine)
<i>importare</i> "import"	Importare tessuti (To import fabrics)
<i>portare</i> "carry"	Portare lo zaino (To carry the rucksack)
<i>riportare</i> "carry back"	Riportare un bambino a casa (To bring a child back home)
<i>spingere</i> "push"	Spingere il carrello (To push the cart)
<i>tendere</i> "reach, stretch"	Tendere il libro (To reach the book)
<i>tirare</i> "pull"	Tirare la maniglia (To pull the door-knob)
<i>trarre</i> "drag, draw"	Trarre qualcuno a riva (To draw someone to the shore)
<i>trascinare</i> "drag"	Trascinare un pacco (To drag a package)
<i>trasportare</i> "transport"	Trasportare animali (To transport animals)

Semantic Frame: An Agent brings a Theme to a Goal location

Framenet frame: Bringing

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]>V> obj[a2]	<i>Gianni ha spinto il carrello</i> (Gianni pushed the cart) <i>Il tornado trascina le macchine</i> (the tornado drags the cars around)	
subj[a1]>V> obj[a2]> {Loc}[a3]	<i>Ho portato la valigia fino a casa</i> (I carried the suitcase home) <i>La rabbia lo ha portato all'omicidio</i> (rage pusher him to murder)	
subj[a1=a2]>si-dir_refl-V> {a}[a3]	<i>Ci siamo spinti troppo a Nord</i> (we pushed ourselves → we went too far North)	<i>esportare, importare, trasportare</i>
subj[a1]> si-ind_refl-V>	<i>Mi sono trasportato la cassa</i>	

obj[a2]	<i>da solo</i> (I carried the trunk myself)	
ci-si-impers-refl-V	<i>Ci si spinge il carrello a vicenda</i> (We [impers] push each other's cart)	
si-impers-pass-V	<i>Si viene trasportati fino in Francia</i> (One gets transported to France)	
subj [a2]> si-refl_pass-V	<i>Le cose fragili si trasportano in apposite scatole</i> (Fragile items are to be carried in the correct boxes)	

Typical Modifiers

Modifier	Roles	Semantic types	Examples	Roots not allowing the construction
{da}[a3]	Initial Location		<i>Ho trascinato il baule dalla stazione</i> (I dragged the trunk from the station)	<i>tendere, trarre</i>

Idiosyncratic constructions:

Construction	Examples
Subj[a1]> V> obj[a2]> {a}inf	<i>Mi sono spinto a chiedere informazioni a lui</i> (I pushed myself to ask him [lit.]→ I even asked him for some information)

subj[a1]> V > {in}PP	<i>trarre qualcuno in salvo</i> (to save someone)
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Comment:

This subclass is defined in Levin (1993) as including verbs that “relate to the causation of accompanied motion. None of them lexicalize a particular direction of motion. Instead, the members of this class differ from each other in meaning with respect to the manner/means of motion. The direction of motion must be overtly specified in a prepositional phrase” (*ivi*, 136).

In Italian as well a subclass of verbs thus organized can be found; Italian TRASPORTARE verbs relate to the causation of an accompanied motion without further lexicalizing the direction or the manner of the motion. The exceptions, both in Italian and in English, are the two verbs *spingere* and *tirare* (“to push”, “to pull”). These verbs have the same behavior as the other members of the class, but lexicalize the direction of the action: forward (*spingere*) or backwards (*tirare*). These verbs are cross-listed with SPINGERE/TIRARE verbs (see below).

As the previous subclasses, TRASPORTARE verbs can take prepositional phrases which specify the destination or the source of the action (in the latter case the PP is a modifier rather than a structure of the verb). The only verb that do not allows PPs indicating the Source or the Initial Location of the action is the verb *tendere* , which only allows directional PPs. These verbs allow both Direct and Indirect reflexive structures with the sole exceptions of the verbs *esportare*,

importare and *trasportare*, which do not allow for the the co-reference of *a1* and *a2*.

This is due to the semantics of the verbal roots: this verbs entail two distinct and separate entities as *a1* and *a2*. This bias is common among verbs of SENDING AND CARRYING which in fact allow Direct Reflexives in only a minority of cases.

(1) **Gianni si è trasportato all'ospedale* (*Gianni transported himself to the hospital)

(2) *Gianni ha trasportato Giulia all'ospedale* (Gianni transported Giulia to the hospital)

These verbs can be constructed both with an Animate and non Animate *a1*. As seen before, however, the non Animate *a1* should have some characteristics which allow it to cause movement: for example, typical non animate subjects are natural entities or phenomena such as wind, tides, streams, tornados etc.

(3) *La marea ha trasportato il tronco a riva* (The tide transported the log to the shore)

(4) *Il vento di ieri notte ha spinto le macchine giù dalla scarpata* (Last night's wind pushed the cars down the slope)

The verb *spingere* can also be constructed with an infinitive, both at the active and the reflexive form.

GUIDARE verbs

VerbNet class: 11.5

Subclass of: VERBS OF SENDING AND CARRYING

Class Members:

Verbs	Senses
<i>condurre</i> "drive"	Condurre un'ambulanza (To drive an ambulance)
<i>guidare</i> "drive"	Guidare un camion (To drive a truck)
<i>manovrare*</i> "maneuver"	Manovrare la gru (To maneuver the crane)
<i>pilotare</i> "steer, pilot"	Pilotare un aereo (To pilot an aeroplane)

Semantic Frame: A Driver causes the motion of a Vehicle to a Goal destination

FrameNet Frame: Operating_Vehicle

Arguments	Roles	Semantic types
a1	Driver	
a2	Vehicle	
a3	Goal	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]>V> obj[a2]	<i>Gianni pilota un jet</i> (Gianni pilots a jet)	
subj[a1]>V> obj[a2]> {Loc}[a3]	<i>Il presidente ha guidato il paese verso la pace</i> (the president drove → brought the	

	<i>Country to peace)</i> <i>Ho guidato l'auto fino a Genova</i> (I drove the car to Genoa)	
subj[a2]> pass-V> ({da}[a1])	<i>Le elezioni sono state pilotate dalle lobby</i> (Elections have been steered by lobbies)	
subj[a2]> si-refl_pass-V	<i>Gli aerei si pilotano da terra</i> (Aeroplanes are piloted from the ground)	
si-impers-pass-V	<i>Si guidano macchine sempre più sicure</i> (Faster cars are now driven)	

Typical Modifiers

Modifier	Roles	Semantic types	Examples
{da}PP	Source		<i>L'allenatore guida la partita dalla panchina</i> (the coach steers the match from the bench)

Comment:

English DRIVE verbs refer to the causation of an accompanied motion. They “inherently specify something about the manner of motion, typically the vehicle or

means used” (Levin, 1993: 136). In English many DRIVE verbs are zero-related to the noun of the correspondent vehicle (e.g: *to bus, to cart, to ferry* etc).

In Italian such a subclass does not exist. Almost all of Levin’s DRIVE verbs translate in Italian with a circumlocution, since zero-relation to nouns is not possible and the verbs are only in some cases denominals (e.g.: *pilotare* ← *pilota*).

(1) *To bus* → *portare in autobus* (to carry in a bus)

Italian GUIDARE verbs, at least from this preliminary and partial investigation, seem to lexicalize different ways in which a certain entity is moved by a Driver. The difference with English appears to rely on the fact that in Italian GUIDARE verbs only take Animate or Abstract *a2s* in metaphorical or derived meanings, while in English they are allowed in the most prototypical senses as well:

(2) **Ho guidato mio figlio a scuola* (I drove my son to school) → *Ho accompagnato mio figlio a scuola* (I accompanied my son to school)

(3) *Il suo esempio guidò la gente* (His example guided people)

(4) *Le lobby del petrolio hanno pilotato le elezioni* (Oil’s lobbies steered the elections)

From the examples above it can be easily seen how Italian always chooses TRASPORTARE verbs for accompanied motion of Animate entities, and only allows GUIDARE verbs to take Animate and Abstract objects in metaphorical senses; in (1), where the verb *guidare* is intended with the meaning of “to drive”, an Animate *a2* is not allowed, but in (3), where the verb takes the metaphorical sense of “to lead, to guide”, the Animate object is permitted. In other words, a sentence like (1) could be

allowed in Italian only if the pragmatic context allowed for a metaphorical interpretation of the verb, as for example in (5):

(5) *Ho guidato mio figlio a scuola. Ha una benda sugli occhi e non vede nulla.* (I guided my son to school. He has a bandage on his eyes and he can't see)

As in English, the verb *guidare* ("to drive") usually omits the object if it is the most prototypical one which can be easily inferred from the context ("a car"). These verbs do not allow Reflexives since *a1* and *a2* are intrinsically different.

The verb *condurre** omits the Locative PP more rarely than other members of GUIDARE verbs, and such construction is usually found in formal contexts. It is more commonly found in the *subj[a1]> V> obj[a2]> {Loc}[a3]* construction.

(5) *"Conduco un mezzo di 300 metri pesante 50.000 tonnellate"*⁴⁰ (I drive a 300 meters-long vehicle that weighs 50.000 tons)

(6) *Ho condotto la macchina fino alla pompa di benzina* (I drove the car up to the gas station)

Italian GUIDARE verbs seem to share some aspects of meaning with Manner of Movement verbs. They are atelic and do not lexicalize any directionality of the action:

(7) *Portare qualcuno a Roma / Guidare il camion fino a Roma*

(8) *Andare a casa / Saltellare fino a casa*

⁴⁰ example taken from: <http://www.ilsole24ore.com/art/SoleOnLine4/Italia/2010/02/cocaina-giovanardi-test-parlamentare.shtml>

As the examples show, Movement verbs that encode direction and VERBS OF SENDING AND CARRYING have lexicalized directionality, so the locative particle used is just “a” (“to”). Manner of movement and GUIDARE verbs, instead, need an additional preposition “fino” (“up to”) to add the directionality of the action. Therefore, we could say that GUIDARE verbs represent a “manner of conducting” subclass, since their roots all indicate the manner in which some entity is conducted.

ATTIRARE verbs

VerbNet class: 12.1 (here: 11.6)

Subclass of: VERBS OF SENDING AND CARRYING

Class Members:

Verbs	Senses
<i>attirare</i> “attract”	Attirare polvere (To attract dust)
<i>spingere</i> “push”	Spingere qualcuno (To push someone)
<i>stringere</i> “squeeze”	Stringere qualcosa (To squeeze something)
<i>respingere</i> “repulse, reject”	Respingere i pretendenti (To reject all suitors)
<i>tirare</i> “pull”	Tirare qualcuno a sè (To pull someone close)

Semantic Frame: An Agent causes a Theme to undergo a translational motion to a Goal

FrameNet Frame: Cause_Motion

Arguments	Roles	Semantic types
a1	Agent	
a2	Theme	
a3	Goal	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {Loc}PP	<i>Gianni tirò Giulia a sè</i> (Gianni pulled Giulia towards himself→ closer) <i>La Terra attira i meteoriti nella sua orbita</i> (the Earth attracts meteorites in its orbit)	
subj[a1]> V> obj[a2]	<i>Giulia spinge il carrello</i> (Giulia pushes the cart)	
subj[a1=a2]> si-dir_refl-V	<i>Mi spingo contro la porta</i> (I am pushing myself against the door)	
subj[a1]> si-recip-V	<i>I bambini si spingono ridendo</i> (the children are pushing each other laughing)	
subj[a1]> si-ind_refl-V> obj[a2]	<i>Gianni si è stretto la cintura</i> (Gianni tightened his belt)	
subj[a2]> V-pass (> {da}[a1])	<i>Il bambino è stato spinto da un</i>	

	<i>compagno</i> (the boy was pushed by a classmate)	
subj[a2]> si-refl_pass-V	<i>La culla si spinge con dolcezza</i> (The cradle is to be pushed softly)	
si-impers-pass-V	<i>Si è attirati da ciò che non si conosce</i> (One is attracted by the unknown)	
ci-si-impers-refl-V	<i>Ci si spinge per gioco</i> (We [impers.] push one another to play)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples	Roots not allowing the construction
{con}PP	Instrument		<i>Il cane strinse l'osso con i denti</i> (the dog squeezed the bone with his teeth)	
{a}PP	Recipient	Animate	<i>Giulia strinse la mano a Gianni</i> (Giulia pressed her hand → shook hands with Gianni) <i>Questa camicia mi stringe il collo!</i> (this shirt presses → is tight around my neck)	<i>attirare, premere, schiacciare, spingere, pigiare*</i>

Idiosyncratic constructions:

Construction	Examples
subj[a1]> V	<i>Non spingere, per favore</i> (Do not push, please)
subj[a1]> V> obj[a2]> {per}PP	<i>L'uomo mi tirò per un braccio</i> (The man pulled me by an arm)

Comment:

Levin distinguishes the EXERTING of FORCE verbs as an independent class; this class is however presented in a peculiar way in respect to the others: it contains only a very limited set of verbs, without any further subdivision. We therefore decided to “split” the original Levin’s class,: most of the verbs were put in an additional subclass of SENDING AND CARRYING verbs, while several other counterparts to English EXERTING FORCE verbs could be better placed in a different class, together with verbs of transformation (e.g: *premere, schiacciare, pigiare*, spremere*, stritolare*, strizzare*...*).⁴¹ The verbs that were not included encode an exertion of force that results in a transformation of the shape of the object upon which the force is directed; this subclass, instead, clusters together verbs that profile an exertion of force whose result is the movement from its original location of the entity upon which the force is acted.

⁴¹ “to press”, “to crash”, “to push (a button), to crash”, “to squeeze”, “to crush”, “to squeeze, to wink”

These verbs “differ from each other in meaning with respect to the type of force exerted” (Levin 1993:137). They are all transitive but some of them have an intransitive use as well:

(1) *Gianni spinge la porta* (Gianni pushes the door)/ *Giulia tira la maniglia* (Giulia pulls the doorknob)

(2) *Le onde spingono contro la diga* (The waves push against the dam)/ *Il vento tira fortissimo oggi!* (Wind pulls→ blows so strongly today!)

They all allow Direct Reflexives, with the sole exception of *tirare* (“to pull”), which lexicalizes in its own root the impossibility of a coreference between *a1* and *a2*. There are nevertheless cases in which it allows reflexive forms, if it is accompanied by adverbs of motion or direction (*via, su, fuori, dentro*⁴² etc..). In these instances, however, the meaning of the verb differs slightly from its prototypical sense, assuming in some cases even idiomatic nuances. E.g:

(3) *Tirati su!* (Get up!)

(4) *Ti vengo a tirare via di forza!* (I will draw you away by force!)

A useful perspective to analyze this group of verbs may come from Talmy (1988), where the concept of “exertion of force” is made part of Force Dynamics (FD), a new semantic category which is described as a “fundamental notional system that structures conceptual material pertaining to force interaction” (Talmy,

⁴² away, up, outside, inside

1988:49).⁴³ FD goes beyond language itself: the author states it pertains to the domains of the physical world, psychology, social interaction, cognitive systems etc. The force exerted upon an entity, or the entity that bears it, can be either pushing or pulling. “Push” and “pull” are then two opposite poles, between which all other verbs representing an exertion of force are placed.

This subclass shares many characteristics outlined by Talmy (1988); first of all, these verbs always represent the opposition of two forces, which may be called, following the author, Agonist and Antagonist: “as they function within language, I regard Agonist and Antagonist as semantic roles, on a par with, say, Agent.” (*ivi*, 53). The two forces must be unequal, one stronger and one weaker. The interaction of such forces yields a resultant: “as language schematizes it, this resultant is one either of action or of inaction, and it is assessed solely for the Agonist, the entity whose circumstance is at issue.” (*ivi*, 54)

The distinguishing feature of this subclass, however, is that it contains verbs that lexicalize an exertion of force which produces a movement of the *a2*.

⁴³ FD is not solely attributed to verbs referring to physical forces but is also extended to metaphorical meanings of the verbs, such as the senses indicating “psychological pressures” or the like.

7) VERBS of CHANGE of POSSESSION

DARE verbs

VerbNet class: 13.1

Subclass of: VERBS OF CHANGE OF POSSESSION

Class Members:

Verbs	Senses
<i>attribuire</i> "bestow"	Attribuire il merito a qualcuno (To bestow the credit to someone)
<i>cedere</i> "cede"	Cedere il posto a qualcuno (To cede the seat to someone)
<i>dare</i> "give"	Dare un bacio a qualcuno (To give someone a kiss)
<i>distribuire</i> "distribute"	Distribuire caramelle ai bambini (To distribute candies to the children)
<i>donare</i> "donate"	Donare vestiti ai poveri (To donate clothes to the poor)
<i>fornire</i> "give"	Fornire un alibi alla polizia (To give an alibi to the police)
<i>lasciare</i> "leave"	Lasciare dei soldi a qualcuno (To leave money to someone)
<i>mollare</i> "give, release"	Mollare uno schiaffo a qualcuno (To give somebody a slap)
<i>pagare</i> "to pay"	Pagare dieci euro a qualcuno (To pay someone 10 euros)
<i>porgere</i> "pass"	Porgere il sale al vicino (To pass the salt to the neighbour)
<i>prestare</i> "lend"	Prestare un libro a qualcuno (To lend someone a book)
<i>rendere</i> "return"	Rendere il favore all'amico (To return the favor to a friend)
<i>restituire</i> "return"	Ho restituito il libro (I returned the book)
<i>ridare</i> "give back"	Ridare il libro all'amico (To give back the book to a friend)
<i>rilasciare</i> "release"	Rilasciare un'intervista al giornale (To release an interview to the press)
<i>sborsare*</i> "pay"	Sborsare tanti soldi all'assicurazione (To pay a lot of money to the insurance company)

Semantic Frame: A Donor transfer the Theme to a Recipient

Framenet Frame: Giving

Arguments	Roles	Semantic types
a1	Donor	Animate
a2	Theme	
a3	Recipient	Animate

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {a}[a3]	<i>Gianni dà un bacio a Giulia</i> (Gianni gives Giulia a kiss) <i>La ferita mi procura dolore</i> (The wound gives me pain)	
subj[a1]> V> obj[a2]	<i>Il professore distribuisce i compiti</i> (The teacher hands out the tests)	
subj[a1]> si-ind_refl-V> obj[a2]	<i>Giulia si è data una scadenza</i> (Giulia gave herself a deadline)	<i>sborsare</i>
subj[a1]> si-recip-V	<i>Gianni e Giulia si diedero la mano</i> (Gianni and Giulia gave each other → shook hands)	<i>rilasciare</i>
ci-si-refl-impers-V	<i>Ci si dà spesso un premio</i> (One often gives oneself a reward)	
subj[a2]> V-pass > {a}[a3](> {da}[a1])	<i>L'aumento sarà dato ai lavoratori meritevoli</i> (The pay rise will be given to deserving workers)	
subj[a2]> si-refl_pass-V	<i>L'aumento si darà ai lavoratori</i>	

	<i>meritevoli</i> (The pay rise will be given to deserving workers)	
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Typical modifiers:

Modifier	Roles	Semantic types	Examples
{per}PP	Goal		<i>Donare del cibo per beneficenza</i> (To donate food for charity)
{come, in, per}PP	Predicative		<i>Dare una caramella in premio ai bambini</i> (to give the kids a candy as a reward)

Comment:

The primary criterion used by Levin to identify English verbs of CHANGE of POSSESSION is their participation to the Dative Alternation. “The dative alternation is characterized by an alternation between the prepositional frame ‘NP1 V NP2 to NP3’ and the double object frame ‘NP1 V NP3 NP2’ . The NP that is the object of the preposition *to* in the prepositional frame turns up as the first object in the double object construction.” (Levin 1993:47).

In Italian this type of alternating constructions do not exist, since the double object construction is lacking not only in Italian but also in the whole Romance area (Kayne, 1984). Still, it is possible to identify and categorize an Italian CHANGE OF POSSESSION class, based on semantic and syntactic criteria.

The verbs in the DARE subclass refer to the transfer of possession from a Donor to a Recipient. They are all transitive and generally constructed with a PP headed by {a} that specifies the Recipient of the action. The verbs in this subclass allow indirect Reflexives but only a few⁴⁴ can take direct Reflexives, usually accompanied by a PP specifying the Recipient (headed by {a} as in the active form) or a Final PP indicating the Goal, headed by {per}.

(1) *Gianni si presta volentieri agli scherzi* (Gianni lends himself willingly to jokes)

(2) *Mi sono prestato per interesse* (I lended myself for profit)

Generally, DARE verbs can take a Predicative PP as a modifier (e.g., *dare una caramella in premio ai bambini* “to give the kids a candy as a reward”).

The verbs *pagare* and *sborsare* are cross-listed with PAGARE verbs. They are since they also allow constructions with a Beneficiary similar to the ones typical of DARE verbs; their *a*2, however, can only be a noun phrase indicating a sum of money or related concepts (in extended meanings).

(3) *Ho pagato venti euro a Gianni* (I paid twenty euros to Gianni)

(4) *Ho sborsato una fortuna a Giulia* (I paid a fortune to Giulia)

The verb *rilasciare* is cross-listed with CURARE verbs (see class 10).

⁴⁴ see the Idiosyncratic Constructions table

Verbs of money transactions: VENDERE verbs

Subclass of: DARE verbs

Class Members:

Verbs	Senses
<i>affittare</i> "rent"	affittare una stanza (to rent a room)
<i>vendere</i> "sell"	vendere la casa (to sell the house)

Semantic Frame: A Seller transfers Goods to a Buyer

Framenet Frame: Commerce_Sell

Arguments	Roles	Semantic types
a1	Seller	Animate
a2	Goods	
a3	Buyer	Animate

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]> {a}[a3]	<i>Gianni ha venduto la casa a Giulia</i> (Gianni sold the house to Giulia)	
subj[a1]> V> obj[a2]	<i>Il negozio vende articoli sportivi</i> (The store sells sporting goods)	
subj[a1]> si-ind_refl-V> obj[a2]	<i>Gianni si affitta la stanza mentre è in vacanza</i> (Gianni rents his room while he's on)	

	vacation)	
subj[a2]> V-pass (> {da}[a1])	<i>Il quadro sarà venduto al miglior acquirente</i> (The painting will be sold to the best buyer)	
subj[a2]> si-refl_pass-V	<i>Gli appartamenti di solito si affittano per più di un anno</i> (Apartments are usually rented for more than a year)	
si-refl-impers-V	<i>Si affitta appartamento a non fumatori</i> (We [impers.] rent an apartment to non smokers)	
si-refl-pass-V	<i>In guerra si veniva venduti come schiavi</i> (At war, one used to be sold as a slave)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples
{per}PP	Money		<i>Gianni ha venduto una macchina per diecimila euro</i> (Gianni sold a car for 10000 Euros)

Comment:

This subclass is not present in Levin (1993), but was added here to group verbs that profile a change of possession that implies a money transaction.

Specifically, this group of verbs takes the perspective of the Seller, which gives Goods to a Buyer in exchange for a sum of money. Therefore they lexicalize the receiver of the action (the Buyer) as the complement of a PP headed by {a}. Moreover, VENDERE verbs are primarily characterized by their most typical modifier: as above mentioned, they specify in a PP headed by {a} or {per} the sum of money used for the transaction:

(1) *Ho affittato una stanza a cinquecento euro* (I rented a room for 500 euros)

(2) *Ho venduto il libro per dieci euro* (I sold the book for 10 euros)

These verbs can take Indirect Reflexives but not Direct ones (and therefore neither Impersonal constructions), the sole exception being the verb *vendere* (“to sell), since it is the only member of the subclass to allow a co-reference between *a1* and *a2*.

PROMETTERE verbs

VerbNet class: 13.3

Subclass of: VERBS OF CHANGE OF POSSESSION

Class Members:

Verbs	Senses
<i>accordare</i> “to grant”	Accordare un prestito (To grant a loan)
<i>affidare</i> “to entrust, to commit”	Affidare la vita a qualcuno (To commit one’s life to someone)
<i>anticipare</i> “advance”	Anticipare dei soldi a qualcuno (To advance someone money)

<i>assegnare</i> "to assign"	Assegnare i ruoli a ciascuno (To assign the parts to everyone)
<i>assicurare</i> "assure"	Assicurare un lavoro a qualcuno (To assure someone a job)
<i>garantire</i> "guarantee"	Garantire un posto a qualcuno (To guarantee a seat to someone)
<i>offrire</i> "offer"	Offrire una sigaretta a qualcuno (To offer someone a cigarette)
<i>promettere</i> "promise"	Promettere qualcosa (To promise something)

Semantic Frame: A Donor transfer the Theme to a Recipient

Framenet Frame: Giving

Arguments	Roles	Semantic types
a1	Donor	Animate
a2	Theme	
a3	Recipient	Animate

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Gianni promette sempre mari e monti</i> (Gianni always promises the earth)	
subj[a1]> V> obj[a2]> {a}[a3]	<i>Giulia promette un regalo ai figli</i> (Giulia promises a gift to her children)	
subj[a1]> si-ind_refl-V> obj[a2]	<i>Mi sono assicurato un posto</i> (I secured myself a seat)	

sbj[a1=a2]> si-dir_refl-V	<i>Mi sono offerta volontaria</i> (I offered myself as a volunteer → I volunteered)	<i>accordare, anticipare, assegnare, assicurare</i>
ci-si-refl-impers-V	<i>Ci si promette sempre molte cose</i> (One always promises oneself a lot of things)	
subj[a1]> V > {che}fin/ {di}inf-[a2]> {a}[a3]	<i>Ho promesso alla mamma che lo farò</i> (I promised mum I will do it)	<i>affidare, assegnare</i>
subj[a2]> V-pass (> {da}[a1])	<i>I dati sono stati trasferiti sul tuo laptop</i> (The data was transferred on your laptop)	
subj[a2]> si-refl_pass-V	<i>Non si accordano prestiti</i> (Loans are not granted)	
si-impers-pass-V	<i>Si è offerti in sacrificio</i> (One is offered as a sacrifice)	<i>accordare, anticipare, assicurare,</i>

Idiosyncratic constructions:

Construction	Examples
subj[a1]>si-offrire> {di}inf	<i>Mi sono offerto di pagare</i> (I offered to pay)

Comment:

Levin defines the FUTURE HAVING subclass as verbs that “relate to a change of possession that will take place in the future.” (Levin 1993:139) As in English,

Italian PROMETTERE verbs all refer to a transfer of possession that has not taken place yet (see (1)) or that, even if it happens in the present, is not immediate (see (2)).

(1) *Ti ho promesso un regalo* (I promised you a gift)

(2) *Ti accordo un prestito* (I grant you a loan)

However, these verbs are polysemous: they can also take a different meaning, related to taking commitments for future events.

Several of these verbs (maybe the most prototypical ones) allow sentential complements both in finite or infinite form.

They all allow Reflexives both in the indirect and direct form, but in different degrees. Only some verbs, however, allow the Direct Reflexive construction:

(3) *Mi sono promessa a lui* (I promised myself to him)

(4) **Mi sono accordata a lui* (*I granted myself to him)

These few verbs that allow the Direct form of the Reflexive, also allow the Reflexive Passive form; the only exception is *assegnare*, which does not occur in the Direct Reflexive Construction, but seems to be able to take the Reflexive Passive.

(5) *“La casa a cui si è assegnati viene decisa dal Cappello Parlante”*⁴⁵ (the House to which one is assigned is decided by the Sorting Hat)

(6) **Mi sono assegnata a lui* (*I assigned myself to him)

Many members, however do not allow an Animate *a2*, and therefore can only take an Indirect Reflexive.

⁴⁵ example taken from: <https://it.wikipedia.org/wiki/Hogwarts>

PROVVEDERE verbs

VerbNet class: 13.4

Subclass of: VERBS OF CHANGE OF POSSESSION

In Levin (1993) this subclass is further subcategorized in two groups: verbs of FULFILLMENT and EQUIP verbs. The classification applies to Italian as well, therefore the original structure of the class has been maintained: PROVVEDERE verbs have been subdivided in the two subclasses of PREMIARE/PUNIRE and EQUIPAGGIARE verbs.

a. verbs of PREMIARE/PUNIRE

VerbNet class: 13.4.1

Subclass of: Verbs of PROVVEDERE

Class Members:

Verbs	Senses
<i>castigare</i> * "to reprimand"	Castigare il bambino indisciplinato (To reprimand the undisciplined child)
<i>compensare</i> "to compensate"	Compensare qualcuno (To compensate someone)
<i>incoraggiare</i> "to encourage"	Incoraggiare un amico (To encourage a friend)
<i>premiare</i> "to award"	Premiare gli studenti meritevoli (To award worthy students)
<i>punire</i> * "to punish"	Punire la pigrizia (To punish laziness)

Semantic Frame: An Agent (the punisher or rewarder) performs a Response

action on an Evaluatee

Framenet Frame: Rewards_and Punishments

Arguments	Roles	Semantic types
a1	Rewarder/Punisher	Animate
a2	Evaluatee	Animate/Abstract

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Ho premiato Giulia</i> (I awarded Giulia) <i>La giuria ha premiato lo sforzo</i> (the judges awarded the effort)	
subj[a2]> V-pass(> {da}[a1])	<i>Gianni sarà compensato</i> (Gianni will be paid)	
si-impers-pass-V	<i>Si viene premiati con un assegno</i> (One is rewarded with a check)	
subj[a2]> si-refl_pass-V	<i>Si compenserà il tuo lavoro</i> (Your work will be paid)	
sub[a1=a2]> dir_refl-si-V	<i>Mi sono premiata con un gelato</i> (I rewarded myself with an ice cream)	<i>investire</i>
ci-si-impers-refl-V	<i>Ci si deve premiare ogni giorno</i> (One must reward oneself every day)	<i>investire</i>

Typical modifiers:

Modifier	Roles	Semantic types	Examples	Roots not allowing the construction
{di, con}PP	Instrument		<i>Incoraggiare con un discorso</i> (to encourage with a speech) <i>Investire il re dei pieni poteri</i> (to appoint all the power to the king)	
{a, per}PP	Cause		<i>Compensare qualcuno per il lavoro</i> (to compensate someone for the job done)	

Comment:

This group of verbs has been described by Gropen et al. (1989) as verbs where "X gives something to Y that Y deserves, needs, or is worthy of." Italian verbs of PREMIARE/PUNIRE do not allow a frame constructed with a prepositional phrase headed by {di} ("with"), while English does (e.g.: *Brown presented a plaque to Jones/ Brown presented Jones with a plaque*).

This subclass is similar to EQUIPAGGIARE verbs (see below). It includes verbs that allow only constructions with an Animate or Abstract Evaluatee as *a2*; these verbs, that is, can take either an Animate or an Abstract entity as direct object, specifying to what or whom is directed the rewarding or punishment.

The only exception seems to be the verb *investire*, that can only take an Animate *a2* in the sense here listed. However, *investire* does not allow the Reflexive form, since its *a2* is prototypically different from *a1*.

These verbs lexicalize the provided entity in the verbal root: any PREMIARE/PUNIRE verb can easily be decomposed into a DARE verb and its direct object, exactly like their English counterparts.

(1) *Ho premiato qualcuno* (I awarded someone) → *Ho dato un premio a qualcuno* (I gave an award to someone)

(2) *Ho compensato qualcuno* (I compensated someone) → *Ho dato un compenso a qualcuno* (I gave someone a reward)

b. EQUIPAGGIARE verbs

VerbNet class: 13.4.2

Subclass of: Verbs of PROVVEDERE

Class Members:

Verbs	Senses
<i>armare</i> “arm”	Armare l’esercito (to arm the army)
<i>attrezzare</i> “equip”	Attrezzare un laboratorio (to equip a lab)
<i>dotare</i> “provide”	Dotare un’auto di aria condizionata (to provide a car with air conditioning)
<i>equipaggiare*</i> “equip”	Equipaggiare una nave (to equip a ship)
<i>fornire</i> “supply”	Fornire la dispensa (to supply the pantry)
<i>investire</i> “to appoint”	Investire qualcuno del potere (To appoint someone the power)

<i>rifornire*</i> “supply, stock up”	Rifornire la città di vivande (to stock up the city with food)
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Semantic Frame: A Supplier gives a Theme (Equipment) to a Recipient to fulfill a need or a purpose

FrameNet Frame: Supply

Arguments	Roles	Semantic types
a1	Supplier	
a2	Recipient	
a3	Equipment	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Il governo ha armato l'esercito</i> (The government armed the army)	
subj[a1]> V> obj[a2]> {con, di}[a3]	<i>I guerriglieri armarono i bambini di fucile</i> (the guerrilla fighter armed children with rifles)	
subj[a1=a2]> si-dir_refl-V > {di}[a3]	<i>Armati di pazienza!</i> (Arm yourself with patience)	
ci-si-impers-refl-V	<i>Ci si arma come si può</i> (One arms oneself however one can)	

subj[a2]> V-pass (> {da}[a1])	<i>Tutte le auto sono dotate di aria condizionata</i> (All cars are equipped with air conditioning)	
si-impers-pass-V	<i>Si è dotati di alcuni pregi</i> (One is equipped [lit.] → gifted with some qualities)	
subj[a2]> si-refl_pass-V	<i>Si sono armate dieci navi</i> (Ten ships have been armed)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples	Roots not allowing the construction
{per}PP	Goal		<i>fornire la dispensa per l'inverno</i> (to equip the pantry for winter time)	

Comment:

These verbs are rather close in meaning to the previous group, but their specific character consists in focusing on the provided entity rather than on the action. That is, all the verbs in the EQUIPAGGIARE subclass “seem to specify something about what is provided rather than about the actual type of act of providing” (Levin, 1993:141).

These verbs are quite different syntactically from the rest of the class. Firstly, they do not allow the typical construction *subj[a1]> V> obj[a2]> {a}[a3]*, with *a3* being the Receiver/Beneficiary. Their typical syntactic pattern is constituted by a direct object taking the role of the Beneficiary of the action (the Entity towards which the action is directed), and by a PP headed by {con} or {di} specifying *with what* the Beneficiary is being equipped.

They all refer to a rather different kind of possession, which may be called “integral”: i.e., the Equipment, that is the entity that undergoes the change of possession, becomes integral part of the Equipped Entity. Furthermore the subject is not the real Agent that completes the Action, nor the previous possessor of the Equipment; the Equipper is more precisely defined as whoever makes the change of possession possible, someone who enables the action. The verbs are transitive and allow Direct Reflexive constructions. The verb *fornire* is cross-listed with DARE verbs (section 13.1).

ACQUISIRE verbs

VerbNet class: 13.5

Subclass of: VERBS OF CHANGE OF POSSESSION

Levin further sub-classifies OBTAINING verbs in two groups (GET and OBTAIN verbs) based on the syntactic criterion of the Benefactive alternation⁴⁶: Levin GET

⁴⁶ “This alternation resembles the dative alternation, and it is even sometimes subsumed under it. It differs from the dative alternation in involving the benefactive preposition *for* rather than the goal preposition *to* in the prepositional variant.” (Levin, 1993:49)

verbs participate in this alternation, while OBTAIN verbs do not (Levin, 1993: 143). Italian verbs of ACQUIRE cannot be classified according to this alternation, since, as already noticed for the Dative one, it is not present in Italian.

However, a subcategorization of ACQUIRE verbs in two further subclasses applies to Italian as well, but for different syntactic reasons. The class has been subdivided in two groups depending on the Agentivity of their typical subject: PROCURARE verbs have a strongly agentive subject; OTTENERE verbs, on the other hand, do not typically have subjects that carry out the action described by the verb, but rather are “beneficiaries” of this action: the verb lexicalizes something that happens to the subject. Consequently, the Passive construction is highly marked with such verbs. Moreover, they do not admit the Indirect Reflexive constructions.

Thus, we used these two types of constructions as syntactic marks for the classification of the two groups of verbs, therefore resulting in a corresponding structure to the English one, but with different criteria for verb clustering.

a. PROCURARE verbs

VerbNet class: 13.5.1

Subclass of: ACQUIRE verbs

Class Members:

Verbs	Senses
<i>accumulare</i> “assemble, amass”	Accumulare ricchezze (To amass riches)

<i>assorbire "absorb"</i>	Assorbire informazioni (To absorb information)
<i>assumere "assume, hire"</i>	Assumere la medicina per bocca (To take the medicine by mouth [lit.]--> to ingest the medicine) Assumere qualcuno (To hire someone)
<i>cogliere "pick, pluck"</i>	Cogliere fiori (To pluck flowers)
<i>conquistare "conquer, win over"</i>	Conquistare una ragazza (To win a girl over)
<i>prendere "take"</i>	Prendere qualcosa da casa (To take something from home)
<i>raccogliere "collect, pick up" "pick"</i>	Raccogliere frutta (To pick fruits) Raccogliere qualcosa (To collect something)
<i>recuperare "recover, retrieve"</i>	Recuperare la password (To recover the password)
<i>ricavare "obtain"</i>	Ricavare l'olio dalle olive (To obtain oil from olives)
<i>rubare "steal"</i>	Rubare i soldi dal cassetto (To steal money from the drawer)
<i>scegliere "chose"</i>	Scegliere il vestito (To chose the dress)
<i>sottrarre "subtract"</i>	Sottrarre i documenti (To subtract documents)
<i>trovare "find"</i>	Trovare le chiavi (To find the keys)

Semantic Frame: A Recipient acquires the possession of the Theme from a Source

Framenet Frame: Getting

Arguments	Roles	Semantic types
a1	Recipient	Animate
a2	Theme	
a3	Source	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V > obj[a2]	<i>Giulia sta cogliendo dei fiori</i> (Giulia is plucking flowers) <i>La terra assorbe l'acqua</i> (earth absorbs water)	
subj[a1]> V > obj[a2]> {da}[a3]	<i>Ho colto le margherite dal campo</i> (I picked daisies from the field)	<i>accumulare, assumere, conquistare, trovare</i>
subj[a2]> V-pass(> {da}[a1])	<i>Il diamante è stato rubato ieri sera</i> (The diamond was stolen last night)	
subj[a2]> si-refl_pass-V	<i>A scuola si assorbono troppe informazioni</i> (At school, too much information is absorbed)	
si-impers-pass-V	<i>Si è assunti in prova</i> (One is hired on probation)	<i>accumulare, assorbire, ricavare, rubare</i>
subj[a1]> si-ind_refl-V> obj[a2]	<i>Giulia si è scelta un nuovo amico</i> (Giulia has chosen for herself a new friend)	
ci-si-impers-refl-V	<i>Ci si sceglie come amici a vicenda</i> (We [impers.] pick each other as friends)	<i>accumulare, assorbire, cogliere, conquistare</i>

Typical modifiers:

Modifier	Roles	Semantic types	Examples	Roots not allowing the construction
{Loc}PP	Location		<i>Ho accumulato i mobili nel ripostiglio</i> (I assembled the furniture in the storage closet)	<i>assumere</i>
{per}PP	Goal		<i>Ho raccolto le more per la torta</i> (I picked some blackberries for the cake)	

Idiosyncratic constructions:

Construction	Examples	Roots taking the construction
subj[a1]> scegliere > obj[a2]> C_pred	<i>Ho scelto te come mio vice</i> (I chose you as my deputy)	<i>scegliere</i>

Comment:

The verbs in this subclass refer to the action of getting something from a Source, typically expressed with a prepositional phrase headed by {da}. However, a few verbs do not allow the expression of the Source as a prepositional phrase (see the *Constructions* table above).

What is interesting about this subclass is that the Agent is the Recipient of the changing of possession, and not a Donor as for the case of DARE verbs (13.1).

They typically have a strongly Agentive subject, hence they allow the Indirect Reflexive construction and are extensively used at the Passive voice, which is very common and unmarked. However, the Impersonal Passive voice is not shared by all members, since the scarcity of Animate *a2s*.

As in English, some of these verbs⁴⁷ are cross-listed with RUBARE verbs (section 10.5); this double classification of a set of verbs is due to the fact that “in many situations in which someone obtains something someone else loses possession of that thing.” (Levin, 1993:142).

The verb *trovare* only allows the construction *subj[a1]> V> obj[a2]> {da}[a3]* only with Animate sources as in the following examples:

- (1) *Gianni ha trovato il libro da suo zio* (Gianni found the book from his uncle → at his uncle’s house)

The verb *assumere* is listed here with two basic meanings of the root: the English senses of “to hire”, and that of “to accept, assume”.

- (2) *Ho assunto Gianni* (I hired Gianni)
- (3) *Gianni ha assunto il comando* (Gianni accepted the leadership [lit.] → took charge)

⁴⁷ *prendere, rubare, sottrarre* (“to take”, “to steal”, “to subtract”)

a.1 Verbs of money transactions: COMPRARE verbs

Subclass of: PROCURARE verbs

Class Members:

Verbs	Senses
<i>acquistare</i> "to buy"	acquistare una casa (to buy a house)
<i>affittare</i> "to rent from"	affittare un appartamento (to rent an apartment)
<i>comprare</i> "to buy"	comprare un vestito (to buy a dress)

Semantic Frame: A Buyer acquires Goods from a Seller for a Recipient

Framenet Frame: Commerce_Buy

Arguments	Roles	Semantic types
a1	Buyer	Animate
a2	Goods	
a3	Recipient	Animate

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V > obj[a2]	<i>Giulia ha comprato un computer</i> (Giulia bought a computer)	
subj[a1]> V > obj[a2]> {da}[a3]	<i>Giulia ha comprato un computer da un amico</i> (Giulia bought a computer from a friend)	
subj[a1]> V > obj[a2]> {a}[a4]	<i>Ho comprato un computer a mio figlio</i> (I bought my son a	

	computer)	
subj[a2]> V-pass (> {da}[a1])	<i>Tutte le copie sono state comprate da lui</i> (All the copies were bought by him)	
subj [a2]> si-refl_pass-V	<i>Si compra oro</i> (Gold is purchased here)	
subj[a1]> si-ind_refl-V> obj[a2]	<i>Ti sei comprato una bella auto</i> (you bought for yourself a very nice car)	
ci-si-impers-refl-V	<i>Ci si comprano molti vestiti</i> (One buys for oneself too many clothes)	

Typical modifiers:

Modifier	Roles	Semantic types	Examples	Roots not allowing the construction
{Loc}PP	Location		<i>Ho comprato il vestito in quel negozio</i> (I bought the dress in that store)	
{a, per}PP	Money		<i>Ho comprato un computer per trecento euro</i> (I bought a computer for 300 euros)	

Comment:

This subclass, like the one under DARE verbs, groups together verbs that profile an event in which the change of possession is achieved through a parallel transaction of a sum of money. In this case the verbs reflect the Buyer's perspective, the Agent which acquires some Goods from a Seller in exchange for Money.

These verbs behave rather similarly to PROCURARE verbs, but what distinguishes them is that they have an additional argument (*a4*) which indicates the Recipient or Beneficiary of the action of purchase. Furthermore, they allow as a typical Modifier a PP headed by {a} or {per} which specifies the amount of money needed to complete the transaction, as in the case of VENDERE verbs (see above); Since *a1* and *a2* cannot be co-referential, these verbs do not take the Direct Reflexive but only allow Indirect Reflexives.

The verb *affittare* is here listed with the sense of "to pay money for the use of (real estate, machinery, etc.) to the landlord or owner."⁴⁸

b. OTTENERE verbs

VerbNet class: 13.5.2

Subclass of: ACQUISIRE verbs

Class Members:

Verbs	Senses
<i>conseguire</i> "obtain, earn"	Conseguire la laurea (To earn a degree)

⁴⁸ from: Wordreference.com

<i>ereditare</i> * “inherit”	Ereditare una villa (To inherit a villa)
<i>incassare</i> “cash in”	Incassare un premio (To cash in an award)
<i>ottenere</i> “obtain”	Ottenere un aumento (To obtain a raise)
<i>ricevere</i> “receive”	Ricevere una lettera (To receive a letter)
<i>riscuotere</i> “collect”	Riscuotere un debito (To collect a debt)
<i>trarre</i> “draw”	Trarre le conclusioni (To draw conclusions)
<i>trovare</i> “find”	Trovare un tesoro (To find a treasure)
<i>vincere</i> * “win”	Vincere una macchina (To win a car)

Semantic Frame: A Recipient comes into possession of the Theme from a Source

Framenet Frame: Getting

Arguments	Roles	Semantic types
a1	Recipient	Animate
a2	Theme	
a3	Source	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V > obj[a2]	<i>Gianni ha ottenuto il lavoro</i> (Gianni obtained the job)	
subj[a1]> V > obj[a2]> {da}[a3]	<i>Lo spettacolo ha ottenuto lodi unanimità dalla critica</i> (the show obtained unanimous praise from the critics)	

subj[a2]> V-pass(> {da}[a1]) (?)	<i>I fondi sono stati ottenuti con l'aiuto della Cominutà Europea</i> (the money was obtained with the help of the European Community)	<i>trarre</i>
subj [a2]> si-refl_pass-V	<i>I risultati si ottengono lavorando duramente</i> (Results are obtained with hard work)	

Comment:

The verbs in this group are semantically similar to PROCURARE verbs, especially in the fact that the subject is a Recipient. However, differently from the PROCURARE class, the verbs listed here are not constructed with strongly agentive subjects.

This difference leads to a fundamental distinction between the two subclasses: while in PROCURARE verbs the strongly agentive subject carries out the action and acquires the possession of the Theme, in OTTENERE verbs the subject comes into the possession of such Theme without a direct active control of the action. Therefore, it can be said that the events lexicalized by OBTAIN verbs “happen” to the Recipient.

SCAMBIARE verbs

VerbNet class: 13.6

Subclass of: VERBS OF CHANGE OF POSSESSION

Class Members:

Verbs	Senses
<i>cambiare</i> "change"	Cambiare vestiti (To change clothes)
<i>sacrificare</i> "sacrifice"	Sacrificare lo studio (To sacrifice studying)
<i>scambiare</i> "exchange"	Scambiare le valigie (To exchange suitcases)
<i>sostituire</i> "substitute"	Sostituire il rubinetto (To substitute the faucet)
<i>rimpiazzare*</i> "replace"	Rimpiazzare un amico (To replace a friend)

Semantic Frame: An Agent changes the filler of a role by placing a New Entity in the position previously occupied by the Old

Arguments	Roles	Semantic types
a1	Agent	
a2	Old Entity	
a3	New Entity	

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V > obj[a2]	<i>Devo cambiare le gomme</i> (I have to change tires)	
subj[a1]> V> obj[a2]>{a,con,in,per}[a3]	<i>Ho sacrificato il lavoro per la</i>	

	<i>famiglia</i> (I sacrificed work for family)	
subj[a2]> V-pass (> {da}[a1])	<i>Giulia è stata scambiata per Marta!</i> (Giulia was exchanged→ was mistaken for Marta)	
si-impers-pass-V	<i>Si è sostituiti quando si è troppo stanchi</i> (One is replaced when is exhausted)	
subj[a2]> si-refl_pass-V	<i>Alcune cose si sacrificano volentieri</i> (Some things are gladly sacrificed)	
subj[a1]> si-dir_refl-V	<i>Gianni si è sostituito a Maria nel gruppo</i> (Gianni replaced Maria in the group)	<i>rimpiazzare</i>
subj[a1]> si-ind_refl-V> obj[a2]	<i>I bambini si scambiano i regali</i> (Children are exchanging gifts)	<i>sacrificare, sostituire</i>
ci-si-impers-refl-V	<i>Ci si sacrifica per nulla</i> (One sacrifices oneself for nothing)	

Comment:

These verbs, both in Italian and English, relate to exchanging one thing with another. They are listed as members of a subclass of verbs of CHANGE OF POSSESSION, however they differ from the rest of this class in not encoding a change of possession between a subject and a beneficiary, but an exchange between two entities that remains in possession of the subject.

(1) *Ho cambiato il vestito rosso con uno verde* (I changed the red dress with a green one)

As shown in (1), what changes is not the Possessor of a Theme but the theme itself. This is the only subclass of the VERBS OF CHANGE OF POSSESSION - together with EQUIPAGGIARE verbs- that does not show the typical construction of the class *subj[a1]> V> obj[a2]> {a}[a3]*. They are instead construed with a PP headed by a number of prepositions (a, con, in, per) that specifies with what the *a2*-direct object has been exchanged. They also allow a Causal modifier headed by {per} that specifies the cause of the action of changing:

(2) *Ho cambiato macchina per la nascita di mio figlio* (I changed my car because of the birth of my son)

It can be said that SCAMBIARE verbs allow direct Reflexives, although this construction is possible only with some of the members of the subclass: *cambiare*, *scambiare*, *sostituire* and *sacrificare* (“to change”, “to exchange”, “to replace”, “to sacrifice”). These verbs, when in the Reflexive form, are generally followed by modifiers.

(3) *Mi sono sacrificato per te!* (I sacrificed myself for you)

The only verb that allows the Reflexive form- both Direct and Indirect- without the need of a prepositional phrase is the verb *cambiare* (“to change”) when in the sense of “changing clothes”:

(4) *Mi sono cambiato prima di uscire* (I changed [myself] before going out)

(5) *Mi sono cambiata il vestito tre volte* (I changed my dress three times!)

CONDIVIDERE verbs

Subclass of: VERBS OF CHANGE OF POSSESSION

Class Members:

Verbs	Senses
<i>condividere</i> “share”	Condividere un’esperienza (To share an experience)
<i>dividere</i> “divide”	Dividere il pranzo (To divide lunch)
<i>smezzare</i> *† “split”	Smezzare il panino (to split the sandwich)

Semantic Frame: Two Entities (A Sharer and a Beneficiary)⁴⁹ have a shared posses of a Commonality

Framenet Frame: Commonality

Arguments	Roles	Semantic types
a1	Entity 1 (Sharer)	
a2	Commonality	
a3	Entity 2 (Beneficiary)	Animate

Constructions:

Syntactic frames	Examples	Roots not allowing the construction
subj[a1]> V> obj[a2]	<i>Purtroppo non posso condividere queste informazioni</i> (Unfortunately I cannot share this information)	

⁴⁹ my specification

subj[a1]> V> obj[a2]> {con,tra}[a3]	<i>Gianni ha condiviso il pranzo con Giulia</i> (Gianni shared his lunch with Giulia)	
subj[a2]> V-pass	<i>Il segreto è stato condiviso</i> (the secret has been shared)	
subj[a2]> si-refl_pass-V	<i>Le belle esperienze spesso si condividono</i> (Good experiences are often shared)	
subj[a1]> si-ind_refl-V> obj[a2]	<i>Ci siamo divisi una pizza</i> (we shared a pizza)	
ci-si-impers-refl-V	<i>Ci si divide i compiti</i> (We [impers.] share our duties)	<i>condividere</i>

Comment:

These verbs are not present in Levin 1993 nor in VerbNet, but has been added in the present work. We thought it necessary, in fact, to add a further subclass that included verbs which indicate shared possession rather than a transfer of possession. That is, we grouped together verbs of change of possession that lexicalize actions which do not imply a loss of *a2* by *a1*.

In Italian such verbs are constructed with the preposition {con} as head of a Beneficiary PP. They are all transitive, and they do not allow Direct Reflexive constructions.

CONCLUSIONS

This thesis has presented the results of a preliminary investigation aiming at developing an Italian verb classification, based on the model of Levin/Verbnet's system but which differs from the original English one in a number of ways. The present classification is not only adapted to Italian syntax and semantics, but it is also strongly rooted in a distributional and constructionist perspective. First of all, the greatest innovation with respect to Levin/VerbNet is the absence of argument alternations; following Goldberg and others, we recognized that alternations are epiphenomena, and as such they do not have any predictive power and do not lead to any powerful generalization. Thus, cases that in the literature were described and recognized as instances of argument alternations, were here treated as examples of verb polysemy.

A second new element in our work was that each class was matched with a conceptual-semantic frame from FrameNet, in order to describe the type of event profiled by the class. Thirdly, we grouped verbs based on their distribution (in the LexIt database) and the types of constructions they occur in (found by analyzing both LexIt and ValPal). Therefore, the classes presented here can be defined as sets of semantically related verbs that share the same patterns and constructions. However, these difference between the two systems notwithstanding, the resulting classification remains compatible with VerbNet/Levin's taxonomy.

In analyzing and comparing Italian verb classes with their English Levin/VerbNet counterparts, we found various mismatches, which are due to syntactic or semantic differences between the two languages, or discrepancies between the construction methodologies. Therefore, several subclasses that were present in the original system were eliminated, and others were added when deemed necessary. I will here present and discuss the subclasses that were eliminated from our taxonomy, and only mention those that are commented in chapter 3.

The subclasses that were eliminated from the Italian classification due to the inevitable syntactic or semantic differences between Italian and English are SLIDE verbs (VerbNet class: 11.2), CONTRIBUTE verbs (VerbNet class: 13.2), and BERRY verbs (VerbNet class: 13.7).

Levin's SLIDE verbs (bounce, float, move, roll, slide), a subclass of the SENDING and CARRYING class, are characterized by the author as "intransitive verbs of manner of motion, as well as transitive verbs of causing a change of position" (Levin 1993:134). In English, that is, there is a subset of verbs which can be used both as intransitive and transitive, and the latter use can be roughly paraphrased as "cause x to y", where y is the verb in question. In Italian such a subclass is not possible, since the causative use of an intransitive verb of manner of motion is

typically marked by a causative structure such as “*fare y*” (“to make y”, literally),

e.g.:

(1) *La palla rotola* (The ball rolls)

(2) *Il bambino fa rotolare la palla* (The boy rolls the ball)

To sum up, English allows a single intransitive verb to take on a causative sense in a transitive construction; in Italian this is not possible, and the causative sense has to be expressed with a specific structure.

Another excluded subclass, within the CHANGE of POSSESSION class, is the one of CONTRIBUTE verbs (e.g.: administer, contribute, disburse, distribute, etc). Levin describes this subclass exclusively using syntactic criteria, as she expressly says: “these verbs of change of possession do not allow the dative alternation. Their failure to be found in the double object construction has often been attributed to their Latinate character”. (Levin, 1993:139) The Dative Alternation, or the lack of it, is the most important syntactic criterion for English CHANGE of POSSESSION verbs, but Italian does not allow it. Furthermore it is clearly not possible to isolate a set of verbs with “Latinate character” in Italian or in any Romance Language. Therefore, it was not surprising that a satisfactory Italian counterpart for CONTRIBUTE verbs has

not been found. This subclass, and the constructions which characterize it, appears to be strictly specific to English.

Finally, BERRY verbs (e.g.: berry, birdnest, blackberry, clam, crab, fish, etc) were eliminated from the Italian version of the classification for both syntactic and semantic reasons. The members of this class, in fact, are all zero-related to nominals: “each of these verbs relates to collecting or gathering the entity named by the noun from which the verb takes its name.”(Levin 1993:144) In Italian, however, not only the zero-relation to nominals is not possible, but there are also no semantically direct counterparts of these verbs. They are typically translated using the verb *raccogliere* with the direct object (*a2*) that refers to the plucked fruit:

(3) The children like to berry in the summer → *I bambini amano raccogliere
more [to pick berries lit.] durante l'estate*

As the example shows, Italian generally realizes the zero-related English verb in two parts (a verb indicating the action and the noun indicating the referent upon which the action is act) to maintain the original meaning. The case of BERRY verbs is indicative of one of the main syntactic differences between the two languages: while English allow a zero-derivation from nouns for verbs (e.g: to berry), Italian does not

have this process and allows denominals (see the case of IMBUSTARE and GUIDARE verbs).

Beside the differences in syntax and semantics, our classification differs from the original Levin/VerbNet one in not using argument alternations as main criteria for verb classifications. Therefore two more subclasses of the Levin/VerbNet system, which are individuated solely based on the presence of particular alternations, were not included in the classification of Italian verbs. Those subclasses are SPRAY/LOAD and WIPE verbs (see chapter 3). We chose not to create a separate group for those verbs, but we re-distributed them according to the different constructions they occur in: SPRAY/LOAD verbs are cross-classified between METTERE and RIEMPIRE verbs, and WIPE verbs between VUOTARE and RIMUOVERE. We listed the “holistic” sense of SPRAY/LOAD verbs (e.g.: *Gianni carica il camion di paglia/ Gianni loads the truck with hay*) in the RIEMPIRE class, since they appear to refer to the corresponding semantic class, in which the a2 is totally filled with the content expressed by a3. Contrarily, the “partitive” sense of these verbs (e.g.: *Gianni carica la paglia sul camion/Gianni loads hay on the truck*) appear to refer to a PUTTING semantic frame, and they have been classified accordingly. Similarly, the same redistribution was made with WIPE verbs: their “holistic” sense (e.g.: *Il maestro*

cancella la lavagna/The teacher wipes the blackboard) was assigned to VUOTARE verbs, and the “partitive” one (e.g.: *Il maestro cancella le scritte dalla lavagna /The teacher wipes the writings from the blackboard*) to RIMUOVERE verbs.

There are also several subclasses that we added for Italian, or subclasses whose position was modified. Firstly, we added the subclass of UCCIDERE verbs under VERBS OF KILLING. This subclass was added given the deep similarity of the two members (*ammazzare, uccidere*), which both translate to the sole English verb “to kill”.

Secondly, we created two whole new classes, VERBS OF FILLING and VERBS OF CLEARING. In the original system, these groups of verbs are described as subclasses of - respectively- VERBS OF PUTTING and REMOVING. Contrarily, for Italian verbs we saw fit to follow FrameNet in classifying these verbs: since both of these groups of verbs are treated as autonomous classes referring to independent frames (FILLING and EMPTYING), we decided to classify them independently, although they are strictly related with PUTTING and REMOVING verbs both semantically and syntactically. Under the FILLING class, we also put IMBURRARE verbs, the counterpart to Levin’s BUTTER verbs, which she lists under PUT verbs.

This change of classification was again due to the semantic frame of the class: IMBURRARE verbs appear to relate more to a FILLING frame than to a PUTTING one.

Another difference is that ATTIRARE verbs, which Levin classifies as an independent class (EXERTION of FORCE), are here listed as a subclass of SENDING AND CARRYING verbs. Contrarily to the modifications explained above, this new organization was not based on other resources, but entirely our decision. Since Levin's EXERTION OF FORCE class contains only a very limited set of verbs without any further subdivision, we decided to "split" the original class: most of the verbs were put in the additional SENDING AND CARRYING verbs, the ATTIRARE subclass which gathers verbs in which the exertion of force profiles a movement. Other verbs that profile a transformation of the shape of the object were not considered in the present classification, but could be reunited under other transformation verbs.

Finally, the more significant changes with respect to the original structure were made in the CHANGE OF POSSESSION class, the most numerous one and the one that created the most mismatches between Italian and English. We added three further subclasses, VENDERE and COMPRARE verbs, respectively under DARE and PROCURARE. These subclasses were added in order to group together the verbs that profile a change of possession that implies a money transaction. Lastly, we thought

necessary to create a new subclass, CONDIVIDERE verbs, that included verbs which lexicalize a shared possession rather than a transfer of possession. That is, these verbs lexicalize actions which do not imply a loss of *a2* by *a1*.

In conclusion, we consider the work of research here presented as a reliable example of distribution-based Italian verb classification. It is clear that much additional work will be required in order to fully develop a complete and coherent classification for Italian verbs. We hope however that this study will stimulate further investigations in this field.

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TABLES OF CONSTRUCTIONS USED IN VERB CLASSES

Preliminary Notes:

1. [ax], [ay] and [az] indicate generic arguments of verb structure. In each specific construction, arguments are marked by numbers ([a1], [a2], [a3]) indicating which argument of the given verbs functions as Subject, Object etc.
2. Each construction is described by its name or description found in the literature. Several constructions are instead described only by an example, since they represent more specific types of structures.
3. We subdivided the constructions into two groups: in the first, constructions that involve only core elements of the argument structure are listed; the second groups together constructions that are formed by argument and/or adjuncts, that is constructions that may involve also non-core elements.

CONSTRUCTIONS INVOLVING ARGUMENTS

Construction	Definition/Name	Example
subj[ax] > V > obj[ay]	Transitive	<i>Gianni uccide il lupo</i> (Gianni kills the wolf)
subj[ax] > V	Intransitive	<i>Il quadro è appeso al muro</i> (The painting hangs from the wall)
subj[ax=ay] > si-dir_refl-V	Direct Reflexive	<i>Cleopatra si uccise</i> (Cleopatra killed herself)
subj[ax] > si-ind_refl-V (>obj[ay])	Indirect Reflexive	<i>Mi cambio la maglietta</i> (I'm changing [to myself] shirt)
subj[ax,ay] > si-recip-V	Reciprocal	<i>I bambini si scambiano i regali</i> (The kids exchange gift [between one another])

subj[ax=az]>si-ind_rec_refl-V>obj[ay]	Indirect Reciprocal	<i>Anna e la sua amica si inviano sempre messaggi</i> (Anna and her friend always send each other texts)
ci-si-refl-impers-V	Impersonal of Reflexive	<i>Ci si incontra sempre in palestra</i> (We [impers.] always meet each other at the gym)
si-refl-refl-impers-V	Impersonal Reflexive	<i>Si comprano sempre più cose inutili</i> (We [impers.] more and more buy useless things)
subj[ay]>si_anticaus-V	Anticausative	<i>Il bicchiere si rompe subito</i> (The glass broke immediately)
subj[ay]> V-pass (> {da}{ax})	Passive	<i>La torta è stata finita da Giulia</i> (The cake was finished by Giulia)
si-impers-pass-V	Impersonal Passive	<i>Si viene pagati per lavorare</i> (one gets paid for working)
subj[ay]> si-refl_pass-V	Reflexive Passive	<i>I nemici si uccidono con facilità</i> (Enemies are killed easily)
subj[ax]> V> obj[ay]> {Loc}{az}	Locative	<i>Gianni mette il libro sul tavolo</i> (Gianni puts the book on the table)
subj[ax]> V> obj[ay]> {a}{az}	“Benefactive”	<i>Giulia manda una lettera alla madre</i> (Giulia sends a letter to her mother)
subj[ax]> V > {che}fin/{di}inf-[ay]> {a}{az}	“Sentential”	<i>Giulia ha promesso alla mamma di non tornare tardi</i> (Giulia promised her mother not to come home late)
subj[ax]> V> {a}{ay}		<i>Robin Hood rubava ai ricchi</i> (Robin Hood used to steal from the rich)
subj[ax]> si-inacc-V		<i>La tenda si è alzata per il forte vento</i> (The curtain raised for the strong wind)

CONSTRUCTIONS INVOLVING ARGUMENTS AND ADJUNCTS

Construction	Description	Example
subj[ax]> V > obj[ay] > {a,di,con}[az]/ PP	Instrument	<i>Ho ucciso qualcuno con un colpo in testa</i> (I killed someone with a blow on the head)
subj[ax]> V > obj[ay]> {per}PP	Purpose/Cause	<i>Ho ucciso qualcuno per vendetta</i> (I killed someone for revenge)
subj[a1]> si-dir_refl-V> {a,per}PP	Reflexive construction with a Purpose complement	<i>Mi sono prestata allo scherzo</i> (I lended myself to the joke)
subj[ax]> V > obj[ay]> {a, per}PP	Recipient	<i>La madre pulisce il viso al bambino</i> (the mother cleans the baby's face)
subj[a1]> si-dir_refl-V> {a}PP/[az]	Reflexive construction with a Recipient complement	<i>I santi si donano completamente a Dio</i> (saints donate themselves completely to God)
subj[ax]> V > obj[ay]> {come, in, per}PP	Predicative	<i>Ho messo 100 euro come premio</i> (I have put 100 euros as a reward)
subj[ax]> V > obj[ay]> {per}PP	Value	<i>Gianni ha venduto una macchina per diecimila euro</i> (Gianni sold a car for 10000 Euros)
subj[ax=ay]> si-dir_refl-V> ({prep}PP/[az])*	Direct Reflexive + Complement	<i>Gianni si mette a tavola</i> (Gianni puts himself at the table [lit.] → Gianni sits at the table)
subj[ax]> si-ind_refl-V> obj[ay]> ({prep}PP/[az])*	Indirect Reflexive + Complement	<i>Giulia si mette lo zaino sulle spalle</i> (Giulia puts the rucksack on her shoulders)
subj[ay]> pass-V> ({prep}PP/[az])*	Passive + Complement	<i>Le scritte sono state tolte dal muro dall'imbianchino</i> (The writings were removed from the wall by

		the painter)
subj[ax]> V > obj[ay]> {da,di}PP	“Privative”	<i>Ho rimosso l’ostacolo dal sentiero</i> (I removed the obstacle from the path)

NOTES:

*In several cases Reflexive (Direct and Indirect) and Passive constructions can take an additional PP with an adjunct or argument as complement, depending on the valency of the verb. E.g. verbs of PUTTING usually occur in Reflexive and Passive constructions taking a Locative PP:

1. *Gianni si è appoggiato al muro.* (Gianni leaned against the wall) (DIRECT REFL.)
2. *Gianni si accostò una mano alla fronte.* (Gianni put his hand on his forehead) (INDIRECT REFL.)
3. *Il miele viene messo nel tè.* (Honey is put into tea) (PASSIVE)