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THE EMERGENT PATTERNS OF ITALIAN IDIOMS:  
A DYNAMIC-SYSTEMS APPROACH

by

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In loving memory  
of Auntie Silvana

... meaning itself is action in the context of our history, our common experience. As the culture in all its manifestations infuses our everyday life, meaning is suffused with the shared aspects of that culture. Meaning is activity in context in a system with a dynamic history, and thus meaning comes with interpretive values, beliefs, and tendencies shared by the culture and the family within it. There are no logical structures abstracted from these meanings, as each cognitive act creates its own meaning.

*(Esther Thelen and Linda B. Smith)*

Only together, as a complementary pair, do apparently contrasting phenomena, such as individual-collective, integration-segregation, local-global, attraction-repulsion, convergence-divergence, dwell-escape, and so on, exhaust the knowledge necessary for understanding.

*(J.A. Scott Kelso)*

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## **Declarations**

### **Declaration of statement**

I, Enrico Torre, hereby declare that the work on which this thesis is based is my original work (except where acknowledgments indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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## **Abstract**

In traditional generative linguistic theories, idiomatic constructions are seen as a sort of “anomaly”, and dismissed as non-decomposable items of non-literal language, uninteresting and “peripheral”. Contrary to this view, in the last decades psycholinguistic and corpus-linguistic studies have shown that idioms can often undergo structural modification and display different variation patterns, according to their specific formal and semantic properties. In virtue of these findings, the present study aims to investigate the levels of stability and variation in Italian idioms from a socio-cognitive point of view, in a two-step fashion.

In the first stage, a set of 150 idiomatic constructions will be selected from a dictionary (Sorge 2010) and, taking the categorization proposed by Langlotz (2006a) as a starting point, a cognitively motivated typology of Italian idiomatic constructions will be drawn. Langlotz's parameters and categories will be used to classify Italian idioms into a structured taxonomy based on a set of notions which are generally accepted and employed by proponents of functionally-oriented approaches to language; these notions will be applied taking the Italian cultural context into consideration, in order to avoid (potentially hasty) claims about their supposed universality. Then, the mutual relationship between different idioms on the one hand and between idiomatic and non-idiomatic constructions on the other hand will be addressed and accounted for in the light of a constructionist perspective on language.

In the second part of my study, a sample of occurrences of a subset of 50 idiomatic constructions will be downloaded from a large Italian corpus, in order to observe their variational behavior in the context of actual interactions in a contemporary setting. Particular attention will be paid to the potential correlation between the category an idiom was allocated to in the previous stage and the variation patterns observed in its occurrences, with the specific aim to understand if a causal connection can be established between the idiom category and the (quantitative and qualitative) level of variation observed in real language data.

The two phases of the study will be treated as deeply interconnected, and a dynamic-systems approach will be adopted to highlight the several links between the two stages. An integrated explanation of the mechanisms which regulate the “life-dynamics” of idiomatic constructions will be provided, taking distinct dimensions, time-scales, and levels of granularity into account. Finally, the results of the study will be scrutinized in order to assess the adequacy of a dynamic-systems perspective to accurately describe and explain the self-organizing nature of linguistic constructions and their relationship with other aspects of human cognition and interactivity.



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## Abbreviations

1	First Person
2	Second Person
3	Third Person
AdjP	Adjectival Phrase
AdvP	Adverbial Phrase
AUX	Auxiliary
CBGV	Context-Bound Grammatical Variant
COND	Conditional
Cs	Subject Complement
DAT	Dative
DST	Dynamic Systems Theory
EV	Erroneous Variant
F	Feminine
FUT	Future
GER	Gerund
IMP	Imperative
IMPF	Imperfect
IMPR	Impersonal
INF	Infinitive
INTS	Intensifier
M	Masculine
N	Neuter
NEG	Negation
NOV	No Variation
NP	Noun Phrase
OBJ	Object
OBL	Oblique
P + NP	Preposition + Noun Phrase
PL	Plural
PP	Prepositional Phrase
PRES	Simple Present
PRES PERF	Present Perfect
PRN	Pronoun
PSTPART	Past Participle
PV	Pseudo-Variant
REFL	Reflexive
SBJ	Subject
SCV	Striking Creation of a Variant
SG	Singular
SUBJ	Subjunctive
SV	Systematic Variant
TD1	Target-Domain 1
TD2	Target-Domain 2
UV	Usual Variant
V	Verb

## **1. Introduction**

The main purpose of the present study is to carry out an analysis of the socio-cognitive status of Italian idiomatic constructions and their variational behavior (i.e. the way speakers use them in actual linguistic events). While the notion of “construction” has a long history in linguistics, the definitions provided by different scholars often do not coincide. Since the term is of central importance in this thesis, it is worth clarifying at the very beginning that I will use it to refer to any symbolic unit coupling form and meaning, following Croft (e.g. 2001). Idiomatic constructions, whose investigation is generally recognized as a rather complicated affair (see §1.2 below for a definition of “idiom”), are generally considered to a manifestation of “figurative language”, a label which is normally used to make reference to expressions whose meaning is defined by a (usually metaphoric or metonymic) extension from a literal meaning, which instead is not dependent on any extension from any other meaning (see Dancygier and Sweetser 2014: ch. 1).

While the generative paradigm, which has long dominated linguistic theory, has traditionally considered idiomatic constructions as exceptional linguistic units and relegated them to the periphery of language, alternative paradigms arisen in the last decades have recognized that idioms are omnipresent in language use. At the same time, the study of language in its connection and interaction with other cognitive functions has gained popularity, and the investigation of this relationship through the analysis of empirical data has suggested that the figurativity of language is better seen as a cline rather than as an all-or-none condition (see Gibbs and Colston 2012 for an overview of the studies carried out in the last decades). Accordingly, in the present study idiomatic constructions were addressed as a kind of linguistic units which include a variety of distinct expressions, whose meaning is defined by the interaction of a series of factors which range from the semantic to the cognitive, and from the affective to the socio-cultural, thus providing an interesting window into the complexities of human cognition, both individual and social. Moreover, they were seen as tightly interconnected with grammatical and lexical constructions of several

levels of abstraction/concreteness, literality/figurativity, etc. in a network of linguistic units which emerges through usage over time, following proponents of the usage-based model of language (e.g. Bybee 1985; Langacker 1987; Tomasello 2003).

The phenomenon of idiomatic language was empirically investigated in a two-step fashion. In the first phase of my study, I analyzed a selected sample of Italian idioms from a dictionary (Sorge 2010), taking Langlotz's (2006a) book-length contribution as a reference point (see §1.2 below). I classified these idiomatic expressions into a typology according to the conceptual structures which underpin these constructions, taking into consideration the Italian cultural context; in addition, I focused on the mutual relationship between distinct idiomatic expressions on the one hand and between idioms and other linguistic constructions on the other hand. In the second phase, I selected a subset of the idiomatic constructions observed in the previous stage and for each of them I analyzed a sample of occurrences in real usage, making use of corpus data. In this phase, I classified each occurrence into a specific variation (or non-variation) pattern, according to its level of conformity or divergence in comparison to a standard.

In the following sections, I will first introduce in more detail the epistemological background which represents the backbone of the present study (§1.1). Second, I will clarify the choice of Italian idiomatic constructions as the object of investigation (§1.2). Next, I will outline the Research Questions which guided the present piece of work (§1.3). Finally, I will provide an illustration of the structure of the next chapters of my thesis (§1.4).

### **1.1. Epistemological grounding of the present study**

In the second half of the 20<sup>th</sup> century, linguistic theory has been dominated by the rationalist paradigm known as Generative Grammar. Proponents of generative approaches consider language as an autonomous faculty, governed by domain-specific cognitive principles. Language, from this perspective, consists in an innate set of formal rules which operate on a list of abstract symbols (e.g. Pinker 1994; 1999). Advocates of generative theories of language draw a sharp distinction between

competence (language knowledge) and performance (language use): the scope of this formal approach is to model the linguistic knowledge of the native speaker of a given language, which is considered to be independent from actual language use. Moreover, human beings are supposed to be endowed with an innate set of principles of language organization, collectively referred to as Universal Grammar, which are thought to be shared across all linguistic communities.

However, in recent decades, alternative frameworks have arisen which reject the traditional view of language as an innate, autonomous faculty. These frameworks, which can be subsumed under the broad label “functionally-oriented approaches”, include the cluster of views generally known as Cognitive Linguistics (e.g. Lakoff 1987; Langacker 1987; Talmy 2000). From a cognitive-linguistic perspective, language is a product of the interplay between domain-general cognitive principles and social interactions, and its main function is to convey meaning. The work developed within the cognitive-linguistic framework in the last few decades resulted in progress toward the understanding of the relationship between language, mind, and society. In particular, Cognitive Linguistics and closely related frameworks (such as the functional-typological approach) vastly contributed to an empirical turn in the field of language studies, which implied a progressive adoption of methods in order to provide plausible descriptions of linguistic phenomena based on the observation of real data, rather than on a priori intuitions of the analyst. The successful application of usage-based approaches to the study of language cast some doubts on the tenability of the notion of Universal Grammar, emphasizing instead the importance of recognizing the structural and functional differences which can be observed in distinct linguistic systems, in order to gain insights into the functioning of language (e.g. Evans and Levinson 2009).

While the importance of Cognitive Linguistics and related functionally-oriented approaches to the study of language can hardly be overvalued, these kind of approaches suffer from some shortcomings directly inherited from Generative Grammar. In particular, these approaches focus on language as a prominently mental phenomenon. Indeed, scholars working in the “functional-cognitive space” (González García 2009; Butler and González García 2014) adopt an empiricist

stance regarding human cognition, thus rejecting the Cartesian *res cogitans vs res extensa* dualism between body and mind, recognizing instead the importance of lived bodily experience; nevertheless, they most often retain an approach which tends to deal with language as a primarily individual affair. Indeed, language is usually investigated first and foremost as a mental/neural phenomenon (e.g. Lakoff 2008), while its social aspects are frequently neglected, despite declarations of principles which often state the opposite (an overview of the shortcomings many cognitive linguists share with generative grammarians can be found in Cowley and Zheng 2011, together with a summary of the shortcomings specific to either paradigm). There is nevertheless a (fast-growing) minority position within the Cognitive Linguistics endeavor which is taking the social aspects of language in greater consideration (see e.g. Sinha 1999, 2004; Verhagen 2005; Croft 2009).

The present study is founded on a series of principles and notions inherited from the cognitive-linguistics tradition, which I employed in my analysis of Italian idioms, adopting a less mentalist and more inclusive perspective. In my study, I addressed language as a manifestation of human action and interaction, which takes place in a specific situated (physical as well as socio-cultural) environment. Along with the less mainstream position within the Cognitive Linguistics enterprise mentioned above, this perspective on language is inspired by Ecological Psychology, which addresses human cognition in terms of perception-action cycles, and considers organism and environment as coupled in a single system (e.g. Reed 1997). Moreover, language is here considered as a primarily social phenomenon, and linguistic events as taking place in a specific community, which imposes its norms of behavior on its members (e.g. Sinha and Rodríguez 2008). On this view, language emerges through intersubjective experience and evolves over time, in an ongoing process of self-organization. Therefore, the nature of language and linguistic phenomena is context-sensitive and extremely complex. As a result, their nature, structure, variation, and change can only be explained if one takes into account the multiplicity of context-bound interactions between intentional agents (to be seen as coupled brains and bodies) and their physical and socio-cultural environment. In short, language is seen as embedded in a larger system, standing in a relationship of mutual influence with

other cognitive functions, as well as its social and ecological niche (see e.g. Sinha 2014; cf. also Steels 2014).

An important step in this direction is represented by Cameron and Deignan's (2006) study (see §3.4), which made use of the basic notions of Dynamic Systems Theory in order to provide an account of the use of metaphors. The authors argued that, since language and thought represent the two interacting components of a single complex system, metaphor emerges from the interplay of language and thinking and is motivated by pragmatic and socio-cultural aspects of metaphor in use. The main contribution supplied by Cameron and Deignan is the notion of “metaphoreme”: a bundle of stable formal, conceptual, affective, and pragmatic constraints which crystallize around a metaphor, and emerge as a result of the dynamics of language use between individuals. A metaphoreme is seen as working as a conventional pairing of form and meaning toward which the actual use of the corresponding metaphor tends. From this perspective, conceptual metaphors are conceived of as emerging in the talking-and-thinking activity of a community, rather than being stable conceptual entities. In other words, metaphors are soft-assembled in the flow of talk<sup>1</sup>: the authors underline that one of the main assets of Dynamic Systems Theory is that it allows the analyst to provide an account of metaphor use at different *levels of granularity* (face-to-face conversation, socio-cultural groups, and the larger speech community) and *time-scales* (from an online speech event to the evolution of the interaction between speakers over time) making use of the same principles and notions.

In chs. 4 and 5 I will show that the adoption of a dynamic-systems approach enables the analyst to conveniently model the tendencies displayed by the data by taking into consideration different time-scales and levels of granularity: the results of the analysis of a set of data at a specific moment can be seen as the result of the integration of all these scales and levels (e.g. Gibbs and Cameron 2008; Rączaszek-Leonardi 2014; cf. Doursat and Petitot 2005 for a different perspective which basically points toward the same direction). Finally, a dynamic-systems approach seems to

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<sup>1</sup> A definition of “soft-assembled” may be: resulting from the online interaction of all the different elements taking part in a process (the opposite of “hard-wired”). On the concept of soft-assembly in cognitive science, see e.g. Clark (2007).

reveal some similarities in the mechanisms which appear to regulate language at different levels of scientific inquiry, suggesting that language may plausibly be conceived as displaying a fractal architecture. This idea, which will be revisited at the end of each empirical chapter of the present study, resonates with the results of several linguistic and cognitive studies.

## **1.2. Idioms as a salient target phenomenon**

Idiomatic constructions represent a particularly fascinating and at the same time problematic topic in linguistic studies. Idioms are ubiquitous in language use, as their presence can be observed in different media and registers, and yet idiomatic constructions tend by their very nature to escape definition and categorization. As underscored by Philip (2007: 266), “even amongst idiom scholars, it is difficult to find consensus about what precisely is, or is not, an idiom, because of the heterogeneity of the class.” Traditional generative theories have usually eschewed the problem, by dismissing idioms as non-decomposable items of non-literal language, peripheral and uninteresting (e.g. Weinreich 1969; Chomsky 1980; Radford 1997), in the last decades a remarkable amount of psycholinguistic and corpus-linguistic evidence has shown that idioms can often undergo structural modification and display different variation patterns, and are much more central than traditionally thought (e.g. Moon 1998; Glucksberg 2001; Naciscione 2010; Wulff 2010). This implies that idioms are to be addressed as an inherently complex phenomenon, subject to change and to environmental influences (e.g. Stathi 2006, Vulchanova et al. 2011). As a consequence, providing a plausible account of their psychological and social status represents a very demanding challenge for language scholars<sup>2</sup>.

Given their rather intricate nature, idiomatic constructions seem to represent a particularly good example of the complexity inherent in language and cognition; therefore, they appear particularly adequate to be addressed from the perspective outlined in the previous section, which takes complexity and variation as the starting

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2 As Johnson-Laird (1993: vii) pointed out, probably “if language had been designed by a logician, idioms would not exist.”



point to address linguistic and cognitive phenomena. As pointed out above, the figurativity of an expression is better seen as a gradient: its literal and figurative meanings do not represent a strict dichotomy; rather, they are better understood as the two poles of a continuum<sup>3</sup>. Therefore, in my study I adopted the definition of *idiom* as “a conventional linguistic construction, usually including at least two words, which displays a standard meaning characterized by a certain degree of figurativity.” The different aspects which are considered to have an influence on the occurrences of a specific construction can be seen as the partly overlapping facets of a flexible space (see §5.1.2). The study of these complex expressions may allow the analyst to observe the interaction between several key cognitive-linguistic notions. A very important step in this direction was taken by Langlotz (2006a), who carried out a detailed, book-length study of idiomatic constructions and their patterns of stability and variation in British English.

Langlotz (2006a) represents the most comprehensive attempt to empirically study idioms, adopting a robust theoretical framework. This approach is firmly rooted in Cognitive Linguistics, but also open to insights from other frameworks. In his study, Langlotz developed a cognitive model of idiomatic creativity based on the notion of idiomatic activation-set, the network of symbolic and conceptual units which can potentially be activated when an idiom is used. The semantic structure of an idiom is analyzed on the basis of its internal structuring, transparency, and conceptual backing. With regard to the first two dimensions, Langlotz organized idioms into different classes on the basis of three parameters: compositionality, analyzability, and motivation. As for conceptual backing, he distinguished four different patterns of semantic extension: metaphor, metonymy, emblems (i.e. cultural stereotypes), and blending.

In Langlotz's model, the variability of idioms depends on their formal and semantic organization and the degree of adaptability of the configuration to the discourse context. Variants can be evaluated on the basis of their degree of conventionality, intentionality, and frequency / institutionalization. This approach allows Langlotz to identify various basic principles and global constraints, whose interaction defines

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3 On this point, the reader is referred to Hanks's (2006) study on metaphors.

classes of idiom variation. Langlotz's study shows that systematic lexicogrammatical alterations are constrained and motivated by idiom transparency; therefore, it supports the view that idiomatic creativity reflects general cognitive principles. Several distinct types of idioms are identified, which differ with regard to two interconnected factors, i.e. their structural properties and variational behavior (see §2.2 below).

The ability of Langlotz's model to account for the typological organization of English idioms may lead to various distinct research paths. In my study, I focused on two different, though interrelated points. First, I wanted to investigate the extent to which the model could be applied to idioms in a different language, and what modifications might be required. More specifically, I investigated how the structural differences between two languages may require that the model be adapted to explain the data under consideration. Another important question I addressed concerns the background of the model itself. Consistent with the majority of mainstream cognitive-linguists, Langlotz's model adopts a mentalist approach, giving prominence to the individual dimension of language and cognition, over the social aspect; conversely, I would consider the phenomenon in its contextual dimension. These two points were dealt with together, by performing an analysis of idiomatic constructions in another language, namely Italian, and by adopting the more encompassing perspective outlined in the previous section.

The fruitful application of dynamic-systems approaches to the analysis of metaphor mentioned in the previous section suggests that a dynamic-systems perspective can be extended to the analysis of other, related kinds of figurative language. Especially interesting for me, dynamic-systems approaches have the potential to account for systematicity and variation in idiomatic expression. Therefore, the principles of Dynamic Systems Theory may be employed to integrate Langlotz's model, giving rise to a more robust theoretical framework. First of all, a DST approach is basically in line with Langlotz's conception of the base-form of an idiom as a statistical co-occurrence pattern, corresponding to a particular form or cluster of forms which are significantly more frequent than others. Nevertheless, since Langlotz's definition seems to be too narrow, focusing on the linguistic aspects of an idiomatic construction only, it seems worth pursuing the direction pointed to by Cameron and Deignan

(2006) when they defined the “metaphoreme”, finding a corresponding notion for idioms. In my study, I will adopt the notion of “idiomatic cluster” as the standard form-meaning pairing which emerges as a result of the constant, non-linear interaction of linguistic, cognitive, affective, and socio-cultural factors in actual language usage events. The idiomatic cluster of an idiomatic construction is made up of two poles: one related to the form of an idiom, and the other related to its meaning. The former, which can be basically equated with the base-form, would include the lexical and grammatical constructions which are most often empirically retrieved in the occurrences of an idiom (see §5.1.2). The latter would include the conventional meaning of the expression, which is motivated by the interaction between the motivation patterns described by Langlotz (metaphor, metonymy, blending, and emblems), together with the category to which the idiom is allocated in Langlotz's typology and the particular semantic, pragmatic, cognitive, affective, and socio-cultural values associated with the expression. The idiomatic cluster may include several possible structures, which may differ in terms of their attractive force.

The choice of Italian as a target language is motivated by various reasons. First, although Italian and English are both Indo-European languages, they belong to different branches; as a result, it is possible to observe several structural differences between them (on language classification, see e.g. Croft 2003). Consequently, the possible discrepancies in the formal and semantic/pragmatic structures used by the speakers of the two languages to convey a certain message may require that the model be adapted to the linguistic system of the language that is the object of the study. Second, although some scholars have dealt with the use of metaphors and idioms in Italian (e.g. Casadei 1996; Vietri 2014), studies on figurative speech in this language are still relatively scarce. Finally, I am a native speaker of the Italian language. This factor should not be undervalued, for it can enable analysts to arrive at a much deeper understanding of the discourse context and the socio-pragmatic variables which influence language use (e.g. Huang 2007).

The adoption of a distributed, ecological approach to the study of language and cognition allowed me to appreciate idiomatic constructions as a particularly challenging kind of linguistic constructions, and to explore the intricacy of both their

nature and their dynamics of use, avoiding a primarily mentalist and representationalist point of view. The nonlinear tendencies displayed by the data were instead interpreted as a result of the complex dynamics which regulate the interaction between the multiple factors which characterize the interplay of intentional social agents at different time-scales and granularity levels. The basic dynamic-systems notions which were then employed in the analysis helped me to make sense of the nature and the structure of idiomatic constructions and to understand their variational behavior, providing a unified description of their ontological and socio-cognitive status. The adoption of this perspective made it possible to evaluate the structure and the behavior of idioms as both an individual and a collective phenomenon, awarding prominence to the latter dimension, given the nature of language as a manifestation of human action and interaction in the physical and socio-cultural environment.

### **1.3. Research questions**

The present study aims to answer four research questions, which have to do with both theoretical and empirical issues. These questions, which will be addressed in the empirical chapters (chs. 4-5) in Part II, are listed below, followed by a brief explanation of the way I am going to address them and why they are relevant to the study of the topic under investigation.

*Research Question 1:*

*To what extent and in what ways can Langlotz's (2006a) model be applied to Italian idioms? What does the categorization process reveal about the nature of this class of linguistic units?*

*Research Question 2:*

*How can the mutual relationship between different idioms, and between idioms and other constructions, be accounted for in terms of a dynamic constructionist approach to grammar?*

*Research Question 3:*

*What is the variational behavior of Italian idioms in actual use? What light does it shed on the nature of idiomatic constructions?*

*Research Question 4:*

*To what extent and how is Dynamic Systems Theory able to provide a coherent way to explore and conveniently model the data? How is it able to provide a unified account for the phenomena observed in both phases of the study?*

I will now take each of the questions in turn and explain in more detail why it was asked and how I answered it. The first question aimed to evaluate how and to what extent Langlotz's (2006a) typology of British English idioms could be applied to categorize the idiomatic constructions of the Italian language, also considering which aspects of this model (if any) needed to be adapted in order to provide a description of the organization of Italian idioms. In his comprehensive study of British English idioms, Langlotz organized idiomatic constructions into categories according to the formal features they display and the conceptual structures they activate. Taking this taxonomy as a starting point for my study, I classified 150 Italian idioms (randomly chosen among those characterized by five different source domains and two target domains, using Sorge's 2010 dictionary as a database) into a structured typology according to their underlying motivation mechanisms, also taking into consideration the cultural background of (most) Italian speakers. The classification process enabled me to observe the (rather complex) status of the idioms in my data set both from a quantitative and a qualitative point of view.

The second question aimed to provide a comprehensive account of the status of idiomatic constructions in the broader grammar of the language. This task was accomplished by adopting a constructionist approach, which conceives the grammar of a language as a network-shape inventory of symbolic units, which cognitive linguists normally refer to as the “constructicon” (e.g. Goldberg 2003). This repository includes units characterized by different levels of abstraction/concreteness. I posited that each idiomatic construction can be seen as possessing its own “idiomatic

network” made up of a set of other idioms it is related to by different kinds of links (which can range from the formal to the conceptual). Moreover, each idiom is also connected to a series of non-idiomatic lexical and grammatical constructions which are part of the inventory of units of the Italian language. While answering both Research Question 1 and Research Question 2, the core notions developed in the cognitive-linguistic tradition were also integrated with the insights offered by a more distributed view of language. As a consequence, the relationship between the literal and the figurative meaning of idioms as well as the emergent structure of idiomatic constructions and construction networks were addressed as self-organizing phenomena, resulting from the daily interaction between intentional agents and the situated environment.

The same approach was adopted to address variational behavior of idioms in instances of actual usage, which represents the object of investigation of the third question. In order to answer the third research question, I selected a subset of 50 idioms (maintaining a proportion across source and target domains) and empirically observed the variational behavior they showed in a number of actual communicative events. These occurrences were drawn from the large web-based corpus of the Italian language *itTenTen*, investigated with the aid of the electronic corpus-query system *Sketch Engine*. Each occurrence was allocated to a specific variation pattern according to Langlotz's model, appropriately modified in order to address some methodological issues (see §5.1.2). Then, a statistical analysis was performed in order to test the correlation between the category an idiom belongs to and the variation classes displayed by its occurrences, with the specific aim to understand if a causal connection can be established between the category an idiom was allocated in the previous stage of the study and the quantity and quality of variation observed in the sample of data.

The two phases of my study are interrelated. As a result, it was necessary to adopt a theoretical perspective able to make this link explicit. On the basis of the results of the application of the notional apparatus of Dynamic Systems Theory in other linguistic studies (e.g. Gibbs 2011), I posited that this framework may be a good candidate. Therefore, the fourth question aimed to evaluate the adequacy of the chosen

framework to provide a unified model for the phenomena observed in both phases of the present study. Dynamic Systems Theory is a branch of mathematics which addresses the study of those systems which evolve over time, and in the last decades it has been spreading fast to the different fields of cognitive science (e.g. Port and Van Gelder 1995), recently also being successfully applied to the study of several linguistic phenomena (e.g. Ellis and Larsen-Freeman 2010). One of the main advantages of Dynamic Systems Theory is to account for both stability and flexibility within a system, which is never taken to be static but always undergoing some processes, often at different levels, taking into consideration as many variables as necessary at distinct time-scales and levels of granularity (e.g. Thelen and Smith 1994).

Broadening the horizon, it was necessary for me to make explicit in what ways the present approach to the study of language differs from other, more widespread, functionally-oriented perspectives. First of all, it was important to provide a more explicit account of the functioning of a dynamic-systems model in order to underline its peculiarities and highlighting the way in which it compares with different accounts in other theoretical frameworks, specifying why the adoption of a dynamic-systems approach could be seen as superior to others. Then, taking into consideration the state of the art of studies on the socio-cognitive dimension of language, it was important to address the nature of the interplay and intersection between individual agents and the intersubjective environment in shaping language at both individual and collective levels. The adoption of a distributed, ecological perspective on the interaction of language, cognition, society, and environment made this task significantly easier.

The discussion of these two important points naturally led to an inquiry into the ontological nature not only of idiomatic expressions, but also of all linguistic symbols. While idiomatic expressions represent complex linguistic constructions, there is no reason to posit that the dynamics which regulate their existence are different from those which govern the other linguistic units present in the construction. More generally, it was possible to draw some conclusions about the possible implications of the present study for the development of a plausible theory of language and to specify the main questions which remain open, as well as some possible directions future

linguistic studies may take.

#### **1.4. Organization and structure of the rest of the study**

On a theoretical level, this thesis is concerned with the delineation of an approach which can be robust and consistent enough to provide a plausible account of how Italian idioms can be classified into categories on the basis of their formal and semantic properties and to describe the extent to (and the way in) which this categorization relates to how speakers use these constructions in the context of actual usage events. From an empirical point of view, I aim to apply this approach to provide a detailed description of the structure of idiomatic constructions in Italian, together with an extensive description of their variational behavior as observed in a sample of real usage events, collected from a large web-based Italian corpus. For this reason, the rest of the present study is divided into two parts, each one dealing with one of the two scopes mentioned above, plus a final chapter, where I will propose the conclusions from the results of the present study.

In part I, I will provide a detailed illustration of the theoretical background which represents the backbone of the present thesis. This part will be divided into two chapters. In ch. 2, I will outline the broader framework on which my study is rooted: first, I will illustrate the key notions inherited from traditional cognitive-linguistic approaches, which I will be using in my study. Then, I will outline Langlotz's (2006a) in-depth investigation of idiom-representation and variation in British English, the starting point for the present work. Last, I will introduce a more distributed, ecological perspective, which aims to replace the cognitive centralism typical of traditional cognitive-linguistic accounts with a more socially- and ecologically-oriented view of language.

In ch. 3, I will introduce the basic principles of Dynamic Systems Theory, an area of mathematics which describes the evolution of a system as the result of the interaction of multiple variables. First of all, I will briefly summarize the nature of the framework and its basic terminology, without delving into its mathematical details. Then, I will illustrate the connection between dynamic-systems approaches and the



Embodied Cognition paradigm, which is gaining popularity in the diverse field of cognitive science as an alternative to the traditional computational paradigm. Next, I will briefly review some studies where the adoption of a dynamic-systems approach has proved useful to explain different kinds of cognitive phenomena. Furthermore, I will outline the results obtained by the application of dynamic-systems approaches in some fields of language studies, also anticipating the direction in which it can be used in the study of idiomatic constructions. Finally, I will introduce the idea that language could be conceived of as displaying a fractal architecture.

In Part II, I will illustrate the empirical analysis of Italian idiomatic constructions. Since the analysis involves two different though interdependent phases, this part will also be divided into two chapters. In ch. 4, I will describe the accomplishment of a rather “top-down” kind of task: the adoption of Langlotz's (2006a) model to categorize the idioms of this language into a structured taxonomy according to their formal features and their underlying motivation mechanisms, being careful to take the cultural background of (most) Italian speakers into account. I will first provide a detailed illustration of the data-selection process and the methodology adopted in the analysis. Then, I will outline my classification of a sample of Italian idioms, providing a few instances of each idiom pattern. Moreover, I will draw some conclusions about the nature and structure of the idioms in the Italian language (on the basis of the theoretical background illustrated in Part I), which mostly resonate with the view of language as a network of units typical of traditional usage-based approaches, but underline the necessity to revisit it through more ecologically-oriented lenses. Finally, I will clarify the connection between the current stage of the study and the one illustrated in the following chapter. On the basis of the observations made in this chapter, I will provide an answer to Research Question 1 and Research Question 2.

In ch. 5, I will describe the accomplishment of a more “bottom-up” sort of task: the analysis of stability and variation in a sample of data drawn from the corpus and the identification of several patterns of occurrence. I will provide an integrated account of the tendencies which can be observed in the data. First of all, I will illustrate the process of data-selection which led to the choice of the sample of occurrences investigated and the methodology used in the analysis. Next, I will show the

variational behavior of idioms which could be observed in my sample of data, illustrating the efficiency of a dynamic-systems approach to enable the analyst to model the tendencies at distinct analytical levels, tying in with the results obtained in the previous chapter. Finally, I will summarize the observations made throughout the chapter and draw some general conclusions about the ontological status of language in the light of the approach adopted in my study. On the basis of the results obtained in this chapter, I will explicitly address Research Question 3 and Research Question 4.

In the last chapter, I am going to conclude the study by addressing a few points which emerged on the basis of the observations made in the previous chapters. Firstly, I will revisit the research questions listed in §1.3 in the light of the adoption of a dynamic-systems model. Second, I will outline the consequences of the results of the application of this approach for the formulation of a plausible theory of language. Third, I will address the problematic and/or controversial aspects of the present study. Finally, I will consider some questions which could not be answered in my piece of work and propose some possible directions for future studies.

Before proceeding with the next chapters, two caveats are necessary. First of all, I want to point the reader's attention to the fact while throughout my thesis, I will often mention the discursive, social, and situational context, I will not - strictly speaking - focus in detail on these aspects, as I will rely on corpus data. The reason for this is that in a corpus-informed study like the present one, especially when dealing with a large amount of occurrences, it is often difficult to have access to much contextual information. Most often corpus data are analyzed on the basis of a rather limited context, but little is known about the identity of the language user and both the immediate and the socio-cultural context where the linguistic event takes place (but see Geeraerts 2005). Nevertheless, making use of corpus data was not inappropriate. On the contrary, a corpus-informed study was the best option because this kind of analysis represents a good compromise between the quantity and quality of information which can be retrieved: the adoption of corpus data as a source of information guarantees the possibility to analyze a substantial number of items of naturally occurring language.

In principle, an option which would allow the analyst to take the context into much higher consideration would be the use of multimodal corpora, but this option is

currently not available. Although an Italian multimodal corpus is currently under construction (see Caschera et al. 2014), no large multimodal corpora are currently available for this language and building a multimodal corpus was not a realistic scenario in the context of this thesis, since it would be enormously difficult and time-consuming, and it is not sure that the result would be worth such an effort; moreover, multimodal corpora are a relatively recent resource and often data are only available with regard to specific communication contexts<sup>4</sup>. Another possible option would be collecting elicited data from informants: this solution may provide some more information about the participants and the context of the interaction; nevertheless it would be less than ideal for at least two reasons. First of all, the collection of a sufficient amount of data would be extremely time-consuming and overly reliant on the informants' availability; second, and more important, the adoption of elicitation tasks would be incompatible with the commitment to the analysis of naturally occurring data only. As a result, although the analysis of corpus data presents the drawbacks mentioned above, it is still superior to the alternatives, if a large amount of information is to be taken into account.

After this clarification, it is still relevant in my opinion to emphasize the importance of the awareness of the mutual influence between linguistic and non-linguistic factors in communicative events (at least) at a (meta)theoretical level. There is arguably no single approach which can enable the analyst to explain everything about a specific phenomenon. Depending on the theoretical perspective, type(s) of data, and methodology adopted, some aspects will always be emphasized while others will be left behind. The awareness that the latter are no less important than the former is all-important, for at least three main reasons. First of all, it urges the analyst to take an open-minded approach to a target phenomenon, making the effort to interpret their data against the bigger picture; second, it prevents them from ruling out alternative explanations a priori; finally, it encourages them to interact with scholars from different backgrounds.

The second caveat concerns the fact that, while the adoption of a dynamic-systems approach relies on the importance of the evolution of the system over time, in the

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<sup>4</sup> For instance, while the Distributed Little Red Hen Lab has a remarkable database of multimodal data, it include television programs only (Steen 2014).

present study I will be analyzing synchronic data only. Here, my aim is to provide a snapshot of the current state of the idioms in a given language, namely Italian. While this scope may intuitively seem at odds with the dynamic-systems emphasis on the role of time, it is not necessarily so. Although synchronic corpus data are static, they reflect the results of the previous history of language use and variation. The balance between rigor and flexibility proper of a dynamic-systems perspective allows the analyst to loosen the *synchrony vs diachrony* dichotomy (as already proposed by several scholars throughout the last decades, e.g. Labov 1963; Ohala 1981, 1993; Croft 2000, 2010), providing instead a more integrated account of the phenomenon under investigation in terms of the underlying non-linear, self-organizing processes. This makes it possible to appreciate the fact that the tendencies observed in the data are the emergent result of the persistent interplay of several factors at different levels of granularity and over distinct spans of time.

Here, no claim will be made about the actual evolution of the form and/or meaning of the specific idiomatic constructions under consideration, but rather on the ability of a dynamic-systems approach to account for the tendencies synchronically observed in the data, which are unavoidably diachronically brought into place as the results of specific processes. By so doing, the present study may represent a coherent theoretical proposal which could lay the foundations for further studies, providing the theoretical instruments to carry out diachronic studies on Italian idioms which, taking into consideration the results of the data analysis at different moments, may describe the evolution of specific constructions in a determined span of time.

## Part I

Theoretical background:  
language, cognition, and dynamic systems

## 2. From Cognitive Linguistics to a more distributed perspective

As outlined in ch. 1, in the present work language is conceived of as an extremely complex system, which emerges through everyday experience in the world and evolves over time, showing a high degree of flexibility and adaptivity. The present chapter will be divided into four sections. In §2.1, I will introduce the principles of Cognitive Linguistics (and the dominant views against which this paradigm arose), and its aspects which are particularly relevant to my study: *metaphor*, *metonymy*, *blending*, and *cognitive approaches to grammar*. In §2.2, I will then focus on Langlotz's (2006a) in-depth exploration of idiomatic constructions, which represents the main reference point for my study, giving prominence to the aspects of his work which are particularly relevant to the present study. Next, in §2.3, I will briefly introduce a more distributed, ecological approach to the study of language. Finally, in §2.4 I will provide some concluding remarks. In particular, in this chapter I will aim to draw a trajectory which illustrates the progressive shift from a (roughly) traditional cognitive-linguistic point of view to a more encompassing, socially- and ecologically-oriented perspective. Such a view goes beyond the boundaries of individual minds, emphasizing that language serves a primarily collective function, affording intersubjective coordination (cf. Cowley and Zheng 2011; Fusaroli and Tylén 2012).

### 2.1. The cognitive-linguistic background

Cognitive Linguistics is a theoretical paradigm which subsumes a cluster of different, but related approaches to the scientific study of language. It originated in the late 70s and early 80s, stemming from the work of three pioneers, namely George Lakoff, Ronald W. Langacker, and Leonard Talmy. Scholars working within the Cognitive Linguistics framework hold the view that language is an instrument for organizing, processing, and conveying information. As a consequence, formal structures of language are seen as reflections of general conceptual organization, categorization

principles, processing mechanisms, and experiential and environmental influences.

Many detailed introductions to Cognitive Linguistics already exist, including several introductory books (e.g. Croft and Cruse 2004; Dirven and Verspoor 2004; Evans and Green 2006; Ungerer and Schmid 2006; Ibarretxe-Antuñano and Valenzuela 2012), a few position papers (e.g. Mazzone 2004; Janda 2006; Geeraerts and Cuyckens 2007b), a glossary (Evans 2007), a comprehensive handbook (Geeraerts and Cuyckens 2007a), a reader (Evans et al. 2007), along with many other resources (journals, websites, etc.). The scope of the present section will thus be limited to two narrow purposes: providing a summary of the origin and basic principles of Cognitive Linguistics, and introducing the semantic and grammatical notions which constitute the backbone of Langlotz's model outlined in §2.2 below.

### 2.1.1. *Origins and principles of Cognitive Linguistics*

In order to make sense of the rise of Cognitive Linguistics, it is necessary to briefly summarize the background against which it emerged. At the end of the 1950s, the American linguist Noam Chomsky started to develop Generative Grammar (e.g. Chomsky 1957, 1965), a formal model of language which shares the basic assumptions of the dominant paradigm in cognitive science, according to which the mind is a computational system independent of the body and complex cognitive processes result from the manipulation of abstract symbols. In addition, several proponents of these generative frameworks assert that the mind comprises separate, independent modules each developed for a different functional purpose (see §3.2 below). Chomsky focused on the fact that native speakers of a language can understand and produce a vast amount of sentences they have never heard before and can also distinguish acceptable from unacceptable expressions in their language without being exposed to negative evidence. On the basis of this observation, he formulated the “poverty of the stimulus” argument, according to which natural language grammar is unlearnable given the relatively limited data available to children learning a language; therefore, it must be innate.

Thus far, we have the following picture: the mind is independent of the body, and

language is an autonomous module in the mind. Since the mind can be studied independently of the body, then the properties of the human body and experience are irrelevant to cognition and language. Language can therefore be simply studied as a computational system. Consequently, social aspects of language and cognition are uninteresting and can be conveniently ignored. As Geeraerts and Cuyckens point out, if the source of language is not social, it can only be an innate and universal genetic endowment. Because semantics and the lexicon “constitute the variable, contextual, cultural aspects of language par excellence” (Geeraerts and Cuyckens 2007b: 12), and social interaction is mediated through the meaning of linguistic expressions, it is implausible that the universal aspects of language can be found in meaning; consequently, semantics and the lexicon are peripheral. As a result, the core of language must be composed of a syntactic, formal rule system.

This distinction between core and periphery suggests that the language module mentioned above comprises separated submodules, with the syntactic submodule being the one linguists should be concerned with. A logical conclusion from these premises is that actual usage of language is uninteresting, since it just consists of the application of the rule system, leading to the distinction between “competence” (the internal grammar of the language user), which is the object of the studies carried out by generative grammarians, and “performance” (the individual activity of combining the elements that are present in the language), seen as a mere epiphenomenon. Generative Grammar quickly became the dominant paradigm in linguistic theory and psychology of language and it evolved in several different forms in the last decades (e.g. Haegeman 1991; Radford 1997).

Cognitive Linguistics arose as a reaction against Generative Grammar, and can be seen as related to an alternative paradigm in cognitive science, labeled Embodied Cognition (see also §3.2 below). In this framework, the mind does not have to be composed of a series of encapsulated, domain-specific modules. On the contrary, a more “embedded” conception of cognition - which does not confine the mind to the computational activity of some neural circuitries, but claims for the involvement of the organism as a whole and its experiences in the external world - makes the case for the supposition of domain-general cognitive principles, rejecting the theory of the



modularity of mind. From this perspective, any claim for distinct “submodules” for the various “areas” of language makes little sense, since no such clear-cut distinction between phonology, morphology, syntax, semantics, etc. is supposed to exist (cf. Lakoff’s 1990 *generalization commitment* and *cognitive commitment*)<sup>1</sup>.

The interaction of organism and environment in shaping cognition highlights the fact that everyday experience in the world is basic: there is simply no cognitive activity without the interplay of a human body with a working brain and the environment. From this point of view, social interaction is dramatically important, since most human experiences involve, to great extent, our being embedded in a definite socio-cultural context. It follows that social aspects are of paramount importance for language, since a certain language represents a common communicative system shared by a community. As a consequence, meaning plays a crucial role in language: as Geeraerts and Cuyckens (2007b: 12) assert, “... social interaction, the exchange of ideas, and changing conceptions of the world are primarily mediated through the meaning of linguistic expressions...”. Equally, actual usage of language is all-important in Cognitive Linguistics, since language units are supposed to arise from language use in a bottom-up manner, rather than being created in a top-down fashion by means of the application of a series of formal rules. It follows that there is no principled distinction between “competence” and “performance” in Cognitive Linguistics: as Evans (2007: 217) points out, “knowledge of language *is* knowledge of how language is used” (*italics original*). Furthermore, cognitive linguists do not distinguish a “core” of language from a “periphery”: all linguistic expressions are “symbolic units” which deserve to be taken into consideration and need to be accounted for (see e.g. Lakoff 1987; Goldberg 1995). Accordingly, while generative linguists argue for the “autonomy of syntax”, cognitive linguists do not draw any sharp boundary between syntax and the lexicon, which are seen as the two poles of a continuum: lexical and syntactic units are both part of the “constructicon”, a unified repository of form-meaning pairs. Since grammatical units, as much as lexical units, are form-meaning mappings, it also follows that grammar is inherently meaningful rather than purely formal.

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1 For empirical evidence against a modular view of language, see e.g. Hilpert (2008).

On the basis of the observations summarized in the few lines above, cognitive linguists often counter Chomsky's "poverty of the stimulus" argument with the so-called "opulence of the substrate" argument, which undermines the Chomskyan claim for linguistic nativism. As Jerome A. Feldman points out:

The child comes to language learning with a rich base of conceptual and embodied experience as well as a supportive social environment. Words and rules that describe this experience can be learned without formal training, although not without years of focused effort on the child's part. As the child expands his or her scope and deals with abstract concepts and others that are not directly experienced, language coevolves, always maintaining the grounding in direct experience.

(Feldman 2008: 318)

In summary, though both approaches look at language as a prominently mental phenomenon, Generative Grammar and Cognitive Linguistics are two very different frameworks, whose theoretical origins and historical developments are interwoven with those of two competing theoretical paradigms in cognitive science. As Evans and Green point out:

While the formal model views language as an innate, encapsulated, and computational system, the cognitive model views language as an emergent system, inextricably linked with general processes of communication and conceptualisation, with meaning at its core.

(Evans and Green 2006: 752)

Geeraerts and Cuyckens (2007b) also highlight the fact that these two paradigms hold different views of the epistemological role of natural language in the relationship between subject and object: while cognitive linguists see language as the intermediate link between subject and object, generative linguists take language as the object itself of the relationship. These different beliefs have important consequences on the interests of the scholars working within the two paradigms: cognitive linguists focus on our knowledge of the world and how language contributes to it (and viceversa), whereas generative linguists are concerned with our knowledge of a language and attempt to explain how it can be acquired given a cognitive theory of learning.

2.1.2. *Metaphor, blending, metonymy, and grammar*

As specified in the incipit of the present section, here I will just focus on the aspects of the Cognitive Linguistics enterprise which are directly relevant for the present study: the cognitive-semantic notions of *conceptual metaphor*, *conceptual blending*, *conceptual metonymy* on the one hand, and the cluster of perspectives often collectively referred to as *cognitive approaches to grammar* on the other hand. Below, I will address these notions exactly in this order.

*Conceptual metaphor*

While traditionally considered a linguistic artifact (see Burke 2014 for an overview), the idea that metaphor could be a central element of human language and thought had already been put forward (e.g. Richards 1936; Wheelwright 1962), but it was after the release of *Metaphors We Live By* (Lakoff and Johnson 1980), that the notion of “conceptual metaphor” became widely and systematically employed in linguistic studies. Also, it has often been at the center of a heated debate among linguists, philosophers, and psychologists (see Gibbs 2013 for a brief, up-to-date summary).

The idea which underlies the concept of conceptual metaphor is that human beings tend to conceive of objects and situations as related to a specific conceptual domain in terms of objects and situations related to another conceptual domain: the former is usually labeled “target domain” and refers to relatively abstract conceptualizations, whereas the latter is called “source domain” and denotes more concrete areas of experience. A conceptual metaphor underlies several related linguistic metaphors. A classic example is the conceptual metaphor THE DEVELOPMENT OF A LOVE RELATIONSHIP IS A JOURNEY<sup>2</sup>, which can be found at the root of expressions like those listed below (from Lakoff 1993: 206):

- (1)     a.     Look *how far we've come*.  
           b.     We're *at a crossroads*.  
           c.     We may have to *go our separate ways*.

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2 As pointed out by Langlotz (2006a: endnote 16), while Lakoff (1993) labels this conceptual metaphor LOVE IS A JOURNEY, this definition seems imprecise: here the metaphor maps aspects of the development of a relationship between a couple of lovers, rather than the emotion of love itself.

- d. The relationship isn't *going anywhere*.
- e. We're *spinning our wheels*.

All the examples given above (and many more) involve the mapping of aspects from the concrete experiential domain of travel into aspects of the abstract (and, possibly, more subjective) experiential domain of a love relationship. Following Lakoff (1993: 206-208) it is possible to observe that lovers are conceived of as travelers, the beginning of a relationship as the starting point of a journey, the evolution of the relationship as a route, the purpose (which in this case is, presumably, reaching happiness together) as a destination, and the relationship itself as a vehicle. The temporal development of the relationship is also conceptualized in spatial terms.

As underlined by Langlotz (2006a: 67), the systematic correspondences between the two domains allow the speaker to manipulate the source domain to draw metaphorical inferences about the target domain. For instance, consider the example quoted in (1e) above: when a car is spinning its wheels, it cannot move forward. This situation requires an action to be taken: either the travelers push the car out of the mud or it is rescued by some recovery vehicle. The metaphorical correspondences allow these entailments to be transferred to the target domain to establish analogical inferences. Thinking about car-journeys allows the cognitive agent to draw conclusions about love relationships: the love relationship can only be saved by some significant effort or by external help (Lakoff 1993: 207). Therefore, the conceptual metaphor fulfils the function of simplifying cognitive access to a more abstract target domain. Rather than engaging in a manipulation of the more abstract domain, the conceptualizer can draw inferences about it by referring to the more concrete, structured, and directly understandable source domain. The view of metaphor as the process of mapping the information structure of a concrete conceptual source domain onto a more abstract target domain is now widely accepted and used within the cognitive-linguistic community.

### Conceptual blending

Another notion often employed in Cognitive Linguistics to describe complex

processes of meaning construction is “conceptual blending”. This notion, developed by Gilles Fauconnier and Mark Turner, is used to describe processes of meaning construction which involve the integration of different scenarios and result in the emergence of a structure which cannot be reduced to the sum of its parts (Fauconnier and Turner 2002). The two scenarios are conceived of as two *mental spaces* (e.g. Fauconnier 1994), each of which contributes some elements to the construction of a blend. The blend feeds on the cognitive content of the two spaces and is created by the partial mapping and integration of conceptual elements from both of these spaces. Both spaces thus work as *input spaces* for the hybrid conceptualisation in the blend<sup>3</sup>. Consider the classic example below (from Taylor 2002: 530):

(2) In France, Bill Clinton wouldn't have been harmed by his relationship with Monica Lewinsky.

The sentence above prompts us to set up a mental space for reality, in which Clinton is the U.S. President, Lewinsky is his intern, they have an affair, and are found out, causing a scandal to break. Then, we have to set up a second space for another aspect of reality, containing the President of France and our knowledge that French culture is less rigid on this topic than American culture. Then, we have to blend the two spaces into a third “blended” space, where Clinton is the French President, Lewinsky is his intern, they have an affair and are found out, but no scandal stirs up. Because of the conceptual mapping relating the first and the second spaces to the third space, we get something more than the original input spaces, learning that cultural and moral sensitivities toward extramarital affairs between politicians and members of their staff are different in the United States and France. This meaning is constructed on the basis of complex mapping operations between different reality-based scenarios, which combine to give rise to a new counterfactual scenario<sup>4</sup>. The blended space gives rise to a new meaning (cf. Omazić 2005).

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3 The notion of *conceptual blending* is also often employed in the study of metaphors (see e.g. Grady et al. 2007).

4 On the role of counterfactuals in the conceptualization of the world, cf. Fauconnier (1996); Lakoff (1996).

Conceptual metonymy

Along with conceptual metaphor and conceptual blending, “conceptual metonymy” also plays a fundamental cognitive role for the construction of elaborate conceptual structures. While conceptual metaphor projects a conceptual domain onto another, conceptual metonymy “names one aspect or element in a conceptual domain while referring to some other element which is in a contiguity relation with it.” (Dirven and Verspoor 2004: 40). For instance, when saying *I was listening to Iron Maiden*, the conceptual connection AUTHOR FOR MUSIC is established; or in *You drank a whole bottle*, the mapping CONTAINER FOR CONTENT is evoked. Cognitive-linguistic analyses describe metonymy as a mapping procedure that establishes a coordinated link between contiguous conceptual substructures (for an overview, the reader is referred to Barcelona 2000). For instance, the container-concept BOTTLE is a salient substructure in the cognitive-model DRINK. The contiguous conceptual association between bottle and liquid in the bottle underlies the metonymic expression *You drank a whole bottle*. The *metonymic source* BOTTLE thus works as a conceptual “reference point” to provide easier mental access to the associated, but less salient conceptual substructure CONTENT – the *metonymic target* (Langacker 1993: 5, quoted in Langlotz 2006a: 72). Metonymy thus differs from metaphor because it does not establish a mapping relation between two distinct conceptual domains; rather, it involves semantic extension within the same experiential domain (cf. Barcelona 2000: 4). Moreover, metonymy is not based on *similarity* but on *conceptual contiguity* (see Lakoff and Johnson 1980; Barcelona 2000; Taylor 2003). In short, metonymy guarantees the access to a target via a conceptually contiguous, more salient concept.

At this point, a caveat is necessary: as underlined by several scholars over the last decades, the distinction between metaphor and metonymy is better conceived as scalar, rather than clear-cut (e.g. Goossens 1990; Geeraerts 2002; Barnden 2010). First of all, it is often possible to observe that metaphors are rooted on metonymic associations. For instance, consider the idiom *grit one's teeth*. As pointed out by Langlotz (2006a: 73-74), “people literally grit their teeth when try to suppress a physical pain.” Thus, we can observe a metonymic association between a physical symptom for the underlying feeling. Once the expression is used to refer to the action

of suppressing emotions and feelings without a person actually gritting their teeth, the expression becomes metaphorical. Consequently, we can speak of a metonymically motivated metaphor. Furthermore, there is another point which seems relevant to underline: given that, from a cognitive-linguistic perspective, domains are organized in conceptual networks, and such networks are never perfectly overlapping from person to person, domains do not have clear-cut boundaries. The fuzziness of the boundaries between distinct domains speaks in favor of a loose distinction between metaphor and metonymy, rather than a strict one (see Langlotz 2006a: endnote 21). Finally, the fact that the meaning of a figurative expression is underpinned by the interaction between metaphor and metonymy is corroborated by a body of empirical (both experimental and corpus-based) studies, including studies focusing on a single language as well as comparative analyses of tropes in different languages (see e.g. Deignan and Potter 2004; Deignan 2005; Leung 2008).

### Cognitive approaches to grammar

The label “cognitive approaches to grammar” serves as an “umbrella” that covers a number of approaches to the study of language which share some basic tenets (e.g. Langacker 1987; Goldberg 1995, 2006; Croft 2001; Bergen and Chang 2005; see also Barlow and Kemmer 2000). Here, I am going to briefly address some of the main differences in the theoretical assumptions and working mechanisms between generative and cognitive approaches, some of which were briefly addressed in §2.1.1 above<sup>5</sup>.

First of all, an important point of divergence between these two traditions regards the fact that while generative linguists posit the existence of an innate computational system that derives a well-formed grammatical structure without recourse to meaning, cognitive linguists posit an inventory of symbolic units containing schematic templates, which emerge as a result of regular use. A speaker interpreting new

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5 It may be relevant to emphasize the fact that several different approaches to grammar exist in the generative enterprise. Here, I shall just make reference to the transformational model for two main reasons: first, as underlined by Evans and Green (2006: 747), it is the most prominent generative model; second, it is the model against which cognitive approaches to grammar defined themselves in the early stages of their development.

structures will compare the new structure with the existing templates, taking into account the communicative goals, the context, etc. While Generative Grammar captures generalization and defines well-formedness as the output of the application of rules, Cognitive Linguistics captures generalizations and defines well-formedness as the results of a categorization process.

Then, generative linguists make use of derivational rules which precede and thus determine the specific expressions that instantiate them. Within the generative framework, lexical items are stored in the lexicon together with information about their phonology, semantic, and core syntactic properties (e.g. word class). As a result of its interaction with generalized syntactic principles, this information gives rise to deep structures: syntactic structures in which the core requirements of the lexical items are satisfied in accordance with the syntactic principles. Deep structures typically correspond to unmarked active declarative sentences, which are often viewed as the basic syntactic structures within a given language. Less basic clause types, such as interrogatives, are then derived from deep structures by means of syntactic transformation, giving rise to surface structures. Consider the following simple examples of an interrogative and a declarative transitive sentences, respectively (from Torre 2011, 2012):

- (3) (a) Is Penny dating someone?  
(b) Penny is dating someone.

Generative linguists consider the structure in (3a) as a surface structure derived from the deep structure in (3b) by means of the application of a rule which raises the auxiliary verb to a position in front of the subject (see e.g. Haegeman 1991; Graffi 1994), which might be formulated in (4a) below, given the deep structure in (4b):

- (4) (a) Derive interrogative from declarative: Move AUX in front of SUBJ  
(b) SUBJ AUX V-ING OBJ

On the other hand, cognitive linguists conceive of language as a structured (i.e. not random) inventory of conventional pairs of form and meaning (or form and function),



called “constructions”. These symbolic units are monostratal (i.e., they do not imply the existence of a deep structure opposed to a surface structure) and they include information regarding all aspects of language (from phonology to pragmatics). Constructions are not obtained via syntactic derivation, but are “stored whole” by the learner. Indeed, virtually all cognitive and constructionist approaches to grammar subscribe to the usage-based thesis (e.g. Bybee 1985; Langacker 1987), that is, they claim that language is learned by the abstraction of constructions from real instances of language. As a consequence, in a cognitive perspective, the two sentences in (3) above are seen as instantiating two different schematic patterns previously stored whole as an effect of repeated use, each of which is associated with different semantic and pragmatic functions. These emergent patterns are illustrated in (5) below:

- (5) (a) Interrogative pattern: AUX SUBJ V-ING OBJ  
 (b) Declarative pattern: SUBJ AUX V-ING OBJ

Another important aspect in which generative and cognitive linguists hold diverging views regards their different views of redundancy, which is stigmatized in the Chomskyan tradition, while it is taken to be an essential feature of language in Cognitive Linguistics<sup>6</sup>. Indeed, scholars working within a generative framework distinguish between “regular” forms, which can be derived from the application of a generalized rule, and irregular forms, which need to be explicitly listed in the grammar: this distinction follows from their commitment to the idea that language must be a maximally economic system, in order to be acquired and manipulated rapidly. Cognitive linguists, on the contrary, avoid the notion of rule, preferring to refer to schemas that follow from instances: schemas represent patterns that have emerged from entrenched units as a consequence of usage. Consequently, generalizations are the outcome of recurring patterns of usage that allow the speaker to infer a higher-order schema. As a consequence, both the schema and instances of that schema are listed in the grammar, and the schema represents an expression of the generalization which emerges from patterns of usage.

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6 “Redundancy is not to be disparaged, for in one way or another every language makes extensive use of it.” (Langacker 2008: 188).

Thus, with regard to the example sentences seen above, it can be said that generative linguists will consider the deep structure in (3b) as stored in the grammar, while the surface structure in (3a) will not be listed in the grammar, since it can be derived by the application of the rule in (4a). On the other hand, cognitive linguists will argue that the constructions instantiated in (3) will be stored in the grammar (and in theory possibly even the sentences themselves, if they are frequent enough).

A further difference which is related to the one I have just sketched, regards the fact that generative linguists focus on the statement of general rules that account for well-formedness in language. As a consequence, generative grammarians are usually not concerned with conventional expressions such as *by and large*, *all of a sudden*, etc. since they often fail to conform to general patterns of syntactic structures. As Evans and Green (2006: 755) highlight, “These structures are considered peripheral and uninteresting because they do not reveal general and productive patterns. Instead, the formal model focuses upon ‘core’ phenomena.” On the contrary, cognitive linguists consider conventional expressions as a central part of language knowledge and use: all “regular” and “irregular” constructions are part of the speaker's inventory of symbolic units and so deserve to be accounted for. The difference between the two kinds of units stands on the fact that while “regular” expressions like those in (3) above show a high type-frequency, and thus their entrenchment is followed by the rise of a higher, more schematic pattern which will be productively used to create novel expressions, irregular expressions are stored but they show a high token-frequency only; if several of them are similar enough that they do give rise to a schema, this will tend to have only a limited level of productivity (see Bybee's 1985 point on verbs).

Finally, I will mention the fact that generative linguists view linguistic elements as having a componential structure: elements are seen as having a complex internal structure and being built from scratch. On the contrary, cognitive linguists hold that entrenched instances give rise to schemas. However, this does not mean that they reject the view that speakers recognize complex structures as having compositional structure. Simply, Langacker proposes that component structures are immanent in the complex grammatical construction, regardless of whether the compositionality is recognized by the speaker. According to Langacker, entrenchment decreases the

salience of compositionality. The compositional structure of a grammatical construction may be essential to the initial creation or construction of that expression, but once the construction is entrenched and gains the status of a unit, this compositional scaffolding is no longer required. Despite this, the compositional structure remains immanent: speakers may still recognize the compositionality of well-entrenched units, but it does not follow that people build them from scratch each time they use them.

Constructions form a structured inventory of a speaker's knowledge of their language sometimes referred to as the “constructicon” and usually represented as a taxonomic network, including very specific constructions as well as more general schemas abstracting over their commonalities. Each construction constitutes a node in such a network, and specific constructions may have multiple parents. Below, I will provide an example of the network-like structure of language<sup>7</sup>, slightly simplified for the sake of exposition. An example of an abstract schema related to a lexical construction is illustrated in (6), while some of its concrete instantiations are listed in (7):

(6) adjectives derived from verbs: V + ABLE

- (7)
- a. drink-able
  - b. ador-able
  - c. solv-able
  - d. understand-able
  - e. bear-able

Both the schema and its many instantiations represent nodes in the constructicon, in a network-like fashion: the examples in (7) above can be seen as linked with each other horizontally, by relations of similarity, and with the abstract schema in (6) vertically by a “schema-instance” relation (Langacker 1987). In turn, the schema in (6) will be horizontally related to other cases of derivations from verbs, and will be vertically linked to a node denoting the relevant verb (e.g. “drink”) and a more abstract “adjective” node. The latter will be vertically linked with a node including all words.

A similar observation can be made with regard to grammatical constructions.

<sup>7</sup> It is relevant to underline that alternative compatible interpretations are also possible.

Consider for instance the abstract schema illustrated in (8) below and some of its concrete instantiations listed in (9):

(8) NP<sub>Sbj</sub> V NP<sub>Obj</sub>

- (9) a. Mary ate an apple.  
b. Julian drank two pints.  
c. God created everything.  
d. The carpenter hammered the nail.  
e. The lady wrapped my gift.

All the examples in (9) above are instantiations of the monotransitive construction schematically illustrated in (8). In turn the monotransitive construction will be linked horizontally with other transitive patterns (ditransitive, complex transitive, etc.) and with the intransitive construction and the copular construction, and vertically linked with a more abstract declarative pattern. In turn, the declarative construction will be horizontally linked with the interrogative, the imperative, and the exclamative patterns, and vertically with a more encompassing schema including all clauses. The latter will be linked horizontally with other nodes denoting lexical units, and vertically with a more general schema denoting all linguistic constructions.

While this can just represent a concise (and by no means complete) list of the main properties shared by the members of the family of cognitive approaches to grammar, in my opinion the brief characterization just provided above, together with the information supplied in §2.1.1, should be sufficient to provide the reader with an idea of the common assumptions which underlie the approaches developed within the Cognitive Linguistics framework and distinguish them from mainstream generative models. Likewise, it should be useful to understand why the study of idioms is so important given this theoretical orientation. I mentioned above that cognitive linguists consider conventional expressions as a central part of language knowledge and use: all regular and irregular expressions are part of the constructicon and so deserve to be accounted for (and of course expressions can emerge in speaking that are not stored). The difference between the two kinds of units is supposed to rest on the fact that while the entrenchment of regular expressions is followed by the rise of a higher, more

schematic pattern which will be productively used to create novel expressions, irregular expressions give rise to schemas which are characterized by very limited productivity.

Nevertheless, studies on the nature of idioms (e.g. Moon 1998; Glucksberg 2001; Langlotz 2006a) seriously call into question this supposed "low productivity" of speech formulae (see e.g. Gibbs 2007 for an overview), suggesting that the scenario is drastically more complicated. There are several aspects of idiomatic language which show a certain degree of lexicogrammatical and semantic adaptability. These different levels of flexibility are considered the results of the level of analyzability or decomposability of the specific idiomatic expression (e.g. Cacciari and Tabossi 1988; Gibbs 1994; Moon 1998; Titone and Connine 1999; Glucksberg 2001; Langlotz 2006a). The degree of analyzability of an idiomatic construction corresponds to the extent to which its parts have a meaning that independently contributes to the idiom's figurative reading. For instance, compare the examples in (10) and (11) below:

(10) Fall off the wagon.

(11) Pop the question.

Gibbs (2007: 706) reports that many English speakers consider the former as less analyzable than the latter because the meaning that the verb *fall* contributes to the expression is less salient than the meaning that the verb *pop* contributes to *pop the question*. In addition, experimental studies have shown that semantically decomposable idioms are usually considered more syntactically productive and lexically versatile (Gibbs and Nayak 1989; Gibbs et al. 1989; Moon 1998; Glucksberg 2001). Consequently, it is possible to propose that the label "idiomatic construction" subsumes a variety of constructions which differ in terms of their level of their formal and semantic flexibility; in addition, there seems to be a connection between the degree of versatility in form and meaning.

From a cognitive-linguistic perspective, many aspects of idiomatic language may be characterized in terms of broader linguistic or conceptual patterns. It follows that different forms of an expression should be seen as variants of the same idiom rather

than distinct idioms which share the same meaning and some lexis. Consider the examples below (from Gibbs 2007: 714):

- (12)
- a. Shake in one's shoes.
  - b. Quake in one's shoes.
  - c. Shake in one's boot.
  - d. Quake in one's boot.
  - e. Quiver in one's boots.
  - f. Quake in one's Doc Martens.

The main verb in each expressions means “shake”, and it is associated with nouns related to “footwear” to connote apprehension. Any verbs and nouns that convey similar meanings will result in equally adequate expressions. Moon (1998: 163) suggests that these expressions are subsumed under a single “idiom schema”, which “represent[s] concepts embedded in the culture and associated with particular lexicalizations.” In Gibbs's (2007: 715) words, these idiom schemas “have some reference, a metaphor (or metonymy) or cognate words, in common, but without (necessarily) any fixed structure or specific words.” Therefore, idiomatic constructions have more in common with more “regular” aspects of language than traditionally thought. The relationship between idiomatic and non-idiomatic constructions can be accounted for within a constructionist framework.

As will be discussed in the remainder of the present study, the empirical observation of idioms in use suggests that it is possible to propose the existence of flexible interconnected “idiomatic networks”: each idiom is connected to several other idioms via several different kinds of links (see §2.3 below). These connections can vary significantly in terms of strength and properties, and can change over time. Each idiomatic construction will also be connected with non-idiomatic constructions. The construction can thus be seen as a huge, soft-assembling network of interactive constructions which display different levels of abstraction and complexity. Each of these interconnected constructions stands in a relationship of mutual influence with each other. I will return to the nature of the construction several times through the present study. In the following section, I will introduce Langlotz's (2006a) in-depth investigation of British English idioms, which represents a major contribution to the

field and the main reference point for my thesis.

## 2.2. Langlotz's (2006a) study of idioms

At present, Langlotz (2006a) represents one of the most detailed investigations of idiomatic constructions. Since doing justice to his book-length contribution to the field in the section of a chapter would be impossible, here I will only focus on those aspects which are directly relevant to my interests in the present study. It is in order to clarify that Langlotz's perspective does not necessarily mirror my own in all its respects. This section will be split into three subsections: in §2.2.1, I will outline two influential studies in the field of idiomaticity, specifying how Langlotz represents a further step in the exploration of idioms as central units in the grammar of a language. Then, in §2.2.2, I will provide a summary of Langlotz's exploration of English idiomatic constructions, briefly outlining Langlotz's aims and results, giving prominence to the notions which I am going to adopt in the following chapters. Finally, in §2.2.3, I will provide a critical assessment of those issues which, in my view, represent the main strengths and weaknesses of Langlotz' study.

### 2.2.1. *Background: two ground-breaking studies on idiomaticity*

As mentioned in the previous chapter, in the past decades, a number of studies have proposed arguments against the traditional view of idiomatic constructions as “long words”. An influential study which underlines the shortcomings of this conception of idioms, providing an alternative perspective, is represented by Fillmore et al. (1988). In their paper, Fillmore et al. (1988) explore the view that the realm of idiomatic constructions includes productive, structured linguistic units, which deserve to be investigated and accounted for.

From Fillmore et al.'s perspective, an expression is idiomatic if it is conventionally assigned an interpretation by a speech community but somebody who just knows the grammar and the lexicon of the language could not, relying on that knowledge only,

know how to say it, what it means, or whether or not it is a conventional thing to say: “Put differently, an idiomatic expression or construction is something a language user could fail to know while knowing everything else in the language” (Fillmore et al. 1988: 504). The authors identify four dimensions of idiomaticity:

- *encoding and decoding*: a decoding idiom is an expression which language users could not interpretate if they had not learned it separately (e.g. *kick the bucket, pull a fast one*), whereas an encoding idiom is an expression which language users might or might not understand without prior experience, but they would not know it is a conventional way of conveying what it says (e.g. *answer the door, wide awake*);
- *grammaticality*: grammatical idioms have words filling proper, familiar grammatical structures, i.e. they respect the canonical word order of the language (e.g. *kick the bucket; spill the beans*), whereas extragrammatical idioms display structures which are not made intelligible by knowledge of the familiar rules of the grammar and their application (e.g. *all of a sudden, by and large*);
- *substance and formality*: substantive idioms have a fully specified lexical make-up (e.g. *kick the bucket*), whereas formal idioms are syntactic patterns dedicated to semantic and pragmatic purposes (e.g. *the X-er; the Y-er*).
- *pragmatics*: some idioms are associated to special pragmatic purposes (e.g. *once upon a time, how do you do?*), while others are more contextually neutral (e.g. *all of a sudden, by and large*).

On the basis of the intersections of the parameters relative to the four dimensions mentioned above, Fillmore et al. classify idiomatic constructions into three broad categories, according to the familiarity of lexical items and syntactic patterns which idioms display:

- unfamiliar pieces unfamiliarly arranged: the unfamiliar pieces are words which appear only in the idiom in question (e.g. *kith and kin*);
- familiar pieces unfamiliarly arranged: idioms made up of familiar pieces unfamiliarly combined (*in point of fact, all of a sudden*);



- familiar pieces familiarly arranged: familiar words combined according to familiar combinatorial principles, but to which idiomatic interpretations are assigned (e.g. *pull someone's leg*; *tickle the ivories*).

While Fillmore et al.'s (1988) attempt at a classification of idiomatic constructions is not very detailed, this paper represents a seminal piece of work, which paved the way to many other studies on the nature of idiomaticity, including the proposal of more elaborated taxonomies of idioms. Among these, it is particularly relevant to mention Nunberg et al. (1994), whose study had a strong influence on Langlotz's work. The authors identify the following semantic properties of idioms:

- *(relative) conventionality*: the discrepancy between the idiomatic phrasal meaning and the meaning we would predict for the collocation if we were to consult only the meanings of the constituents in isolation, and the relevant operations of semantic compositionality;
- *opacity / transparency*: the ease with which the motivation for the use (or some plausible motivation – it does not need to be etymologically correct) can be recovered;
- *compositionality*: the degree to which phrasal meaning can be analyzed in terms of the contributions of the idiom parts.

On the basis of these properties, the authors claim that it is possible to divide idiomatic constructions into two categories:

- idiomatic phrases: idiomatic constructions whose meaning is not distributed to their components (e.g. *kick the bucket*, *saw logs*)
- idiomatically combining expressions: constructions whose meaning, while conventional, is distributed among their parts (e.g. *take advantage*, *pull strings*).

According to Nunberg et al., idiomatic meanings are generally derived from literal meanings in conventionalized, but not entirely arbitrary ways. Therefore, claiming that an idiom is an “idiomatically combining expression” means that “the conventional mapping from literal to idiomatic interpretation is homomorphic with respect to certain properties of the interpretation of the idiom's components” (Nunberg et al. 1994: 504). The authors propose that assigning interpretations to parts of an idiom,

contributing to the interpretation of the whole idiom, helps to explain a range of differences which can be observed in the grammatical behavior of idiomatic constructions. In their view, the syntactic flexibility (or lack thereof) of an idiom is linked to its semantic analyzability: the different syntactic forms which an idiom can be explained on the basis of the nature of the semantic relations among the parts of the idioms and the meaning and discourse functions of various constructions.

Langlotz (2006a) converges with Nunberg et al. (1994) in their view that the form and the internal semantic structure of idioms can be very diverse. Langlotz goes further on to posit a continuum between two extreme poles: at the one end, there will be semantically unanalyzable units like *spick and span*, while at the other end there will be highly transparent expressions like the proverb *people who live in glass houses should not throw stones*. Along the continuum, it is possible to find a number of motivated and/or analyzable sayings such as *spill the beans*, which are to some extent compositional (e.g. *spill the beans*). Langlotz argues that this diversity should be accounted for by a model which regards idioms as complex cognitive configurations. Therefore, in order to explain the grammatical status of idioms and their variability, Langlotz asserts the need for a theory that can adequately describe the structural and semantic heterogeneity of idiomatic constructions and explain their variation potential and variation constraints. This theory should also be able to account for the underlying analyzability, motivation, or opacity of idiomatic constructions. Langlotz maintains that Nunberg et al.'s (1994) notion of “semantic compositionality” needs to be explained on the basis of a more general linguistic theory, hinting that Cognitive Linguistics could be an ideal candidate.

Taking Lakoff's (1987) programmatic attempt to explain semantic motivation of idioms in a cognitive-linguistic framework as a starting point, Langlotz aims to build a model able to contribute to the solution of the central controversy about idiom-representation and -variation. Embarking in a deep investigation of the structural characteristics of idioms and their mental correlates, Langlotz's model aims to reach the following two goals: first of all, provide a differentiated and cognitively-motivated view of what an idiom is; in turn, this should provide a well-motivated basis on which idiom variation can be accounted for. In the next subsection, I will outline this model.

2.2.2. *A summary of Langlotz's contribution*

As mentioned in the previous chapter, today an increasing amount of corpus-linguistic and psycholinguistic evidence which contradicts the traditional view of idioms as “long-words” is available. The central aim of Langlotz's study is to provide further evidence that the cognitive dynamics which govern the use of idioms are guided by the same principles that underpin other linguistic and non-linguistic processes. In order to reach this goal, Langlotz aims to build a cognitive-linguistic model of idiom-representation and idiom-variation, able to account for a substantial amount of data observed in a British English corpus. At the beginning of his enterprise, the author provides a preliminary definition of “idiomatic expression” as:

an institutionalized construction that is composed of two or more lexical items and has the composite structure of a phrase or semi-clause, which may feature constructional idiosyncrasy. An idiom primarily has an ideational discourse-function<sup>8</sup> and features figuration, i.e. its semantic structure is derivationally non-compositional. Moreover, it is considerably fixed and collocationally restricted.

(Langlotz 2006a: 5, footnote added)

Building on Titone and Connine's (1999) model of idiom comprehension, then Langlotz added a probabilistic dimension to his definition of idioms, which are now redefined as “conventionalized patterns of word co-occurrence, whose direct meaning retrieval is dependent on the key-based recognition of the mentally entrenched standard configuration.” (Langlotz 2006a: 43). Taking this definition as a starting point, Langlotz aims to reach two goals. First of all, he attempts to classify idiomatic constructions on the basis of their different types of semantic specialization and structural idiosyncrasy. Second, he aims to investigate the systematic lexicogrammatical variability of idioms as an effect of their semantic and structural characteristics, in order to disclose and describe the specific mechanisms that underlie the actual use of idiomatic constructions.

In accordance with the basic tenets of Cognitive Linguistics, he adopts the notion of “idiomatic activation-set” as the mental network that can be potentially activated when an idiom is used, a complex mental configuration that consists of several

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<sup>8</sup> The term *ideational function* is used to refer to the fact that idioms are used to refer to “objects, ideas, situations and processes in the world” (Langlotz 2006a: 135; cf. Halliday 1978).

coordinated symbolic and conceptual units that constitute its immanent substructures (cf. Diessel 2004: ch.2). In his study, Langlotz aims to specify:

- the immanent symbolic and semantic substructures that shape the idiom;
- the characteristic connections between these substructures;
- the variable ways in which these substructures can be activated in an actual usage-event.

The whole idiomatic activation-set is thus conceived of as more than the sum of its parts (e.g. *grasp the nettle* is an independent unit because of its specific meaning), but for the composite configuration to be cognitively unfolded, “its immanent parts - the keys – must be first recognized and activated.” (Langlotz 2006a: 98).

For different idioms, the relationship between their idiomatic and their literal meanings can have different qualities. Idioms reflect different semantic configurations that can be distributed along a continuum which ranges between the two poles of a) fully conventionalized but transparent semantic extension (e.g. *grasp the nettle*), and b) “homonimous” (sic) patterns for which the links between the literal and the idiomatic meaning have become fully opaque (e.g. *red herring*)<sup>9</sup>. In the present section, I will provide a description of the properties of Langlotz's model.

#### Parameters for the classification of idiomatic constructions

In order to categorize idiomatic constructions into a structured typology, Langlotz makes use of the following three key notions:

- *compositionality*: the level of predictability of the meaning of an idiom by adding up the meanings of its component parts. In Langlotz's study, it depends on the direct literal contribution of a constituent to the idiomatic meaning. As an example, all the components in the expression *take the bull by the horns* can be interpreted literally; therefore it is a fully compositional idiom. On the other hand, in *shoot a glance at somebody* only the word *glance* can be interpreted literally at the idiomatic level, therefore the idiom is only partially compositional. Finally there are some idioms which cannot be interpreted

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<sup>9</sup> This distinction is emphasized in e.g. Gibbs et al. (2004).

literally at all, like those including linguistic items which do not feature outside the context of the idiom, e.g. *put the kibosh on something*.

- *figurative-literal isomorphism* (or “analyzability”): the contribution of a component structure to the overall compositional value. An expression is isomorphic or analyzable if a one-to-one correspondence between the parts of the semantic value of a compound meaning as a whole and the constituent parts can be detected. Langlotz (2006a: 115) provides the example of the expression *rock the boat* (“to spoil a comfortable situation”), as an isomorphic idiom, because its idiomatic meaning can be distributed between its components: *boat* represents a comfortable situation, and *rock* conveys the idea of spoiling it. Isomorphism is deemed to be shaped by both top-down and bottom-up processes (cf. Geeraerts 2002), whereby the meaning of the parts and the meaning of the whole exert a mutual influence on each other<sup>10</sup>;
- *motivation*: a speaker's ability to make sense of an idiomatic expression by reactivating or remotivating its figurativity, i.e. to understand why the idiom has the figurative meaning it has given its literal meaning. It is important to underline the distinction between global motivation, when “the semantic extension from the literal to the figurative scene is still transparent,” and constitutional motivation, “when the constituents possess lexicalized figurative sense that also appears outside the phrasal context of the idiom.” (Langlotz 2006a: 113)<sup>11</sup>. Langlotz recognizes four patterns of idiomatic motivation: *conceptual metaphor*, *conceptual metonymy*, *conceptual blending*, and *emblems*. While a summary of the first three patterns has been already offered above, Langlotz (2006a: 72) defines an emblem as a “stereotypical conceptual prototype that works as a material representation of a very abstract quality or attribute.” For instance, Langlotz asserts that an expression like *man is a wolf* is motivated by the fact that in many cultures wolves are seen as incarnations of the abstract value of evil, rather than being a specification of the more general metaphor PEOPLE ARE ANIMALS (cf. Zinken 2003, 2004).

10 This notion has also been applied in cognitive-linguistic analysis of phenomena in other linguistic fields, see e.g. Janda's (2011) cross-linguistic study of word-formation.

11 Parizoska (2009) makes a case for the recognition of the role of conceptual motivation in idiom learning and variation, sustained by the analysis of a range of corpus data from Croatian.

The typology of idioms

On the basis of these three notions, Langlotz builds a typology of British English idioms, which is structured as follows. A first distinction is made between “idioms with inconspicuous, fully compositional literal meaning”, labeled “core types”, and “idioms with conspicuous or non-compositional literal meaning”, labeled “marginal types”. The former group includes four different patterns, which will be listed and briefly outlined below.

- A) idioms with literal compositionality, global motivation and figurative-literal isomorphism. These idioms are transparent, but their lexicalized figurative meaning cannot be found outside the context of the idiomatic constructions. Instances of this pattern include: *grasp the nettle*, *take the bull by the horns*, *spill the beans*, *burst/prick the bubble*, *upset the applecart*. For instance, let us consider *grasp the nettle*: in Langlotz's view, it can be motivated on the basis of the conceptual metaphors DEALING WITH AN ISSUE IS GRASPING IT, PROBLEMS ARE DANGEROUS OBJECTS. These metaphors can be directly applied to the constituents. Nettles are dangerous plants and to grasp them means to be courageous and determined. Thus the constituents *grasp* and *nettle* can be attributed to the meanings ‘approach determinedly’ and ‘problem, danger,’ respectively. Nevertheless, these meanings only appear in the context of the idiom.
- B) idioms with literal compositionality, global motivation, constituent motivation, and figurative-literal isomorphism. These idioms are even more transparent, as their components do have a lexicalized figurative meaning which appears outside the context of the idiomatic construction. This pattern includes idioms like: *swallow the bitter pill*, *jump on the bandwagon*, *make headway*. As an example, consider the expression *to swallow a bitter pill* (“to accept an unpleasant fact”): *swallow* and *bitter pill* have the lexicalized figurative meaning “accept” and “unpleasant fact”, respectively. Langlotz underscores that these meaning are motivated by the following conceptual metaphors: DEALING WITH AN ISSUE IS CONSUMPTION, COPING WITH AN ISSUE IS SWALLOWING/DIGESTING IT, QUALITY OF ISSUE IS QUALITY OF CONSUMED

SUBSTANCE.

- C) idioms with literal compositionality and global motivation. These idioms display a clear transfer from the literal to the idiomatic meaning, but their constituent structure is not isomorphic. This pattern includes, among others, the following expressions: *grit one's teeth*, *spin one's wheels*, *turn the page*, *go round in circles*. For instance, on Langlotz's view, the expression *to go round in circles* metonymically denotes stagnation in the source-domain, and then it is metaphorically extended to the target domain. Since this meaning is projected from the source to the target domain as a whole, this idiom does not display constituent mappings.
- D) idioms with literal compositionality, but neither motivation nor isomorphism. These expressions have a fully meaningful literal meaning, but it is not possible to find a link between the literal and the figurative meaning of these idioms. The pattern includes expressions like: *kick the bucket*, *pop your clogs*, *buy the farm*, *carry the can*, *trail your coat*. Let us consider *buy the farm*, for instance. There seems to be no conceptual ground which makes it possible to map the knowledge of commercial transactions to the target-process of dying.

The group labeled “marginal types” includes the following five patterns:

- E) idioms with a compositional, but unrealistic literal meaning. Idioms in this group show an experientially unlikely literal meaning, and they instantiate the process of conceptual blending. This pattern includes the following constructions: *cook the books*, *rack one's brain*, *like greased lightning*. As an example, *like greased lightning* (“suddenly, very quickly”) blends the lightning-frame with the machine-frame to create a hybrid model of extreme velocity.
- F) partially compositional idioms. These idioms feature the direct literal contribution of one component to the idiomatic meaning. Often semantically and syntactically ill-formed, they can be interpreted as a result of conceptual blending. Among others, this group includes: *know one's onion*, *look daggers at sb.*, *rain cats and dogs*. For instance, in *look daggers at somebody* (“look at somebody aggressively”), the verb *look* is to be understood literally, and the

violation of its intransitivity can be seen as a result of the conceptual blend between the act of looking at another person and throwing a dagger at somebody.

- G) literally non-compositional, constructionally idiosyncratic idioms. These idioms are opaque because it is not possible to construct a meaningful literal scene from their formal structure. This pattern includes the following expressions: *trip the light fantastic*, *come up roses*, *shoot the breeze*, *go places*. Langlotz states that for these expressions, the literal scene only exists at a highly schematic level. For instance, *shoot the breeze* may be described as a kind of shooting.
- H) literally non compositional idioms with cranberry morphs. The literal scenes for these idioms are highly schematic because their cranberry constituents cannot contribute to the evocation of rich conceptual scenarios. As a result, most of these idioms are opaque, and motivation for these expressions can only be constitutential. This pattern includes idioms like: *the whole kit and caboodle*, *put the kibosh on something*, *cook a snook*, *blow the gaff*. As an example, with *blow the gaff* (“tell people something that was supposed to be kept secret”), it is difficult to construct a sensible literal meaning due to the presence of *gaff*.
- I) idioms with absent literal compositionality due to the presence of highly specialized word-meanings and garden-path constituents. These idioms contain a lexical element with a very specialized word-meaning which is not generally known by many speakers. For instance, this is the case of *bushel* (a unit of volume equal to eight gallons) in *hide your light under a bushel* (“not show one's true talents”). Other idioms belonging to this pattern include: *have had one's chips*, *across the board*, *chomp at the bit*.

#### Methodology for the analysis of idiom variation

For his analysis of idiomatic variation, Langlotz selected 600 idioms denoting success, progress or failure, extracted from the *Collins Cobuild Dictionary of Idioms*. In order to outline the variation patterns observed in the actual occurrences, he recurs to the



notion of base-form:

In accordance with the usage-based view of grammar as a complex inventory of digested performance, an idiom's base-form can thus be defined as an idiom's context-independent default structure that is distilled from various usage-events". This constructional standard is directly associated with the idiomatic meaning, which itself emerges as a meaning standard (a schematic meaning type) derived from concrete occurrence.

(Langlotz 2006a: 177).

The analysis of actual occurrences of idiom-variation was carried out with the aid of the 100-million-word *BNC World Edition*, employed as a database for the selection of actual tokens. Langlotz focused on a qualitative cognitive-linguistic comparison of the lexicogrammatical adaptations reflected by the different idiom-transparency types. To develop a grammar of idiom-variation, he considered variation within idiom noun-phrases, clause-level transformations, and general lexical flexibility through lexical substitution. To extract representative tokens of the overall set of 600 idioms, the corpus was searched with the client programme *SARA-32 version 0.98*, the customary search tool supplied with the *BNC World Edition*. Langlotz conducted approximately 800 individual searches for verbal and prepositional idioms with base-forms featuring the following constructional schemas: V + NP (e.g., *grasp the nettle*), V + NP + PP (e.g., *take the bull by the horns*), V + NP to-V (e.g., *have a hard act to follow*), P + NP (e.g., *off the hook, on the rails*); between 0 and approximately 100 idiom-usage tokens were retrieved for each of these. To include all morphological inflections of these head-words, the *Lancaster lemma-scheme* was used. For each search, all tokens were downloaded unless they exceeded the arbitrarily chosen limit of 150 tokens. In the latter case, only a random selection of 100 tokens was downloaded.

#### Variation parameters

On the basis of their nature, deviations from the base-form are distinguished into: *formal variation* and *semantic variation*. The former kind of variation includes the following types of modification:

- *morphosyntactic variation*, which is taken to cover the inflectional variants of idiom constituents, including verb inflection, noun inflection (pluralization),

and the flexible use of determiners and quantifiers. E.g. *Swallow the bitter pill* → *The traditional camp had to swallow **some** bitter pills*.

- *syntactic variation*, which involves changes in the constructional organization of the verb form. E.g. *Upset the applecart* → *All this **has** upset the applecart of the relation of fertility to prosperity*.
- *lexical substitution*, the general alteration of an idiom's lexical constituent. E.g. *a **hard** row to hoe* vs *a **tough** row to hoe*.

The latter sort of variation, instead, comprises:

- *lexical polysemy*, which can be found when an idiom has a lexically invariant form but two conventional meanings. E.g. *come a cropper* (which can mean either “fall” or “fail”);
- *meaning adaptation*: in many lexicalized and occasional variants, the idiomatic meaning is modified in combination with corresponding lexicogrammatical alterations. Such meaning adaptations include:
  - *intensification*. E.g. *the time overturning the **most ponderous** applecart of all*;
  - *specifications*. E.g. *reaching hatred... fans the flames **of vengeance***;
  - *antonymy*. E.g. *the curtain **comes down** on sth*;
  - *perspectivization*. E.g. ***bring the curtain down** on sth*;
- *ambiguation*: the generic term for the creative process of playing with the semantic potential of idioms. E.g. *if you like wine, have a good nose*.

#### Linguistic creativity and variation principles

Langlotz aims to model an idiom's lexicogrammatical variation-potential, explaining the semantic and communicative effect of a given alteration for a given idiom in a given context; also, he aims to find an explanation for the different variation potentials of distinct idiomatic constructions. In order to provide a definition of linguistic creativity, he unifies the views of two different theoretical frameworks: on the one hand, the cognitive-linguistic view of linguistic creativity as the result of the behavioral necessity to adapt the means of symbolic expressions to the constantly changing experiences, and on the other hand, the relevance-theoretic view of linguistic

creativity as due to the necessity to make one's contribution maximally relevant<sup>12</sup>. As a consequence, Langlotz proposes that linguistic creativity is the result of the communicative urge to adapt one's linguistic unit to code complex and ever changing conceptualizations in a contextually appropriate way. According to Langlotz, this process involves the cognitive computation of a “non-entrenched linguistic standard” (Langlotz 2006: 188)<sup>13</sup>.

From this point of view, the coding of an idiomatic construction results in a complex process of conceptual and linguistic integration relative to three levels of meaning:

- the actual, discursive meaning to be encoded;
- the entrenched idiomatic meaning;
- the literal meaning.

The adaptation of an idiomatic construction in context involves the mental coordination between these three levels<sup>14</sup>. At this point, Langlotz addresses the issue of the extent to which idioms are open to creative coding decisions and to what extent these alternatives are blocked. The term “coding” is used in the way indicated by Langacker:

The task of finding an appropriate linguistic expression for a conceptualization can be referred to as the problem of coding; its solution is a target structure [...] The target is therefore a usage event, i.e. a symbolic expression assembled by a speaker in a particular set of circumstances for a particular purpose: this particular relationship holds between a detailed, context-dependent conceptualization and some kind of phonological structure (...)

Langacker (1987: 65-66)

According to Langlotz, the level of variability of an idiomatic construction depends on the idiom's formal and semantic organization and the way this complex configuration is adaptive to the discursive and situational context. Idiomatic creativity is identified as a cline between the two poles of “strikingly conspicuous wordplay”, on the one hand, and “inconspicuous lexicogrammatical adaptation”. The author then defines five

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12 Sometimes the relationship between these two traditions is defined in terms of complementarity, sometimes in terms of rivalry (see Mazzone 2009; Kövecses 2011 for a summary and critical assessment).

13 On the “cognitive computation” of non-linguistic standards, see also Langlotz (2006b: 96-99).

14 This perspective seems to take into consideration only what Kövecses (2010c: 667) calls “local contexts”, ignoring the “global contexts”. See below.

basic principles for the definition of variation patterns which are supposed to be distributed along this cline. These are listed and briefly sketched below (see Langlotz 2006a: 205-214):

- *constructional adaptation*: modifications of the base-form that change the inflectional and syntactic structure of an idiom systematically. E.g. *The Khmer Rouge is aware of the tightrope it has to tread, both with the West and with Vietnam*;
- *literal-scene manipulation*: a contextually motivated adaptation of the idiomatic meaning by adapting the literal scene for the purpose of conveying the target conceptualization efficiently. Instances of literal-scene manipulation can vary in terms of conspicuousness, according to a criterion Langlotz labels *elaborative distance*. Elaborative distance represents quantitative and qualitative changes of the literal scene. Compare the following two examples: *The Chancellor had a narrow tightrope to walk and he managed to please a variety of people* vs. *Only the utter ruthlessness of one ravaged, machine-sustained tyrant and the overstretched forces of his fierce yet fragile Imperium kept the human race tottering along its fraying tightrope*. While the former only involves adjectival premodification and a regular syntactic change to create a rather inconspicuous variant, the latter displays an accumulation of lexicogrammatical changes which result in a striking idiomatic variant.
- *topic-indication*: a context-specific phenomenon, integrated into the idiom's formal structure according to general grammatical rules for adnominal modification and lexical substitution. E.g. *That sum may seem like a lot of lei (the Romanian currency that purchases next to nothing abroad) but it still left the Romanians treading a financial tightrope*;
- *topic-related literal-scene manipulation*: an idiom's topic cannot only be addressed by blending alien topic indicators into the constituent structure. Rather, the literal scene can also be related to the informational structure of the target conceptualization by manipulating it in a way that leads to a consistent topic-related literal-scene. E.g. *Bruce, a shark, found it a part he could really sink his three rows of teeth into*;

- *ambiguation/punning*: ambiguation and punning involve the creative evocation of multiple referentiality. E.g. *In the dying minutes Bradford had Lee Sinot send off for arguing, but by then Swindon were home and well almost dry*<sup>15</sup>.

### Variation patterns

According to the variation principle shown by each specific occurrence, Langlotz organizes the data in the classes concisely outlined below<sup>16</sup>:

- *usual variant*: a frequently recurring variant of an idiom which does not entail any modification in the meaning. It can be seen as a lexicalized alteration of the construction. E.g. *Bleed NP dry → Bleed NP white*;
- *systematic variant*: a variant which simply denotes modifications in the morphosyntactic and syntactic structure, compared to the base-form. This kind of variant is effected by the principle of constructional adaptation. E.g. ***That tightrope was walked** every weekend when Charles and Diana took the train with their nanny from Norfolk to Liverpool Street station in London where their mother met them*;
- *systematic occasional variant*: a variant which denotes modifications in the morphosyntactic and syntactic structure, compared to the base-form, and whose meaning is affected by contextual integration. This kind of variant can be caused by the principles of either topic-indication or (inconspicuous) literal-scene manipulation. E.g. *As it once showed the way toward democratic success, today it blazes the trail toward democratic failure*;
- *intentional creation of a variant*: a variant which reflects the intention to cause certain perlocutive effects in the interlocutor playing on the relationship between the literal and the figurative meaning of an idiom. This kind of variant can be triggered by the principles of (conspicuous) literal-scene manipulation, topic-related literal-scene manipulation, or ambiguation. E.g. (from a review of

15 The last example is an excerpt from the report of a football match played under an extremely heavy rain.

16 It should be born in mind that this distinction between classes represents a cline of idiomatic variability rather than an airtight classification; thus, the distinction between variation classes is better interpreted as fuzzy rather than clear-cut.

a production of the *Twelfth Night*) *Malvolio deserves almost everything he gets, but... there is that little stab of shame we feel at the end for having had such fun pulling his cross-gartered leg for so long;*

- *non-intentional, erroneous variant*: a non-intentional departure from the base-form; an idiomatic “slip-of-the-tongue”. E.g. *The dust clears* (formal blend of *the dust settles* + *the fog clears*).
- *pseudo-variant*: a departure from the base-form that cannot activate the idiomatic meaning but can only be interpreted literally. E.g. *She kicked the bucket* (to describe a scene in which a hospital attendant accidentally stumbles into a bucket).

On the basis of what he could observe in his analysis, Langlotz asserts that fixedness resides in the mental entrenchment of the linguistic and conceptual substructure of idiomatic activation-sets rather than a fully codified lexical sequence. This trend is most pronounced with isomorphic idioms that have constituents with lexicalized figurative senses; it also occurs with isomorphic and motivated idioms, but it is not present with opaque idioms. In other words, strong conceptual motivation seems to support systematic lexical flexibility, while opacity blocks such variations. Some restricted types of idioms variation with opaque idioms could be subject to the entrenchment of constructional schemas that guide the constrained range within which the alteration can be produced. Such a view of idiom variation would again be phraseological in nature and underlie the dynamic interplay of routine and creativity in language use (cf. Naciscione 2010).

Among the conclusions Langlotz draws from his investigation of English idioms, below are listed those I consider relevant to my concerns in the present study (although to different extents), only:

- a great number of idioms have a motivated and analyzable semantic structure;
- systematic idiom-variation correlates with idiom-transparency, which means that systematic lexicogrammatical alterations are constrained and motivated by the specific quality of a given idiomatic activation-set;
- attempts to explain the syntactic flexibility of idioms relative to autonomous syntactic transformations or rules can be rejected in the light of the existence

of alternative conceptually motivated types and subtypes of idiom transparency;

- the systematic lexicogrammatical behavior of idioms can be explained in terms of the speaker's ability to manipulate an idiomatic activation-set to make it fulfil its cognitive modeling function effectively;
- idiomatic creativity reveals intelligent human behavior that is based on general cognitive principles and processes. Idiomatic creativity emerges as the speaker's figurative competence to manipulate an idiom as a cognitive micro-model – a mental network that can be evoked to organize and communicate the abstract conceptual relationship in a target conceptualization figuratively.

### 2.2.3. *A brief critical assessment*

As I stated at the very beginning of the present section, Langlotz's (2006a) is a very important reference point for the present study. Indeed, it represents a very important contribution to the field of figurative language studies and, in particular, to the exploration of the socio-cognitive study of idiomatic constructions. As underlined by Vo (2007), the author goes beyond a mere description of how idioms are used, aiming to build an integrated account of idioms, language variation, and human cognition, on the basis of a robust theoretical framework and strong empirical evidence. Langlotz successfully applies the notions developed within the cognitive-linguistic framework in the last few decades, also integrating them with notions from other theoretical paradigms<sup>17</sup> when suitable to provide an overall internally-consistent explanation of the phenomena observed in his analysis of idiom-variation. Showing awareness of the complexity of the task, he provides an extensive, carefully detailed exploration of the linguistic and cognitive nature of English idioms and the relationship which holds between the different idiomatic expressions, also managing to avoid seeing them as a self-contained group isolated from the rest of the linguistic units which make up the constructicon of the language.

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<sup>17</sup> In particular, Langlotz often exploits notions from Relevance Theory (e.g. Sperber and Wilson 1995), and occasionally from Neurocognitive Linguistics (e.g. Lamb 1999).

One of the strongest points in Langlotz's study is the recognition of idiomatic constructions as an extremely complex phenomenon, whose status represents the result of the persistent tension between their conventional form and meaning and the situational uniqueness of each context of use (which actually binds them to other linguistic constructions). As a result, Langlotz understands the necessity to disclose the conceptual structures underpinning the hidden links between the structure and meaning of an idiomatic construction and the type of formal variation it systematically undergoes. Langlotz identifies the different degrees of transparency/opacity of an idiomatic construction as determining the different degrees of formal variability. In order to arrive at this conclusion, he had to explore the relationship between the literal and figurative meaning of each idiom, for the purpose of finding the commonalities and differences between the constructions and supplying a coherent explanation for them, which is not a trivial task. Nevertheless, by making skillful use of the descriptive notions and tools of Cognitive Linguistics, Langlotz manages to identify the parameters which make an idiom more or less transparent/opaque (compositionality, figurative-literal isomorphism, and motivation). Next, he had to evaluate the role of each parameter in determining the level of transparency/opacity of each idiomatic constructions, in order to group them into distinct patterns, which is again a very complex matter. Nevertheless, Langlotz succeeds in identifying the interaction between the parameters mentioned above and, accordingly, draws a cognitively-motivated taxonomy of English idioms which looks coherent and defensible. This remarkable achievement of Langlotz's inspired the analysis presented in ch. 4 of the present study.

Another very strong point of Langlotz's work is the scheme he uses to summarize the technical classification of idiom alterations. From a cognitive-linguistic point of view, it seems to make sense to first distinguish between formal and semantic variation, and then to proceed to a further distinction within each of these two categories. Within the formal pole of idiomatic variation, it is sensible to distinguish between the morphosyntactic, syntactic, and lexical levels (which are not, of course, mutually exclusive). On the other hand, classifying dimensions of variation in the semantic pole may be a lot trickier. Nevertheless, Langlotz manages to find his way



through this minefield and provides another elegant tripartite distinction, where the differences between the three categories are quite straightforward. In this sense, Langlotz finds a way to provide an account of variation which is clear and flexible enough to provide a thorough characterization of each variant. There is actually a flaw in the definition and application of these categories of semantic alterations: they are often considered only with reference to their internal semantic structure, without paying attention to their function in the broader discourse context. Nevertheless, Langlotz is aware of this limitation: the necessity for an account of their discourse-functional properties is explicitly mentioned in the last chapter of his book, where the author provides a list of desiderata for further investigations of idiomatic constructions.

Langlotz's identification of (in)conspicuousness as the key parameter for the evaluation of the level of creativity of an idiomatic occurrence, understood as the integration of the conventional formal and semantic properties of the idiom with the properties of the usage context, also proves successful. The delineation of five variation-principles distributed along a cline of conspicuousness allows the analyst to allocate each specific occurrence of a construction to a particular variation class on the basis of well-motivated criteria. While the adoption of these principles does not (and is not meant to) rule out possible alternative classifications, it is nevertheless effective to the purpose of identifying distinct variation patterns. In this way, Langlotz provides the analyst with a robust theoretical framework, allowing them to allocate each idiomatic occurrence to a specific variation pattern (if any) with a certain degree of confidence. A possible criticism to Langlotz's classification system is that the boundaries between the variation classes are somewhat fuzzy and sometimes the allocation of an occurrence to a variation-pattern rather than another one is less than straightforward and may involve a certain degree of arbitrariness. Nevertheless, while it is true that the distinction between variation classes is not very rigid, this fact is not necessarily to be seen as a flaw. Probably, it could never be, if it is meant to be realistic: the nature of the data is most often influenced by so many variables (see ch. 3) that the actual application of these principles to the analysis of each example is not a straightforward task. Still, it does not seem reasonable to ascribe this problem to

Langlotz's classification model: the search for an ideal system of data classification is a common problem in the scientific community<sup>18</sup>.

Despite the importance of Langlotz's contribution to the field and all the strong points of his study briefly sketched above, there are some aspects of his study which look rather problematic, from the present perspective. An overarching issue which can be observed in Langlotz's study is that it is permeated with a prominently mentalist approach. The issue of idiomatic stability and variation is tackled from the starting point that human language and cognition can be studied and understood in terms of mental representations only, a tendency which can be actually observed in most cognitive-linguistic studies<sup>19</sup>. While the psychological dimension of language should never be neglected, there are some problems with the adoption of a strictly mentalist approach. The most trivial one is that it may lead the scholar to neglect the role of socio-cultural factors in shaping the linguistic system; as a consequence, language is often taken away from its dialogical habitat. Language has both an individual and a collective dimension; moreover, at different time-scales of observation, it is both stable and changing: while neither Langlotz nor any other cognitive linguist would probably deny this fact, the adoption of a mentalist perspective leads to privilege its individuality and stability<sup>20</sup>.

For instance, consider the notion of “idiomatic activation-set”, which is crucial in Langlotz's study. It is easy to see that it focuses on a complex internal process, foregrounding its mental dimension only: this conception is strongly individualist, and fails to consider the social, dialogical, and dynamic nature of linguistic interaction. However, idiomatic constructions are always used in specific, situated situations, where the interaction performs a certain function. This function is part of the interaction itself. As underlined by Fusaroli et al. (2014: 150): “actions and cognitions of the interlocutors are coordinated toward the goal at hand, selecting relevant

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18 An example of this problem is represented by the debate about prepositional polysemy within the cognitive-linguistic community (see e.g. Lakoff 1987; Zelinsky-Wibbelt 1993; Tyler and Evans 2003; Lewandowska-Tomaszczyk 2007; Luraghi 2009).

19 This criticism, nevertheless, cannot be moved to the whole Cognitive Linguistics enterprise. Indeed, there is a number of cognitive linguists who are increasingly taking the social nature of language into consideration (see below).

20 As suggested by Itkonen (1997), this seems to be a feature cognitive linguists inherited from generative grammarians.

dimensions for alignment, distributing roles and compensating for mistakes and perturbations.” Therefore, the notion of the idiomatic activation-set as “a complex mental configuration that consists of several coordinated symbolic and conceptual units that constitute its immanent substructures” appears somewhat reductive, as it focuses only on language from the point of view of the individual, decoupling the organism from the functional organization of the environment. As a consequence, considering the immanent symbolic and semantic substructures that shape the idiom, the characteristic connections between these structures, and the variable ways in which these substructures can be activated in an actual usage-event from an internalist point of view does not seem fully satisfactory. The same tendency toward the adoption of a very mentalist perspective is the definition of linguistic creativity as “the result of the communicative urge to adapt one's linguistic unit to code complex and ever changing conceptualizations in a contextually appropriate way” (Langlotz 2006a: 188) and the coding of an idiomatic construction as resulting in a complex process of conceptual and linguistic integration of the actual, discursive meaning to be encoded, the entrenched idiomatic meaning, and the literal meaning.

While these notions could be seen as useful, simplifying descriptive tools, I will prefer to avoid such a strongly mentalist, representationalist perspective and any possible reference to the view of language as an “encoding/decoding” activity. The present study should not be seen as a mere replication of Langlotz's investigation applied to the idioms of another language. The scope of this study is quite different, and diverges from Langlotz's in several aspects. Langlotz (2006a) represents a very good platform to carry out my analysis, because it introduces a complex theoretical architecture which carefully employs the notions developed within the cognitive-linguistic community during the last decades to carry out an in-depth analysis of English idioms. Nevertheless, from the present perspective language is considered as a dynamic system, as sometimes seems to be tacitly suggested in the (functionally-oriented) literature about figurative language, and the scope of the present study is to address language as an integrated component of a global ecology which includes bodies, minds, and (physical as well as socio-cultural) environment.

Another point on which Langlotz's study does not seem fully convincing is the

distinction between “core” and “marginal” types of idioms. While the classification of different idioms into groups according to their level of transparency/opacity makes sense, the need for a distinction between “core” and “marginal” types is less clear. Actually, this may be confusing rather than useful. The use of such terms intuitively triggers the expectation that idioms belonging to “core” patterns vastly outnumber those belonging to “marginal” patterns, but this does not seem possible to be established a priori (rather, it would require an empirical confirmation), nor does it seem particularly relevant to the object of the study. For these reasons, in my study I will preserve Langlotz's distinction into patterns, but I will not group them into “core” and “marginal” types. Moreover, sometimes the designation of an idiomatic construction to a specific idiomatic pattern is not straightforward, and requires the adoption of parameters which are, to some extent, arbitrary. For instance, all expressions which include keywords referring to metaphysical entities like, for instance, “soul”, can be classified differently according to the different cosmology the analyst decides to adopt. Consider the following examples:

- (13) Dannar -si l' anima.  
damn.INF REFL the.FSG soul.SG

“to damn one's soul”, meaning to make any effort or sacrifice to reach a certain goal.

- (14) Essere un' anima nera.  
be.INF a.FSG soul.SG black.SG

“to be a black soul”, meaning to be a mean, evil person.

The designation of this kind of idioms to a pattern or another one depends on the belief of souls as real or imaginary entities. In the specific case of idioms containing keywords related to metaphysical concepts, I will adopt a point of view which might loosely be labeled as “materialistic”, meaning that, since there is no ultimate proof of the existence of their referents, I will consider their literal meaning as experientially unrealistic.

For the time being, I am going to close this short critical assessment of Langlotz's (2006a) book-length study by specifying that the author's concluding remarks are, from my perspective, to be taken as working hypotheses rather than conclusions. While this

is actually acknowledged by Langlotz himself in the last chapter of his contribution, he only makes reference to the desiderata for cognitive-linguistic and psycholinguistic studies of idiomatic constructions in use. In the present study, I would like to assert that the phenomenon should be investigated and assessed in the light of a more encompassing theoretical framework, which does not isolate individual minds from the surrounding environment, stressing instead the inherently dialogical, social nature of language (see e.g. Reed 1997; Sinha 1999, Rączaszek-Leonardi and Cowley 2012).

In the following section, I will provide an outline of a more ecological perspective, which does not aim to neglect the importance of the psychological reality of linguistic phenomena at the individual level, but at the same time it acknowledges the emergence of language from everyday experience in its material, social, and cognitive niche (e.g. Clark 2006a, 2006b; Sinha 2009; Fusaroli 2011). In this framework, cognitive capacities are seen as extended by social practices (see Menary 2013) and the primary function of language is to support interpersonal interaction and coordination<sup>21</sup>: as Fusaroli et al. (2013: 33) propose, “Language is an *activity* that allows us to coordinate actions, perception, and attitudes, share experiences and plans, and to construct and maintain complex social relations on different time-scales” (italics original). The replacement of a traditional cognitive-linguistic perspective with a more distributed, embedded view seems to be promising in order to allow a more detailed and complete description and explanation of linguistic phenomena, considering the psychological dimension situated in the socio-cultural and physical environment where mental processes take place.

### 2.3. Situating language in its global ecology

As briefly mentioned at the very end of the previous section, although the merits of (traditional) Cognitive Linguistics are surely not to be neglected, the paradigm also shows some remarkable weaknesses, which limit its adequacy to provide an

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21 It seems relevant to underline that this approach is consistent with neuroscientific evidence (e.g. Rizzolatti and Craighero 2007; Gallese 2008) and, from an evolutionary perspective, supports emergentist hypotheses about language origin and evolution (e.g. Chater and Christiansen 2010; Schönemann 2010).

appropriate account of the nature of linguistic phenomena. More specifically, there are two main (interrelated) problems with the traditional cognitive-linguistic perspective. First of all, it tends to focus on the individual dimension of language, overlooking its socio-cultural nature. Although it is usual for cognitive linguists to mention the role of society and culture in shaping language, they rarely go beyond some declarations of principles, endorsing instead a cognitive centralism based on the neural embodiment of language and cognition (e.g. Rohrer 2005; Lakoff 2008; see e.g. Leezenberg 2013 for a recent criticism). Likewise, mainstream views in the cognitive-linguistic framework also inherited the strongly mentalistic view of generative grammarians, underestimating the fact that human activity always takes place in context (and linguistic events are no exception). As Fusaroli et al. (2014) emphasize:

(...) both generative and cognitive linguistics, although in quite different ways, have favoured strong representationalism. The understanding of linguistic behavior is first and foremost a matter of disentangling and mapping abstract cognitive linguistic representations, whether in terms of generative syntactical structure or embodied image schemas.

(Fusaroli et al. 2014: 148)

Nevertheless, moving this criticism to the whole Cognitive Linguistics endeavor is too severe and ultimately inaccurate, since it overlooks a less mainstream (but fast growing) position within the Cognitive Linguistics enterprise which recognizes the necessity to view language as a social as well as a cognitive phenomenon. This tendency toward the inclusion of social factors in the analysis of linguistic phenomena is growing fast within the framework, and therefore deserves to be dealt with in some detail<sup>22</sup>.

Chris Sinha has been advocating the integration of social and cognitive aspects in the analysis of linguistic phenomena for a long time (Sinha 1999, 2004, 2009, 2014; Sinha and Jensen de López 2000; Sinha and Rodríguez 2008). In an old paper of his (Sinha 1999), the scholar outlines the need for Cognitive Linguistics to avoid taking a subjectivist point of view. According to Sinha, meaning should not be seen as mental object; rather, he argues that the role of cognition in language is the mapping from conceptualization to expression. “Conceptualization” for him is the linguistic and conceptual organization of a referential situation in a frame of reference which is

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<sup>22</sup> The point on Verhagen's work in §2.3.1 represents an example of this growing tendency.

intersubjectively shared among the members of a community. Adopting a perspective which is close to a position advocated by proponents of dynamic and ecological approaches to cognition, Sinha argues that meanings are acts rather than mental objects (an observation consistent with Thelen and Smith's 1994 point of view). Acts of meaning are subjectively construed to make sense in an intersubjectively shared universe of discourse, which is continuous with the material world in which other (non-discursive) human activities are carried out (a point which converges with Hutchins's 2005 perspective on conceptual blends, see below). Linguistic meaning is therefore social doing, rather than a thing: communication is action, intervention in the world. As a consequence, meaning is grounded in the socio-cultural context we live in, as well as our embodied, perceptuo-motor abilities.

Bernárdez (2005) emphasizes the importance of understanding the inherently social nature of cognition, pointing to the many philosophers and scientists who have emphasized the social and active nature of the human mind (e.g. Damasio 1999; Tomasello 1999; Semin and Smith 2002). While recognizing the importance of physical embodiment in cognition, Bernárdez highlights the need to consider not only the relationship between body and environment, but also to widen our view of cognition to include situatedness and the role of activity in cognition, which should be integrated in Cognitive Linguistics research. Bernárdez looks at situated and distributed approaches to the study of human cognition, where attention is paid to collective behavior:

Cognitive activity may involve processes internal to the single individual, the individual in coordination with a set of tools, or a group of individuals in interaction with each other as a set of tools... The different individuals and tools constitute the unit of cognition rather than merely modifying or applying the internal structures of a single mind.

(Mandelblit and Zechar 1998: 254, quoted in Bernárdez 2005: 211)

At the end of his paper, Bernárdez emphasizes that, since language only exists in social activity, linguistic activity is essentially collective: not only is the activity carried out within a social group, but the reasons at its roots, the forms of its realization, as well as its results are social in nature; as a consequence, the process of linguistic activity can only be understood by carefully scrutinizing the links between

its individual and collective aspects. The author stresses that, since linguistic activity determines linguistic forms (i.e. a number of alternatives exists, but only one or more are selected in a stipulated contextual condition, becoming integrated in the life of individuals), language variation and change are the direct results of the nature of language as a social activity. As a result, he emphasizes the need to study linguistic variation and to pay close attention to language use, which should be seen as a form of social as well as cognitive activity.

Croft (2009) also points out the danger for Cognitive Linguistics to be too solipsistic, exposing itself to the same kind of criticism its proponents put forward to formal theories of language, by giving too much emphasis to the speaker's individual mind. The author underlines that language is a central feature of human social interaction; as a consequence, linguistic structures and processes in the mind are instances of general social and cognitive abilities. According to Croft, the most important of these abilities are *joint action* (i.e. carrying out an activity together), *coordination* (i.e. monitoring that the joint action is being carried out successfully), and *convention* (i.e. a partly arbitrary regularity in behavior which works as a coordination device in a community to deal with a recurrent coordination problem). Croft makes the important point that all individuals have a repertoire of codes for use in the different communities to which they belong: understanding an utterance depends on shared knowledge, beliefs, and attitude about the world. An important factor in the success of a communication event is *construal* (see e.g. Verhagen 2007; Langacker 2008): choosing particular words or constructions to verbalize a specific situation in a certain context construes it with reference to the language users' prior experience, and at the same time it modifies the linguistic system by sanctioning the application of the linguistic form to new experience. This is a source of variation, which may be change in progress. From this perspective, a social cognitive linguistics is an inherently dynamic approach.

In recent years, the recognition of the necessity to investigate language variation as a social phenomenon has led to the emergence of the field known as “Cognitive Sociolinguistics” (e.g. Kristiansen and Dirven 2008; Hollmann 2013), which aims to bridge the gap between cognitive-linguistic and sociolinguistic research. Converging



with Bernárdez's point summarized above, Geeraerts (2005) argues that the experientialist nature of Cognitive Linguistics recognizes the primary importance of socio-cultural environment and the interactive nature of language, along with its physical and physiological embodiment. Since Cognitive Linguistics is an empirical approach, Geeraerts argues, it cannot avoid considering the social nature of language, because usage data inevitably include sociolinguistic variation. In addition, given that variation affects meaning, and Cognitive Linguistics is a meaning-oriented approach to language, it cannot avoid studying variation. The author then argues that the experiential foundation of language includes the social and cultural background of language users as well as their physiological and neurological embodiment. At the same time (pace Itkonen 2003), the conception of language as a social phenomenon entails the analysis of actual usage data. Cognitive Sociolinguistics focuses on phenomena that are specifically addressed in Cognitive Linguistics research and applies cognitive-linguistic models to variationist phenomena (e.g. Hollmann and Siewierska 2007, 2011; Clark and Trousdale 2009; Zenner et al. 2012).

Following Enrique Bernárdez's insights, in the present study I will adopt an approach which largely overlaps with this more socially-oriented position, integrating this view with insights from Ecological Psychology and the study of complex systems:

Remember that one of the main features of the Cognitive Linguistics enterprise is that confirmation has to be sought from different, independent disciplines (...) Human beings dispose, (...), of an extremely old mechanism for the coordination of behavior among individuals. Further than that, this type of coordination has to be studied with the means of self-organization theories (Bernárdez 1995; Kelso 1995; Thelen and Smith 1994)

(Bernárdez 2005: 213)

Therefore, I will consider language as a primarily intersubjective and distributed phenomenon, whose emergence involves an interplay of heterogeneous processes, which encompass different time-scales, ranging from the neural to the cultural. In the following subsections, I will first provide a brief overview of this more distributed and ecological approach (partly based on Torre 2014), and then I will argue for the adoption of a dynamic-systems approach as an ideal solution to operationalize this view, anticipating the detailed introduction of Dynamic Systems Theory which will be provided in ch. 3.

### 2.3.1. *Language, organism, and environment*

Adopting a distributed, ecological perspective, language can be seen as a process which is grounded in the *interactivity* of human beings, and extends beyond the person to embrace other individuals as well as a system of socio-cultural values and material artifacts (along with the work referenced above, see e.g. Thibault 2011; Rączaszek-Leonardi and Cowley 2012). Consequently, the use of language is part and parcel of a larger activity, which cuts across cognition, culture, and communication (see Cowley and Kravchenko 2005; Cowley 2007a, 2009). This has serious implications for the conceptualization of the relationship between linguistic constructions and the context of use, which goes beyond the postulation of a semantic-pragmatic continuum usually proposed in Cognitive Linguistics (e.g. Langacker 2008). On this view, the primary function of the linguistic symbol is to constrain the dynamics of a situated interaction; therefore, not only does the local context play a supportive role in the creation of a communicative event, but it lies at the roots of intentional activity (Hodges and Fowler 2010; Rączaszek-Leonardi 2010; see also Fowler 2010; Fowler and Hodges 2011).

It follows that language use is inherently flexible and dynamic, and cannot be fully captured by stable patterns; rather, linguistic interactions are driven by the continuous interplay of a range of formal, semantic, pragmatic, affective, cognitive, discursive, and situational factors (cf. Spivey 2007: ch. 7). From this perspective, language is conceived as a primarily intersubjective process: its development depends on the cumulative experience of intentional agents (to be considered as irreducible body-mind couplings) in the physical and socio-cultural world, in a constant interplay which affects both poles of the dyad. Accordingly, the main function of language is enhancing communication between individuals and, by so doing, regulating the life of a community (Reed 1997: ch. 11).

This point holds when dealing with both the ontogenetic and the phylogenetic dimension, which stand in a relation of mutual influence. As a consequence, it is vital to embrace the self-organizing nature of language, recognizing its status as a process “in motion” (cf. Port and Van Gelder 1995), which also interacts with other cognitive and social processes. Indeed, in order to achieve successful communication, it is

necessary that the interlocutors attain a sufficient level of alignment of their attentional systems. This implies that they have to efficiently use the affordances offered by the environment in order to reach an optimal degree of cognitive and affective coordination<sup>23</sup>. From the present perspective, it seems reasonable to follow those scholars who claim that this is indeed the main purpose of language. As an example, Verhagen (2005, 2008) argues that the most basic function of language is *argumentative* rather than *informative*.

On this view, appropriate linguistic constructions can be chosen to establish a coordination relationship between the interlocutors and regulate their joint attention toward particular objects or situations. For instance, according to Verhagen (2005: 92), the primary function of finite complement clauses is to assess a common object of attention, while the matrix clause provides an epistemic stance on that assessment. Adhering to this view (Verhagen, 2005: 105-107), the following utterances can be distinguished on the basis of their different argumentative strength:

(15) It was scheduled for 4pm.

(16) I think it was scheduled for 4pm.

(17) Someone said it was scheduled for 4pm.

Each of them constitutes a coherent answer to the question, *will we be in time for the launch?* In both (15) and (16) the speaker and the addressee are engaging in cognitive coordination with respect to the same object of conceptualization. However, in (17) the onstage conceptualizer is neither the speaker nor the addressee, but a third person, whose perspective is temporarily endorsed by the speaker. In this case, the cognitive coordination between the two conceptualizers is indirect.

On the basis of the linguistic behavior of a number of constructions, Verhagen argues that the linguistic system is tightly integrated with the specific human abilities to coordinate cognitively with others. Consistent with dynamic and ecological perspectives in linguistic theory (e.g. Cowley 2007b; Zlatev 2005, 2008; Sinha 2009;

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<sup>23</sup> It is important to highlight that *coordination* does not necessarily correspond to *cooperation*. For instance, successful deception needs a considerable degree of dyadic coordination.

Fusaroli and Tylén 2012), he also states that understanding certain grammatical phenomena requires a view of language which relates the function of grammatical constructions to the intersubjective dimension of human cognition and action, suggesting that structure, function, conventionality, and context should be studied in parallel<sup>24</sup>.

While Verhagen's point on cognitive coordination is intuitively sound, it seems relevant to underline that communication also displays an important affective dimension: emotional attunement is crucial for coordination. Following Worgan and Moore (2011), the emotional states of the interlocutors contribute to the definition of the set of interaction affordances available in the environment, influencing the interactants' behavior. The emotional value associated to each expression can be used to (at least try to) manipulate the addressee's attentional system, and increase their level of coordination. Since the evaluation of the affective import of each linguistic construction is strictly subjective, one can never be 100% sure of the addressee's response to their choice. Nevertheless, it seems reasonable to hypothesize that expectations at the emotional level drive an individual's choice of the expressions, contributing to shape the interaction (cf. Madsen 2014 on the influence uncertainty and temporality exert on subjectivity).

It is also crucial to stress the fact that the interlocutors do not engage in a process of cognitive and affective coordination “in a vacuum,” but against the background of a normative world, which imposes itself on people. While norms cannot – strictly speaking - determine people's conduct, it seems plausible to argue that belonging to a social group entails one's awareness of a certain set of rules and conventional behaviors. This implies that norms organize social interaction, providing “formally ritualized patterns of behavior, which bring relatively predictable effects on others in the social realm” (Enfield 2011: 286). Language, as a social institution, is inherently normative (e.g. Itkonen 1997, 2008; Zlatev 2007; cf. also Tomasello 2009; Port 2010); consequently, when individuals from the same community engage in verbal communication, they have some expectations on the development of the interaction. In particular, unless they have special reasons not to do so, they will normally expect

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24 Insightful philosophical perspectives on the study of intersubjectivity in cognition and language can be found in Praetorius (2004), Csordas (2008), and Sambre (2012).

their interlocutor(s) to be cooperative in respect of the norms (e.g. Moll and Tomasello 2007).

Enfield and Sidness (2014) argue that, in a linguistic exchange, it is possible to observe a *prospective* dimension, where a first action activates a norm, making the doing of a second action relevant and “noticeably absent if not present,” (Enfield and Sidnell 2014: 99) and a *retrospective* dimension, which allows the first speaker to see if and how they have been understood. In other words, a communicative move triggers a *sign-response cycle*, where the relation between action and response is crucial in defining them both (on the past-present-future continuum, see Madsen 2014; Thibault 2014). From this perspective, the choice of specific linguistic constructions is both determined by (and embedded in) the immediate situated context and inherently grounded in historically established socio-cultural practices (cf. Madsen 2014; Pedersen and Steffensen 2014). As pointed out by Fusaroli:

The meaning of a situated linguistic structure is defined by an ongoing interaction between sedimented usages (a more normative but pluralistic dimension), co-textual and contextual constraints and expectations.

(Fusaroli 2011: 114)

Quite obviously, this has consequences for how the notions described in §2.1.1 are considered. As an example, a distributed, dynamic view on the study of language calls the claims for the stability and unidirectionality of domain mappings in conceptual metaphors into question<sup>25</sup>. As recently proposed by several scholars (e.g. Cameron and Deignan 2006; Frank 2007), rather than representing the fully conventional static patterns of systematic mappings from a source domain to a target domain postulated by some prominent theoreticians (e.g. Lakoff 1993; Kövecses 2006a), metaphors seem better conceived as flexible, adaptive processes, which are constantly (re-)shaped by language use (see also Deignan and Cameron 2013; Mouton 2013).

The same consideration can be made even more straightforwardly with regard to conceptual blending, a notion which underscores the contiguity of language with other (both locally and globally, physically and socio-culturally situated) cognitive processes, some of which at first glance may seem totally unrelated. The inherently

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<sup>25</sup> This point also seems to hold for within-domain mappings in conceptual metonymy.

distributed nature of these processes allows conceptualizers to reason about unfamiliar concepts by first associating or merging them with familiar ones. Following Edwin Hutchins's suggestions, it seems possible to propose that conceptual blending allows for an account of cognitive processes which does away with a clear-cut distinction between internal (i.e. neural and conceptual) and external (i.e. material and artefactual) resources (cf. also Wheeler 2004):

Conceptual blending has previously been seen as an entirely internal cognitive process. (...) the same kinds of processes operate in situations where one or more of the input spaces to the blend contain material structure. This unification is important because it provides an antidote to the false dichotomy between the study of conceptual models and the study of material resources for thinking.

(Hutchins 2005: 1576)

Hutchins (2005) provides a series of examples of materially anchored conceptual blends. I will just mention one which regards a relatively common object: the slide rule (see Fig. 2.1 below). In a slide rule an abstract quantity, the logarithm of number, is mapped onto an extent of space. These two spaces situated next to one another make it straightforward to add together the extents of space corresponding to the logarithms of two numbers. The addition of logarithms is an implementation of multiplication; therefore, the extent of space which corresponds to the sum of the extents of space of the logarithms of the two numbers corresponds to the logarithm of the product of the numbers. In this blend, the input spaces are the two representations of the logarithms of the numbers to be multiplied. The blended space is formed by locating these two spaces with respect to one another in a way that it is possible to see the total extent of the sum of the extents of space. The blend is run by reading the product as a number on the scale at the adequate place. In this case, a specifically designed device is manipulated to compose the blend because it is impossible to imagine these conceptual relations with sufficient stability and precision to run the blend making use of mental resources alone.

Fig. 2.1: a standard slide rule.



Finally, with regard to the constructicon, the present approach is largely overlapping with a cognitive-linguistic perspective on the repository of linguistic units outlined in §2.1.1, but in a way more encompassing. Here I am endorsing a view of the inventory of linguistic units of a language as constituting a network made up of both grammatical and lexical constructions, which include both abstract schemas and their concrete instantiations as well as less productive, more idiosyncratic structures (cf. Croft 2001). All these constructions are connected via formal and/or semantic/pragmatic links, and these connections can vary a lot in terms of strength and properties, depending on the tightness of the links between the constructions. Moreover, since the linguistic system is seen as part and parcel of a larger cognitive system, linguistic constructions will be also linked to conceptual, social, cultural, and emotional aspects which are not necessarily crystallized in specific linguistic expressions. Also, in the present view they can also be linked to some external devices, like inscriptions. Indeed, while the way a specific construction is written may intuitively be seen as part of its structure, strictly speaking it is not. Rather, it is a material artifact which is part of a socio-cultural system which developed at a historical time-scale, and to which the relevant linguistic unit is associated as a result of a learning process which takes place in ontogenesis. The case of writing underscores the fact that language is contiguous with other cognitive processes in its use of objects of the external world (like in the case of the slide rule for mathematical reasoning summarized above).

### 2.3.2. *The role of lived temporality*

As outlined in the previous section, here language is conceived as a distributed resource which is tightly integrated with the physical as well as socio-cultural world. From this perspective, language is a constantly evolving system, fluid and fuzzy. Linguistic interactions are therefore driven by the interplay of formal, semantic, and contextual factors, which leads to the formation of relatively stable linguistic symbols. The meaning of these linguistic symbols arises through usage as a material device and constrains the dynamics of future interactions. At the same time, in actual usage they underdetermine the message being conveyed, with the rest of the communication being supplied by the context (see Rączaszek-Leonardi and Kelso 2008; Croft 2009). As noticed above, the context includes locally available bodily and environmental resources as well as the social, cultural, and historical background shared by the interlocutors.

Therefore, the linguistic system is seen as emerging over time through the constant interaction of intentional agents and the environment, in a self-organizing fashion. This observation encompasses two complementary accounts of the nature of language. On the one hand, as underlined by Fusaroli and Tylén (2012: 104), “Language is a skilful, joint activity through which interlocutors attune to each other and the task at hand co-constructing a shared cognitive niche.” On the other hand, as pointed out by Port (2010: 306), a particular language is “a partially structured system of conventions created by a community of speakers and refined over generations. It is a technology developed by a community for coordination of behavior.” From this perspective, the role of time can hardly be overestimated: just as life itself, language displays both a synchronic and a diachronic dimension (e.g. Labov 1963; Lehmann 1985; Ohala 1989; Croft 2000) - neither of which can be neglected in order to provide a thorough explanation of linguistic phenomena - and evolves through the integration of different time-scales (see Pedersen and Steffensen 2014 on the inseparability of space and time in interactions; cf. also Thibault 2011, 2014).

It is possible to identify two major factors in the study of linguistic phenomena: the linguistic item and the (population of) speaker(s). The relationship between these two factors can only be considered with reference to the dimension of



individuality/collectivity. As a result of this intersection, there can be four objects of study<sup>26</sup>:

- the individual linguistic construction for the individual person;
- the repository of linguistic constructions for the individual person;
- the individual linguistic construction for the social group;
- the repository of linguistic constructions for the social group

A linguistic construction will have a certain formal, semantic/pragmatic, cognitive, and affective value for each speaker, and it is highly unlikely to find two speakers for which this value completely overlaps. The same consideration holds for the construction as a whole: each individual has their own repository of construction, which is not likely to completely overlap with that of any other speaker. Nevertheless, a certain degree of overlap with regard to each linguistic construction and the construction as a whole must exist among the members of a community, in order for linguistic interactions to effectively take place. Therefore, it is possible to assert that each construction has a certain value which is collectively shared by a social group, and the same can also be said of the construction as whole.

In a nutshell, the process of language change at the individual level can be summarized as follows: a speaker's network of interconnected constructions is slowly, but constantly re-shaped through each usage-event. Thus, an individual's linguistic system can be seen as arising from the complex interaction of formal, semantic, pragmatic, cognitive, affective, socio-cultural, and contextual forces which operate during experiences of language use. Each linguistic event contributes to an accumulation of small changes which slightly modify a speaker's construction-network (see Bybee and McClelland 2005). For instance, we may posit that the individual speaker habitually recognizes and uses a linguistic construction. Then, they experience the same construction used in a different way or another construction used in the same way (e.g. Campbell 2004; Blythe and Croft 2010; Croft 2010). Initially, it represents something unusual, but after repeated exposure to the new construction the speaker may end up using both constructions or the same constructions in both ways. At this point, there are two possibilities: one of them will eventually die out, or both

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<sup>26</sup> Although I acknowledge this is an oversimplification, this classification seems to be functional enough to my purpose (at least for the time being).

will be retained. In the latter case, one of the two will probably undergo a process of specialization (see Campbell 2004).

The same dynamics apply at the social level, where language can be conceived of as a network of interconnected individual construction-networks, strictly interrelated to the other facets of human cognition. Public language structures adapt to the cumulative impact of the complex interaction of the factors which shape each linguistic event (e.g. Blythe and Croft 2010; Bybee 2010: ch. 11). It is not the case that each linguistic event has the same weight in the spread of language change though, as several kinds of factors come into play (cf. Cameron and Deignan 2006). This scenario highlights the importance of lived temporality in the world: language, cognition, society, culture, etc. are inherently dynamic processes which develop and evolve over time (see Cowley and Steffensen forthcoming). Therefore, their description requires the adoption of an adequate theoretical perspective and set of analytical tools. In the present contribution, I will adopt a dynamic-systems approach, arguing that the combination of precision and flexibility offered by Dynamic Systems Theory represents an ideal framework to carry out a plausible analysis of linguistic phenomena, and, in the specific case of the present study, to deal with the emergent patterns of Italian idioms. The adoption of such an approach is consistent with a view of language as inherently dynamic and interrelated with other cognitive and socio-cultural processes, as well as with its evolution as a result of the agent-environment interaction at different time-scales. In the following chapters, the characterization of language dynamics provided above will be re-framed in dynamic-systems terms.

As specified at the very end of ch. 1, when I spelt out the reasons for my choice of corpus data as a source of information, I am aware that my data could provide only minimal information about the social context of the occurrences and the evolution of idioms over time, as is often the case with corpus-informed studies (especially when taking a large number of tokens into account). However, the recognition of the diachronic dimension of the social and ecological dynamics of linguistic facts and their role in shaping them helps the analyst to capture their nature as primarily collective phenomena, which is one of the main tenets of the distributed-ecological perspective on language and cognition. As such, it allows the analyst to apply this

approach to the analysis of corpus data, interpreting the results taking into account the insights obtained in other studies which more directly address the role of context in linguistic events<sup>27</sup>. The application of a distributed-ecological approach to corpus data represents an attempt to take a step toward the much needed integration between different methodological traditions in the study of language and cognition.

#### 2.4. Concluding remarks

In the present chapter, I outlined the broader framework which represents the theoretical backbone of the present study. In §2.1, I briefly overviewed the origins and principles of Cognitive Linguistics and introduced the key notions which I am going to employ in my study. In §2.2 I focused on Langlotz's investigation of idiomatic constructions, a study which represents an important reference point for the present thesis. Finally, in §2.3, I introduced a more distributed perspective on the study of language, an encompassing perspective which can integrate the insights of a less mainstream position in Cognitive Linguistics, in the direction of a more ecologically-oriented perspective. I argued that the adoption of such an approach emphasizes the primacy of the collective dimension of language, and the nature of language as part of a complex ecology.

In the next chapter, I am going to provide a detailed introduction of the dynamic-systems approach I am going to apply in the empirical part of my study: first, I will briefly outline the origins and basic notions of Dynamic Systems Theory; then, I will review some cases in which dynamic-systems approaches were successfully applied to the analysis of cognitive and linguistic phenomena; finally, I will illustrate how I am going to apply a dynamic-systems approach to the study of Italian idioms.

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27 See e.g. Cowley et al. (2004); Enfield (2011); Worgan and Moore (2011); Cowley (2014a, 2014b); Enfield and Sidnell (2014); Pedersen and Steffensen (2014); Torre (2014).

### 3. Dynamic Systems Theory

In the previous chapter, I introduced the general background which represents the theoretical backbone of the present thesis. First of all, I outlined a series of principles and notions inherited from the cognitive-linguistics tradition, which are going to be employed in my analysis of Italian idioms. At the same time, I specified that in the present study I am going to adopt a less mentalist and more distributed view, which conceives of language as a manifestation of (physically as well as socio-culturally) situated human action and interaction. In this chapter, I will argue that Dynamic Systems Theory represents an ideal framework to account for the emergent patterns of Italian idioms and, more generally, linguistic phenomena, given its balance between precision and flexibility. In the following lines, I am going to introduce this framework and provide an overview of the structure of the present chapter.

Dynamic Systems Theory (DST henceforth) is a branch of pure and applied mathematics<sup>1</sup>, which focuses on the study of those systems whose state evolves over time, according to the interaction of their present state and some “rules of evolution”, which define their historical path<sup>2</sup>. Together with Dynamic Modeling, DST constitute the field known as Dynamics (Van Gelder and Port 1995: 12-13). DST has been applied to study phenomena in a wide range of different sciences, including, in the last decades, cognitive science (whose main reference point probably remains Port and Van Gelder 1995; cf. also Tschacher and Dauwalder 2003). Recently, it has been seriously taken into consideration by linguists working within emergentist frameworks (see Ellis and Larsen-Freeman 2010a for a survey), which are rising as an alternative to the mainstream generative paradigm. Even though DST has traditionally been an object of study of mathematicians, physicists, and engineers, a DST model can be designed and applied to the study of a chosen phenomenon without having a very strong mathematical background (cf. Van Geert and Steenbeck 2005). Actually, one of

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1 It should be noticed that in the fields of mathematics and physics it is generally called *Dynamical Systems Theory*. In cognitive science, both labels can be found. I shall opt for the shorter solution, following some of the most influential publications in the field, e.g. Thelen and Smith (1994); Van Geert (1994); Kelso (1995).

2 The effects generated by these rules are usually called “dynamics”.

the most influential scholars who applied DST in cognitive science, Esther Thelen, was not (by her own admission, see Thelen and Bates 2003: 378-379) an expert in mathematics, and her DST model for the study of cognitive development (e.g. Thelen and Smith 1994; Thelen 1995a) does not rely on a strictly mathematical background. On the other hand, I cannot neglect the fact that the core notions which characterize DST, like “system”, “trajectory” “attractor”, “basin of attraction”, “phase space”, etc. find their origin in the field of mathematics; therefore, it seems sensible to devote some time to a (very) brief outline of the theoretical roots and the nature of DST. Since a thorough, comprehensive description of the mathematics at the core of dynamic systems would be beyond the scope of this thesis, in the present chapter I will not be going deep into this topic, but see Beer (2000) (the text on which the exposition in §3.1 is partly based) for a brief outline and Norton (1995) for a more strictly mathematical introduction. Ward's (2002) collection of short chapters and the glossary at the end of Port and Van Gelder (1995) can also be very helpful tools to move one's first steps in the “maze” of DST.

In §3.1, I will briefly summarize the nature of the framework and its basic terminology. In §3.2, I will outline the reasons to adopt a dynamic-systems perspective in the study of human cognition, also outlining its connection with the Embodied Cognition paradigm. In §3.3, I will briefly illustrate some examples of the successful applications of dynamic-systems models in the study of cognitive phenomena. In §3.4, I will outline the adoption of dynamic-systems approaches in some branches of the language sciences, focusing in particular on metaphor studies. In §3.5, I will briefly illustrate the way I am going to apply a dynamic-systems approach to the study of idiomatic constructions. In §3.6, I will introduce the idea that language could be more generally seen as showing a fractal structure. Finally, in §3.7 I will provide some concluding remarks.

### **3.1. DST: nature and basic terminology**

A “dynamic system” can be described as a system of connected and interactive elements in constant flux. A system can be loosely defined as “some collection of

related parts that we perceive as a single entity.” (Norton 1995: 45); what makes a system *dynamic* is the fact that its state changes diachronically. The “state” of a system is described by a set of variables that may change as a function of time. Choosing a value for these variables thus captures a “state”. Each state can thus be conceived of as a characterization of the system in a particular moment. The set of all the possible values these variables can take is labeled “phase space” (or “state space”), the space of points whose coordinates completely specify the model system. These changes in the elements and in the relation between elements can be described by making use of sets of differential equations, i.e. mathematical equations which relate some function with its derivatives<sup>3</sup>. The interaction between distinct differential equations in the same set defines a “vector field”, which specifies a direction and a magnitude of change to each point in the space. The sequence of states generated by the dynamics is called a “solution trajectory”, and the set of all possible trajectories is labeled the “flow”. Over time, the set of trajectories eventually ends up in a small subset of the state space called “attractors” (all nearby trajectories converge to the attractor, so that small perturbations away from the attractor will return there). An attractor is surrounded by a set of points converging to it over time. This set of points is labeled “basin of attraction”. A general description of the attractors and the basins of attraction of a system is called a “phase portrait”.

Two important notions in DST are those of “order parameter” and “control parameter”. The former label denotes a combination of variables that summarizes the individual variables that can affect a system. The latter notion refers to the parameter to which the behavior of the system is sensitive and which moves the system through different collective states. While most of the time changes in the parameter will have a little effect on the dynamics of the system, when a certain value is reached the dynamics of the system will undergo a qualitative change, causing the appearance of a new equilibrium. This is called “bifurcation” point, and illustrates how strong the effect of a parameter on the phase portrait of a system can be. When the stability of an

3 A derivative is the rate of change of a function with respect to one of its variables. A (relatively) simple example of differential equations is the following, which describes a simple kind of limb motion:  $m(d^2x)dt^2 + d(dx/dt) + k(x-x_0) = 0$  specifying “simple harmonic motion in terms of the mass,  $m$ , times the acceleration,  $(d^2x)dt^2$ , the damping,  $d$ , scaling the velocity,  $(dx/dt)$ , and the spring's stiffness,  $k$ , proportional to the distance from the neutral position,  $x_0$ , of the mass”. (Port 2002: 1028)

equilibrium breaks down, causing the system to jump from a state into another, we speak of a “catastrophe” (Zeeman 1980). Whenever such a change causes the system to drift from an attractor to another, a “phase shift” has occurred (Haken 1983, quoted in Thelen 1993: 564)<sup>4</sup>. One of the remarkable characteristics of a dynamic system is its “sensitive dependence on initial condition”, whereby an infinitesimal change in the initial condition leads to a marked difference in the trajectory of the system over time, contributing to the unpredictability of individual trajectories. Systems whose trajectories are unpredictable because of because small errors in the location of the trajectory leads to exponentially errors at later times are said to be undergoing “chaos”. Although not all of these notions will be used in the present study, they have been introduced as the bare minimum terminological arsenal of DST (for details on the mathematical description of dynamic systems and their application in artificial intelligence, see e.g. Beer 1995a, 1995b).

There are several physical objects which are often taken as instances of dynamic systems, like the pendulum (e.g. Kelso 1995; Port 2002), the steam engine (e.g. Van Gelder 1995; a view criticized by Chemero 2009), the solar system (e.g. Norton 1995; Van Gelder 1995), the nervous system (e.g. Kelso 1995; Norton 1995; Beer 2000; Port 2002; Chemero 2009), the capitalist system (Norton 1995), and many more. In order to understand the functioning of a dynamic system, the all-important concept of “self-organization” comes into play: the system organizes itself, with its components collaborating to create synergetic patterns synchronized in time and extending exponentially over large distances in space (see Kelso 1995: 8). Crucially, the notion of self-organization allows theorists and analysts to do away with the modular view according to which information from different subsystems is sent to a central component devoted to do the organizing job similar to the Central Processing Unit (CPU) of computers (see §3.2 below): the constant, mutual interaction between the components of any system provides for the functional working of the system itself<sup>5</sup>.

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4 This mechanism is to some extent reminiscent of Lightfoot's (e.g. 1979, 1997, 2010) notion of “catastrophic change” in language acquisition and evolution. Nevertheless, the view of complex systems as dynamically evolving as a result of the interactive processes which are guided by a principle of self-organization is hardly reconcilable with Lightfoot's nativist conception of language as an internal mental entity whose evolution is driven by a Universal Grammar.

5 This point of view seems convergent with the one often expressed by some cognitive linguists, especially the proponents of the so-called “philosophy of embodied realism”: “Experience is always

It seems now appropriate to introduce the notion of *mathematical* dynamic system, and distinguish it from the concept of *real* dynamic system. While a real dynamic system is any concrete object which changes over time, a mathematical dynamic system is “an abstract mathematical structure which can be used to *describe* the change of a real system as an evolution through a series of *states*” (Giunti 1995: 550, italics original). As Giunti points us out, if the real system evolves on *deterministic* basis<sup>6</sup>, then the mathematical system will include three elements: a set  $T$  representing time, a (nonempty) set  $M$ , representing the phase space of the system, and a set of functions  $\{g^t\}$ <sup>7</sup>, which let us know the state of the system at any instant  $t \in T$ , as long as we know the initial state. Therefore, as Giunti (1995: 551) explains, “if the initial state is  $x \in M$ , the state of the system at time  $t$  is given by  $g^t(x)$ , the state at time  $w > t$  is given by  $g^w(x)$ , etc.” There are two conditions the functions in the set  $\{g^t\}$  must satisfy: 1) the function  $g^0$  must take each state to itself, because the state at time  $0$ , when the initial state is  $x$  obviously is  $x$  itself; 2) the composition of any two functions  $g^t$  and  $g^w$  must be equal to the function  $g^{t+w}$ , since the evolution up to time  $t+w$  can be thought as two successive evolutions, one up to time  $t$  and the other up to time  $w$ . It is crucial to recognize the difference between the real dynamic system and the mathematical abstraction which describes it. In the first case, we refer to a real evolving object in the world, while in the second case we are not. As Giunti (1995: 550) reminds us, “only real dynamic[al] systems actually *undergo* change; mathematical dynamic[al] systems are timeless, unchanging entities which can nevertheless be used as models of change in real systems.” (italics original).

In order to understand the functioning of a dynamic system and the relevance of its adoption to describe cognitive phenomena, I will now briefly outline Tuller's (2007) experimental study on learning the phonology of a non-native language. Tuller underlines that some non-native distinctions are easier for adults to learn than others,

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an interactive process, involving neural and physiological constraints from the organism as well as characteristic affordances from the environment and other people for creatures with our types of bodies and brains.” (Johnson and Lakoff 2002: 248). See Rohrer (2007) for an overview of this approach.

6 This is the case with the kind of systems I am going to address in this study: as will be briefly discussed in §5.3.1, they will turn out to be both deterministic and non-linear.

7 It should be noticed that Giunti's (1995)  $M$  and  $\{g^t\}$  correspond to Beer's (2000)  $S$  and  $\Phi$  respectively: often, it is possible to observe some notational variants.



according to the level of similarity of the normative sounds to the native ones. The easiest contrast to discriminate are those that do not assimilate to any native language category. The scholar assumes that this inverse relation may be explained by conceiving of prototypical sounds in the native language as attractors, which cause acoustically similar tokens to be perceived as member of the same linguistic category. She points out that young adults with similar language backgrounds exhibit significant differences in the ability to discriminate difficult non-native speech sounds, even after identical language training. This difference may be attributed to the context of their individually existing perceptual abilities.

The initial hypothesis of the study is that an explicitly dynamic framework may be beneficial for exploring and modeling the process of phonological learning, where phonological categories are conceptualized as attractors in a dynamic system that evolves as learning proceeds. The dynamic system is itself initially structured by the native phonological system as it is instantiated in individual learners. In such a system, phonological categories are conceived of as attractors and the reliable perception of new phonological categories means the emergence of additional attractors. For instance, there are ranges of acoustic parameter variations within which the perceptual form remains (relatively) stable, but in other ranges even small variations in the acoustic parameter can cause remarkable changes in the categorization of the input and the changes are hastened in the presence of noise. At these critical values, the existing variation(s) lose stability and the observed behaviors may change gradually or abruptly as new attractors form (showing a bifurcation).

Given that normative sounds can be perceived in more than one way, and the strategy used is largely determined by the individual learner's perceptual abilities, Tuller investigated whether the initial attractor layout (i.e. the structure of an individual's initial perceptual space) has predictive value in determining whether the space reorganizes to include a new, non-native speech sound, how this organization occurs over time (smoothly or entailing a bifurcation), and whether the reorganization is based on the same information for different learners. A sample of monolingual American English speakers were trained to learn to perceive the difference between the voiced alveolar plosive consonant /d/, which is phonemic in English, and the

voiced dental plosive consonant /d/, which is not<sup>8</sup>. While a group of subjects simply failed to learn the difference after the training (non-learners), the data on those who succeeded in the task enabled Tuller to distinguish them into two distinct categories: phonological learners and acoustic learners. The former learned to distinguish the two sounds by learning what constitutes a phonological category, whereas the latter learned to discriminate between them on the basis of an increasing sensitivity to acoustic differences. Both phonological and acoustic learners perceived a non-native distinction reliably.<sup>9</sup>

The results raised an issue about how to define categories and understand how they form, problems on which there is no consensus among theoreticians. Tuller proposes that a dynamic, nonlinear approach may help to integrate continuous and discrete descriptions, within a common framework which in turn may elucidate how new phonological categories form. Perceptual learning for non-native speech sounds is viewed as a process that modifies the existing dynamic system. This perspective allows predictions about how learning will proceed depending on how the stimuli are initially perceived by the individual learner and may lead to individualized strategies for enhancing learning. Operationally, the progressive stabilization of an attractor corresponding to a new phonological form and whether or not a bifurcation is observed during learning is dependent on the initial perceptual landscape. It is now important to emphasize that Tuller's (2007) study represents an example of the many studies which tackle linguistic phenomena by proposing specific hypotheses and then testing them empirically (see e.g. Fowler and Housum 1987; Fowler 1988; Fowler and Saltzman 1993; Tuller et al. 1994; Sancier and Fowler 1997; Fowler et al. 2003; Dale and Spivey 2005; Nam et al. 2009; Richardson et al. 2009). Nevertheless, as will be illustrated in §3.4, there is another strand of language studies which exploits DST as a source of convenient metaphors to conceptualize linguistic phenomena. My study falls within the latter category. I will return on this distinction at the end of §3.5 below, where I will also summarize the role of my study in a collective construction of a dynamic-systems approach to language.

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8 The major articulatory distinction between these two sounds is in place of articulation: in /d/ the tongue tip is placed against the alveolar ridge, while in /d̪/, the tongue tip is against the upper front teeth.

9 See also Tuller et al. (2008); Nguyen et al. (2009).

After outlining the nature of dynamic systems and listing some of the technical terms which are likely to be found in the literature about DST, it is now time to move on and see why and how DST can be of any theoretical interest in the study of human cognition in general, natural language at an intermediate level, and idiomatic expressions in particular. Since it might be less than obvious that such a theory can play any role in a study on Italian phraseology, in the next few sections I will explain the rationale for its adoption in the present study in a step-by-step fashion.

### **3.2. Living downstream: the dynamic challenge in cognitive science**

Since the 1960s, the field of cognitive science has been dominated by a research paradigm that is related to the Computational Theory of Mind, a theoretical approach (philosophically rooted in Cartesian rationalism) which considers cognitive processes as computational activities which operate on amodal mental representations. In other words, this approach sees cognitive functions as processes of manipulation of abstract symbols carried out by the mind, a computational device which happens to be physically implemented in the brain. This rationalist orientation involves the adoption of the so-called “mind as a computer” metaphor, which can be represented by the following proportion:

$$(1) \quad \text{mind} : \text{brain} = \text{software} : \text{hardware}$$

From this point of view, cognitive processes can thus be analyzed independently of their physical realization, since their nature is considered to be independent of their physical correlates.

This kind of approach to the study of cognition was proposed and adopted by several among the most influential academics in the field of cognitive science. Among these leading scholars, we can mention the American philosopher and psychologist Jerry Fodor, who argued for the existence of an innate mind-internal code, endowed with an expressive potential comparable to that of a natural language, in which thought processes are carried out and whereby the output of perception is coded

(Fodor 1975). Furthermore, he also introduced the concept of the modularity of mind, according to which mental processes have a modular nature: the mind comprises several airtight “modules”, which are specialized, encapsulated systems which elaborate the output of perceptual systems and transmit an output to higher intellectual faculties (Fodor 1983).

Although the computational approach can still be considered as the standard paradigm, in the recent decades an alternative framework known as Embodied Cognition arose. It is a research program developed in the last decades by scholars working in the different disciplines which constitute the cognitive science field. These scholars reject the view of the human mind as a piece of computer software, claiming instead that cognition emerges from the interplay of our brains, our bodies, and the world (see e.g. Varela et al. 1991; Lakoff and Johnson 1999; Thompson and Varela 2001; Pecher and Zwaan 2005; Clark 2008)<sup>10</sup>. In other words, it is shaped by our daily experience as embodied agents in constant interaction with our physical and sociocultural setting (e.g. Gibbs 2005). As a result, scholars involved in this research program emphasize the fact that cognition is moulded by the bulk of situations experienced in everyday life by actively taking part in the functioning of a biocultural environment (e.g. Sinha 2009). In recent years, this basic assumption has come to be supported by a substantial body of converging evidence from the various branches of cognitive science, and theories of Embodied Cognition have grown stronger and stronger (see Gibbs 2005; for a critical assessment, see Shapiro 2010).

It is in the context of the rise of this alternative approach that the emergence of the DST hypothesis in cognitive science can be better understood (see e.g. Smith 2005 for an overview)<sup>11</sup>. While the traditional computational view takes cognition to be independent of the context, the recognition of its situatedness is unavoidable in order to understand cognitive processes as taking place in a precise span of time and in a precise point in the world. This implies the recognition that cognition cannot be

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10 Embodied Cognition is not the first challenger to the computational view, which has repeatedly had to face the “threats” of Ecological Psychology (see e.g. Gibson 1979; Gibson and Pick 2000) and Connectionism (see e.g. McClelland and Rumelhart 1988; Elman 1993), which are close allies of Embodied Cognition.

11 Schöner (2008: 102) goes as far as to describe DST as “the theoretical framework within which the embodied view of cognition can be formalized”, and an implementation of this idea can also be found in Hotton and Yoshimi (2011).

confined inside the skull, but should rather be seen as the result of the constant interaction of a multiplicity of mutually influencing factors. Obviously, such a perspective cannot be independent from an understanding of the body as playing a major role in determining cognitive states and processes. Extending this brain-body interaction to the external environment is not such a big step to be taken, considering that our lives are inevitably tied to the specific physical and sociocultural setting we live in. This point is clearly underlined by Esther Thelen:

Since a major developmental task of infancy is gaining control of the body, cognition is thus embodied as its origins deal with actions of the body in the world. Thus, since the processes of perceiving and acting and the processes of thinking continue to share the same time-scale dynamics, they cannot be separated in levels. Mind and body are united at the beginning of life and nowhere along life's path do their processes split asunder.

(Thelen 1995a: 72)

In technical terms, it can be said that an intentional agent is coupled to its environment, with which it engages in an ongoing historical process of interplay which leaves both poles altered (cf. Johnson 1987). Or, in more colloquial terms, I may just say that we are all living downstream: an (eco-)system which self-organizes on the basis of the non-linear interaction of interdependent elements, whose effects are never completely predictable, with a wide variety of solution trajectory plausible to be encountered.

As underlined by Thelen (1995a: 71), the main claims that are made by supporters of a dynamic approach to cognition can be synthesized by the title of Port and Van Gelder's (1995) edited book, *Mind As Motion*. From a dynamic perspective, the human mind should no longer be seen as the "container" of a set of symbolic representations, but as a *process* which develops over time. This point of view implies that cognition cannot be considered as a merely intracranial affair, but rather the role of context should always be taken into consideration, since cognitive processes never occur in isolation. It follows that the longstanding principles of the computational approach to cognition come short. First of all, the dualism between body and mind makes little sense, in this perspective. It is an organism as a whole who experiences the events of life, with no clear-cut separation between physical and mental events. The human mind never works outside the context of a particular human brain and particular

human body, and the influence between mind and body is mutual, rather than flowing in a top-down direction only. Also, the environment interplays with the organisms, in a constant dynamic interaction where the two poles shape each other. Therefore, not only does a DST approach to cognition do away with the body-mind dualism, but it also takes organism and environment to be coupled, thus together constituting a single system. From this point of view, the mind is constantly molded by the bulk of interactions that an individual (i.e. an intentional agent), takes up with the surrounding physical and sociocultural environment. This implies that it is engaged in a continuous evolutionary process, and that it cannot be considered as including a set of static representations.

It also follows that there are no such things as internal, amodal representations. A dynamic-systems approach does away with the postulation of abstract mental entities which “refer” to some object in the external world. Rather, the mental level is always tightly interconnected to the material world, since basic mental properties like knowledge, categorization, attribution and extension of meaning are inherently dynamic, emerging from everyday perceptual, sensory, and motor experiences in the world. As Esther Thelen points out,

All is process, all is emergent. Consciousness, imagination, beliefs, and desires are coequal with reasoning and language, and all are as much part and parcel of human neural activity as is movement or perception.

(Thelen 1995a: 74)

The acquisition of new information via experience will be integrated with the knowledge already present in the system, through the process of self-organization. As already specified above, it follows that the concept of modularity of the mind can be completely abandoned: the system does not need to be divided into different modules dedicated to the processing of a particular kind of stimuli, then organized by a central processor; the ongoing interplay between the elements of the system is sufficient to guarantee the system's functioning and its ability to self-repair and survive substantial damage or perturbation.

### 3.3. Empirical evidence and theoretical implications

A paradigm-shift in the field of cognitive science seems to be a rather improbable scenario, at least in the short-term period. Indeed, the dynamic alternative still has to a long way to go to become able to compete with the dominant computational approach, in terms of spread<sup>12</sup>. Nevertheless, in the mid-90s, when a series of important publications were released and DST was at its zenith, such a shift seemed to be possible. Even though at present the possibility of a paradigm-shift from a computational to a dynamic framework remains an unfulfilled promise, during the last decades a considerable amount of empirical evidence has been brought to the fore which argues in favor of an explanation of cognitive phenomena in terms of dynamic self-organization, rather than symbolic abstract representations. A branch of cognitive science which has clearly benefited from the adoption of a DST approach is developmental psychology (see e.g. Thelen and Smith 1994; Van Geert 1994, 1995; Thelen 1995a; Lewis and Granic 2000; Thelen et al. 2001; Fraley and Roberts 2005; Steenbeck and Van Geert 2007, 2008). While a comprehensive survey of the most influential developmental studies carried out adopting dynamic models can be found in Van Geert (2003)<sup>13</sup>, I will now briefly outline two studies which address different phenomena relevant to the study of human development, just to specify the nature of the contributions made by DST in developmental psychology.

#### Developmental psychology

In their paper on the adequacy of the adoption of DST in developmental psychopathology<sup>14</sup>, Granic and Hollenstein (2003) provide an outline of the principles underlying dynamic approaches and briefly explain how this kind of modeling can be useful to provide an account of data in this field based on the notions of emergence,

12 The reader is referred to Van Geert (2011) for an explanation of the concurrent reasons why most developmental psychologists are not keen on taking a DST stance on cognition, preferring to stick to computationalism.

13 More concise outlines of the DST approach to development are provided in e.g. Smith and Thelen (2003) and Howe and Lewis (2005). See Witherington (2007) for an outline of the two big different metatheoretical approaches to the application of DST in the study of development.

14 A review of dynamic systems approaches in this field is offered in Granic (2005). The increasing influence of DST models in developmental psychopathology is also acknowledged in Cicchetti and Toth (2008).

non-linearity, and variability in time, carefully describing the dynamic methodology and indicating suitable data to be analyzed. Furthermore, they outline some of the models used by prominent DST scholars working in developmental psychology, arguing that they are often superior to the (many different) models most often used in the study of psychopathologies. On the other hand, they do not fail to point out some limits of these techniques in psychopathological studies; then, they introduce and elaborate on a particular dynamic model, which seems to obviate to the fallacies of other models, thus resulting especially adequate to be applied in this area of research. This model is labeled *State Space Grid analysis*, and represents an intersection point between mainly mathematical and prominently descriptive dynamic models. The main property of its model is its flexibility, which allows researchers to link real-time and developmental-time patterns, identifying both individual and group differences. The specific assets of this particular model, however, are beyond my interests here. What is relevant to my purposes is that DST seems to be able to provide scholars with theoretical tools and operational machinery adequate to find satisfactory answers which previous approaches were not able to provide. Granic and Hollenstein (2003: 665) underline that the strength of a DST approach to the study of psychopathologies allows clinical researchers to address issues related to “heterogeneous change processes which may underlie treatment progresses and outcome.” Also, dynamic models seem to be able to offer research methods able to capture the complexity, diversity, and temporality of developmental mechanisms, thus allowing researchers in this field to observe target phenomena from different angles.

I will also outline a paper by Smith and Brazeal (2007), who argue that the essential characteristics of human intelligence can only be understood taking into consideration the dynamic nature of development. The authors introduce and discuss three principles which are supposed to guide the growing process. The first one is the coordination of heterogeneous sensorimotor processes. The authors show, as an example, that the possibility to interact with an object influences the visual attention process in children, improving the coordination between their vision and reaching. In addition, they show that direct exploration of the affordances of an object favors categorization. Being coupled, vision and action create a self-organizing system. The



second principle is the coupling of one intelligent being to others, since development takes place in the social environment. The authors show that this social embeddedness is manifest in sensorimotor coordination: because “one's bodily actions also influence the internal states of others, one's own actions are also (albeit indirectly) linked to the internal states of others.” (Smith and Brazeal 2007: 65). The third principle regards the fact that during development, organisms solve many overlapping tasks, often dealing with them in a specific sequence, which has an important developmental function. For instance, the authors point out that in typically developing children, hearing and the coordination of hearing and vision seem to play an organizing role in the development of visual attention. In deaf children, vision attention develops without audition, resulting in altered processes of visual attention, including greater sensitivity to motion and as a consequence may be both more sensitive to some kinds of information. Thus, development builds on itself through the self-organizing consequences of the interactions of many components: each of those interactions leaves a sign on the components and on the system as a whole; by so doing, it constrains possible future development.

#### Other branches of cognitive science

Apart from the studies carried out by developmental psychologists, DST has proved a useful framework in several other areas of cognitive science, and some work is ongoing in always new fields. In this section, it seems useful to introduce some of the achievements of the development and application of dynamic systems models in the study of different aspects of cognition. Again, what follows is just the summary of a handful of studies carried out in the last decade, in order to provide the reader with an idea of the impact DST had (and may have in the future) on the world of cognitive science, and it is absolutely not meant to represent a comprehensive state of the art<sup>15</sup>.

Drawing on a Gibsonian background, Warren (2006) adopts a DST approach to the

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15 To have an idea of the application of DST principles in a wide range of areas of cognitive science, the reader is also referred to the following studies: Kelso (1984); Stolorow (1997); Yashikawa and Hsueh (2001); Haselager et al. (2003); Buckley et al. (2004); Lewis (2005); Fogel (2006); Granic and Patterson (2006); Ferrer et al. (2007); Jantzen et al. (2008); Spencer and Schöner (2008); Renshaw et al. (2009); Naeem et al. (2012).

study of perception and action, whose aim is to demonstrate that human adaptive behavior emerges from the interaction between an intentional agent governed by control laws and a structured environment governed by physical laws: the agent is supposed to regulate their action on the basis of the perceptual information drawn from the environment. In Warren's view, exhibited behavior can be conceived as a trajectory in the state space of behavioral variables, where attractors correspond to goal states. In his study, Warren describes the behavioral dynamics of locomotion in a complex, changing environment, formalizing a dynamic system with a vector field corresponding to the observed behavior<sup>16</sup>. Not only does Warren's model prove successful in describing the ability of human beings to steer to a stationary goal and avoid obstacles, but it is also able to portray the subsequent process of formation and selection of routes, which emerges as a result of embodied experience in the environment. Thus, Warren's model shows that human locomotor paths can be described in terms of dynamic perception-action loops. As a consequence, behavior can be seen as arising through a process of self-organization: ordered states emerge spontaneously under specific contextual conditions. As Warren specifies, from this perspective, the adaptation ability consists in learning a task-specific mapping from perceptual information to control variables that serves to stabilize behavior over a range of conditions, in a self-organizing manner. At the end of his paper, Warren also envisions some possible extensions which may enable his model to provide an account for higher-level functions.

One of the most profitable fields of application of DST in cognitive science is neuroscience. On the basis of the results of studies on the dynamics of brain and behavior, Kelso (2008) provides a DST theory of mental activity, conceived as constituted by meaningfully coupled self-organizing processes. The central idea is that “minds, brains, and bodies (...) immersed as they are in their own worlds, (...) share a common underlying dynamics.” (Kelso 2008: 183). Kelso's account pivots on the notion of “metastability”, i.e. it portrays the functioning of the mind as regulated by

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16 Warren's model can be synthesized by the following equation of motion:  $\dot{e} = \Phi(e, f) - \Psi(a, i)$ , where  $e$  is a vector of environmental state variables,  $f$  is a vector of external forces,  $a$  is a vector of agent state variables, and  $i$  is a vector of informational variable. The environment is governed by the law of physics  $\Phi$ , while an action is some function of the current state of the action system together with informational variables, according to the law of control  $\Psi$ .

the simultaneous realization of two competing tendencies: the tendency of individual parts of the brain for coordinated activity (integration) and their tendency to work independently (segregation). This persistent tension gives rise to rhythms and synchronies at different levels of neural organization, which show patterns of behavior arising as emergent results of the interplay among neurons and neural populations, and this synergy is posited to underlie cognitive, affective, behavioral, and social functions. Thoughts are supposed to emerge and disappear as the result of patterns of interaction between distributed neural sets, and between the agent and the environment, and their content is supposed to depend on the neural structures activated. In a synergetic fashion, neural ensembles in distinct parts of the brain oscillate at different frequencies, and these oscillations are coupled together into a network, which gives rise to mental activities. Thoughts are thus conceived as relative phases between oscillating brain areas. Phase relationships carry meaningful information with multiple attractors, setting alternatives for complementary aspects to enter the mind. Kelso suggests that the persistence of a thought is determined by the stability of the phase relationships underlying them. At some point, thoughts switch, as a result of the same self-organizing process of phase shifting described in §3.1. From this perspective, the mind is thus constantly “in motion” (cf. Port and Van Gelder 1995).

At the end of this very brief review, I would like to emphasize the fact that the importance of the dynamic challenge in cognitive science is also witnessed by psychologists working on motor control. The emergence of Embodied Cognition, including DST approaches, as an alternative to computational cognitive science, has shed new light on a range of cognitive phenomena neglected after the rejection of behaviorism (in favor of other cognitive functions like thought and memory), putting them at the center of the study of human cognition again. As an example, the cognitive psychologist David Rosebaum underlines that, together with the growing cooperation between psychologists and neuroscientists,

Another reason to expect motor control to become more popular in psychology is the emergence of ecological psychology and dynamic[al] systems analysis. Advocates of ecological psychology argue that the primary function of perception is to guide action (...) and that the control of action enlists rather than resists physical properties of actor-environment

couplings (...) Advocates of dynamic[al] systems analysis seek to describe ongoing cycles of perceiving and acting in the form of differential equations (...). The advent of the ecological and dynamic[al] systems perspectives has fostered the analysis of classes of behavior that were left out of the research portfolio of traditional cognitive psychological research...

(Rosenbaum 2005: 314)

The choice of a quote which groups dynamic and ecological approaches together is not chance: in ch. 1 I underlined that Ecological Psychology represents a source of inspiration for the present study. Ecological Psychology and DST can be seen as close allies, as testified by the fact that several scholars work in both frameworks. Ecological Psychology can actually be seen as offering a theoretical background to DST: in fact, as concisely resumed by Hutchins (2010: 709), J.J. Gibson claimed that psychological processes could only be understood in terms of the dynamic coupling between the organism and the surrounding environment. Thus, this approach focuses on cognitive phenomena as properties of the whole agent-environment system. In order to understand perception, one must understand the properties of the world to be perceived; to understand action, one must understand both the motor systems and its interactions with the world. As a consequence, it was perhaps unavoidable that a symbiotic relationship developed between Ecological Psychology and the dynamic systems approach to cognition (see Turvey and Carello 1995), with dynamic system theorists borrowing theoretical notions from Ecological Psychology, and ecological psychologists adopting the methodological tools of DST.

A second framework which is tightly linked to the rise of DST in cognitive science is Connectionism. While at the beginning the two approaches were conceived as rivals (see e.g. Thelen and Smith 1994: 39-42), in the last fifteen years the divergences between connectionists and dynamicists have grown thinner and thinner, and today these two approaches can be seen as allies rather than opponents (see e.g. Elman 2003; Thelen and Bates 2003). As Smith and Samuelson (2003) concisely pointed out, DST and Connectionism can be seen as the two sides of the coin of the emergentist challenge to the dominant computational paradigm. These two approaches share the belief that cognition is “an emergent phenomenon, grounded in lower, simpler, and non-symbolic processes” (Smith and Samuelson 2003: 434). Furthermore, Connectionism and DST make use of similar mathematical tools, which sometimes

result in models which can be seen as both connectionist and dynamic (e.g. Elman 1995, see §3.4 below). These two enterprises differ in several aspects, but these differences are mostly due to the theoretical goals of the scholars: connectionists focus more on modeling the process whereby an organism learn, over repeated exposition, the regularities in interactions with the environment, whereas dynamicists are more concerned with the role of the body-world interactions in shaping cognition. This means that the results of one approach can integrate those of the other. Collaboration between scholars working in the two framework are more and more frequent (e.g. McClelland et al. 2010). Taking this (relatively small) amount of background into consideration, we can now move on to consider how DST can contribute to the study of linguistic phenomena.

### **3.4. A DST approach to the scientific study of language**

Although the first applications of DST to the study of language date back as far as the late 1980s and early 1990s (see e.g. Van Geert 1991; Tuller et al. 1994), it is only recently that DST has begun to make its way into linguistics. Nowadays, more and more scholars working within a functional-cognitive framework have identified the potential of DST in accounting for linguistic phenomena more plausibly than can be done by more established approaches<sup>17</sup>. In the present section, I will provide an outline of the significance of the adoption of a dynamic perspective in the study of language: first, I will review some more theoretically-oriented work; then I will briefly outline some of the results of the application of DST in metaphor studies.

Elman's (1995) paper represents one of the most influential characterizations of language in a DST framework. Elman asserts that while traditional accounts rely on a mechanistic, code-like view according to which language includes a list of lexical items on which a series of algorithmic rules operate to derive grammatical structures, it would be more plausible to conceive of language as a dynamic system characterized

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<sup>17</sup> The branch of linguistics where dynamic-systems approaches have been received most heartily is second language acquisition, where in the last ten-fifteen years a considerable amount of studies have been carried out adopting a DST approach (e.g. Ellis and Larsen-Freeman 2006, 2010b; De Bot et al. 2007; Larsen-Freeman 2007; De Bot 2008; Ellis 2008; Van Geert 2008; Veerspor et al. 2008; Spoelman and Veerspor 2010; Zheng 2012).

by fluidity, fuzziness, emergence, and context-dependence. Using a connectionist network, Elman provides a plausible alternative to the dominant perspective on language understanding, based on the constant interaction of several syntactic, semantic, and contextual factors and the sequential nature of language production (cf. Bergen and Chang 2005; Ettliger 2005; Mok and Bryant 2006; Torre 2011: §3.3). Since a linguistic event always takes place over time in a specific context, Elman argues that these dimensions should be taken into consideration when modeling language. Simulations carried out training the network to make predictions of each next word in a sentence resulted in the network learning to generalize over linguistic items on the basis of repeated experience in a way which is extremely similar to the performance of human subjects: the network was successful in the vast majority of tasks to generalize its performance to new sentences, and when it did not perform successfully, it made mistakes at a rate similar to the rate at which humans make errors. The results of Elman's studies suggest that lexical items would better be seen as regions in a phase space, large enough to include the different senses and facets a lexical item can take in different discourse and situational contexts. At the same time, grammatical rules are best seen as attractors, which tend to drag lexical items in a certain syntactic construction, a view which is consistent with the basic principles of Construction Grammar introduced in §2.1.2.

While several studies strengthen Elman's claims, (e.g. Browman and Goldstein 1995; Petitot 1995; Tabor et al. 1997; Elman 2004, 2011), Rączaszek-Leonardi and Kelso (2008) briefly sketch what may be seen as a “manifesto” of a dynamic-systems approach to language studies. The authors assert that linguistic symbols underdetermine the message is being conveyed, while the rest of the communication is supplied by the context, proposing that this underdeterminacy is the source of the efficiency of language. Symbols represent dynamic variables regarding the coordination between agents and environment (cf. e.g. Tomasello 1999): in any situation, it is possible to find many stable patterns, whose process of selection determines the emergence of symbols. Thus, symbols are awarded informationally important ranges of values of dynamic variables. Information can be seen as a result of the system's metastable coordination dynamics. There is an interrelation between

meaning components and the interaction of their time-scales: between language evolution and quicker process of communication, there are events which happen in ontogeny, creating pressure on the selection of symbols (see also Rączaszek-Leonardi 2009, 2010, 2013). Another basic tenet of the authors' view is the idea that relations between symbols are as important and meaningful as symbols themselves: Rączaszek-Leonardi and Kelso claim that regularities in linguistic data are surface indication of conceptual dependencies originated by the symbols' functions (see e.g. Langacker 1987, 2008), and that the embodiment of symbols defines meaning as patterns of possible actions (e.g. Glenberg and Kaschak 2002). Symbols are seen as measurements of temporarily stable pattern variables which are exposed to rapid change, and the stability of the mapping of a perceptual situation onto symbols (cf. Barsalou 1999) depends on the trajectory of the system through the phase space, where grammatical relations are seen as relationships between attractors.

Wildgen (2009) aims to show the limits of the Cognitive Linguistics enterprise, outlining how the adoption of a DST perspective can be beneficial for this paradigm<sup>18</sup>. The author claims that, although they advance insightful approximations, often the proponents of cognitive-linguistic approaches fail to provide realistic descriptions of their target phenomena. According to Wildgen, this situation is due to the fact that Cognitive Linguistics inherited the structuralists' tendency to describe language in static terms, neglecting its inherently dynamic and multifaceted nature. According to Wildgen, complexity and self-organization should be seen as inherent properties of language. From this point of view, DST offers the principles and the tools to provide an account of linguistic phenomena at different levels of morphosyntactic intricacy. In the author's view, a proper cognitive analysis needs to bridge models of perception, motor-control, memory, senso-motoric imagination, and the environment, requiring the adoption of an interdisciplinary approach which takes this dynamic interaction as its starting point.

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<sup>18</sup> While Wildgen's paper is highly technical, in my short summary I will provide a simplified and hopefully more reader-friendly explanation.

DST approaches to the study of metaphors

Drawing nearer to the topic of the present study, I will now consider the adoption of DST approaches to the study of metaphoric language, which is still rather limited, but seems to be growing rather fast. In this field of studies, Cameron and Deignan (2006) take a stand with a ground-breaking piece of work. Adopting an emergentist perspective on the analysis of discourse dynamics, the scholars argue that, since language and thought represent the two interacting components of a single complex system, metaphor emerges from the interplay of language and thinking, thus having both a conceptual and a linguistic status. In addition, the rise of particular forms of metaphor is motivated by pragmatic and socio-cultural aspects of metaphor in use. The foremost contribution supplied by Cameron and Deignan is the notion of “metaphoreme”: a bundle of stable formal, conceptual, affective, and pragmatic constraints which crystallize around a metaphor, and which emerge as a result of the dynamics of language use between individuals. A metaphoreme is supposed to work as an attractor toward which the actual use of the corresponding metaphor tends. The effectiveness of this approach is shown by applying it to the analysis of metaphor use in both online speech events and corpus data. It is claimed that a traditional Conceptual Metaphor Theory approach (e.g. Lakoff and Johnson 1980, 1999; Sweetser 1990; Lakoff 1993; Yu 2003; Gibbs et al. 2004; for an inclusive overview, see Kövecses 2010a) only analyzes metaphor from a top-down perspective (i.e. how conceptual metaphors shape the use of linguistic metaphors), taking into consideration only cognitive and linguistic aspects of the phenomenon; instead, a DST approach also deals with the bottom-up dimension of the phenomenon (i.e. how actual use of language influences conceptual mappings, cf. Slobin 2003), thus including explanations at the socio-pragmatic level (for broadly converging observations made on the basis of results of corpus-based studies, see e.g. Deignan 2006; Semino 2006; Wikberg 2008).

An example of metaphoreme provided by Cameron and Deignan (2006: 678-680) is the use of *baggage* to refer to mental and emotional complications. This metaphorical use of *baggage* is becoming relatively fixed, as a quantitative analysis of its occurrences in a corpus shows; indeed, they show stable patterns at three distinct,



though interrelated, levels. Lexico-grammatically, they tend to be pre-modified by adjectives and/or quantifiers, and/or verbs. Conceptually, they reflect the combination of the two metaphorical concepts LIFE IS A JOURNEY and EMOTIONS/FEELINGS/HISTORY ARE/IS A BURDEN. Pragmatically, metaphorical *baggage* is consistently used to express a negative view of past emotions and memories. Thus, the metaphoreme <*baggage*> is the bundle of stabilizing formal, semantic, pragmatic, and affective patterns in the metaphorical use of the word, together with its possibilities for variation. Cameron and Deignan suggest that,

(...) metaphoremes emerge at some stage through online processes (...), in which individuals in interaction choose and adapt their language resources to express and understand particular meanings. Through multiple on-line events, certain linguistic forms evolve to become the preferred ways of expressing metaphorical ideas across discourse communities. The language and the conceptual content stabilise, together and co-adaptively, into a particular restricted set of forms and ideas that become part of the resources of language and thinking available in the discourse community.

(Cameron and Deignan 2006: 80)

Building on Cameron's (2007) discussion of data collected in a longitudinal study in the use of metaphors in the reconciliation talk between a former I.R.A. member and the daughter of the victim of a bombing attack, Gibbs and Cameron (2008) adopt a DST approach to provide a discourse-based account of the use of metaphors in the dynamic interaction between two people who share an experience, even though from different (and, initially, contrasting) points of view. Gibbs and Cameron (2008: 74) assert that conceptual metaphors can be seen as “basins of attraction, in the phase space of the talking-and-thinking of a discourse community, which emerge from many different forces, ranging from neural to cultural, and are not fixed, stable entities encoded in the minds of individuals.” From this point of view, metaphors are language uses which are soft-assembled in the flow of talk: through the process of emergence, systematic metaphors function as attractors in the trajectory of the talk, which returns to the basin of attraction with each re-visiting of the topic in terms of one or other of the connected vehicles. The authors underline that one of the main assets of DST is that it allows the analyst to provide an account of metaphor use at different *levels of granularity* (face-to-face conversation, socio-cultural groups, and the larger speech community) and *time-scales* (from an online speech event to the evolution of the

interaction between speakers over time) making use of the same principles and notions, a point already highlighted by scholars working in other fields of cognitive science (e.g. Van Gelder 1998: 617)<sup>19</sup>.

Replying to Steen's (2008) claims that a distinction is needed between so-called "deliberate" and "non-deliberate" metaphors, Gibbs (2011) makes a case for the extension of the description of self-organizing cognitive systems to metaphoric language use. Drawing on a body of psycholinguistic evidence, Gibbs highlights the importance of understanding that automaticity in behavior should not be equated with the absence of a rich and structured conceptual knowledge. On the other hand, Gibbs also highlights that everyday behaviors (including the production and understanding of metaphors), triggered by contextual cues, are performed with limited conscious awareness, and are shaped by several unconscious forces which are not accessible to our conscious intuitions. Consequently, Gibbs (2011: 46) suggests that "human actions are the emergent products of self-organizing processes whose structure is not imposed from outside forces or from internal blueprints (i.e. internal mental representations)." From this perspective, DST also allows cognitive linguists to reject the traditional distinction between "novel" and "conventional" metaphors, providing a unified account for them (see Müller 2008 for a book-length introduction to a broadly compatible point of view). Gibbs (2011: 48) then concludes that there is no clear-cut distinction between "automatic" and "conscious" linguistic processes, since "every act of speaking and writing, listening and reading, emerges from a whole system of brain, body, and world interactions that make up our unfolding experiences across time."

This point of view also lays at the roots of Gibbs and Colston's (2012) critical evaluation of the many models of how people understand figurative language which have been proposed by linguists, psychologists, and philosophers in the last decades. As the authors show in an extensive review, it seems to be a rather desperate enterprise to look for a single model able to account for the production and understanding of figures of speech and their interaction. In contrast, they propose that the strict dichotomy *literal vs figurative* language should be abandoned, in favor of a looser criterion which avoids lumping different tropes together, and consider the

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<sup>19</sup> I would also add that the same principles and notions can be applied to both qualitative and quantitative studies, two kinds of analysis which may be best conceived of as complementary.

metaphoricity/metonymicity/idiomaticity etc. of a linguistic expression as a matter of degrees. Coherently with a DST perspective, the authors also argue for the adoption of a more inclusive theoretical approach which describes the multiple interacting influences that shape people's experiences of figurative meaning in discourse. From this viewpoint, Gibbs and Colston's observations converge with Thelen and Smith's (1994) recommendation to take variation as the starting point, “the essential ground for exploration and selection”, and use variability patterns as relevant data to be included in empirical analyses.

### 3.5. How do idioms fit in this picture?

The fruitful application of dynamic-systems approaches to the analysis of linguistic phenomena in general and to metaphor studies in particular suggests that a dynamic-systems perspective can be extended to the analysis of other, related kinds of figurative language. Especially interesting for me, dynamic-systems approaches have the potential to account for systematicity and variation in idiomatic expression. As a result the principles of DST may be adopted to complement and strengthen Langlotz's model (§2.2) with a more explicitly interactional dimension. A dynamic-systems approach seems to be sufficiently encompassing to provide a uniform explanation to a wide range of cognitive phenomena, and should be able to integrate the useful notions offered by Langlotz's model into a more robust theoretical framework. First of all, a DST approach is basically in line with Langlotz's conception of

the base-form of an idiom (i.e. an idiom's context-independent default structure that is distilled from various usage-events) as a probabilistic co-occurrence pattern, which corresponds to a specific form or in some cases to a cluster of forms (which are found significantly more often than others).

(Langlotz 2006a: 177)

However, Langlotz's definition seems to be too narrow, since it just focuses on linguistic aspects of an idiomatic construction. Therefore, in a dynamic-systems perspective, it seems reasonable to pursue the direction pointed by Cameron and Deignan (2006) when they defined the “metaphoreme”, finding a corresponding

notion for idioms. I would like to propose the “idiomatic cluster” as the attractor which emerges as a result of the constant, non-linear interaction of linguistic, cognitive, affective, and socio-cultural factors in actual language usage events. The idiomatic cluster of an idiomatic construction is made up of two poles: one related to the form of an idiom, and the other related to its meaning. The former, which can be basically equated with Langlotz's definition of base-form quoted above, would include the lexical and grammatical constructions which are most often empirically retrieved in the occurrences of an idiom (see §5.1.2). The latter would include the conventional meaning of the expression, which is defined by the interaction between the motivation patterns described by Langlotz (metaphor, metonymy, blending, and emblems), together with the category to which the idiom is allocated in Langlotz's typology and the particular semantic, pragmatic, cognitive, affective, and socio-cultural values associated with the expression. The idiomatic cluster may include several possible structures, which may differ in terms of their attractive force.

#### Two interdependent levels of granularity

It is now possible to have a closer look at how (at least some of) the DST notions introduced in §3.1 can be sensibly applied to the analysis of idiomatic expressions. Following Langlotz, from now on I will adopt the *type/token* distinction often adopted in linguistic studies (see e.g. Bybee 1995, 2003): I will use the term *type* to refer to an idiom, and the word *token* to refer to each usage-event. Here, it seems reasonable to focus on two levels of granularity: a “single-type” level, regarding the single idiomatic expression, and an “inventory-of-types” level, dealing with the whole set of idioms available in a certain linguistic system<sup>20</sup>.

As for the former, a type can be seen as the *dynamic system*, while each particular token represents a *state*, with the (potentially infinite) set of possible uses constituting the *phase space*. The combination of all the observed tokens is the system's *solution trajectory*, with all possible evolutions of the form and meaning of a type representing the *flow* of the system. Moreover, the idiomatic cluster defined above plays the role of the *attractor state*, and the motivation patterns described by Langlotz (i.e. metaphor,

<sup>20</sup> Cf. also Steels's (e.g. 2007) distinction between microscopic and macroscopic levels of language.

metonymy, blending, and emblems) function as *basin of attraction*<sup>21</sup>. The point at which an abrupt change brings a newly emerged attractor state to compete with the pre-existing attractor, causing a loss of stability in the common properties of a relatively standard usage of a type (metastability), is the system's *bifurcation point*. If such a change is so abrupt as to cause the system to suddenly abandon the old attractor, directly converging to the new one, I shall refer to it as *catastrophe*. Finally, the drifting process of the standard usages of a type toward different common properties represents a *phase shift* in the system.

Turning to the *inventory-of-types* level, it seems reasonable to say that the same principles can be applied to this level as well, at a much coarser-grained level. Here, the whole set of types which are present in the linguistic system of a language can be seen as a *dynamic system*<sup>22</sup>. Any established use of an idiom at the *single-type* level is a *state*, while all these possible states constitute the *phase space*. The amount of all tokens of all idioms represents the *solution trajectory*, and the set of all possible trajectories is the *flow*. The common properties of standard usages among different types in the set constitute an *attractor state*<sup>23</sup>, and the set of properties which converge toward the attractor over time represent the *basin of attraction*. The attractor and the basin of attraction then constitute the *phase portrait* of the system in a certain moment, while the points in which a new attractor competes with a previous one is the *bifurcation point*, whereas when a strong perturbation causes a system to move from an attractor to another one, is called *catastrophe*, and its result is the *phase shift*.

In the light of what said in this chapter, it goes without saying that the two levels just introduced are not independent from each other; on the contrary, they are regulated by a principle of “causal circularity”. (Kelso 1995; Deacon 2003): on the one hand, a change in a single type influences the state of the inventory; on the other

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21 It is important to emphasize that the basin of attraction of the single-type level is constituted by the motivation patterns themselves, and *not* by their interaction, which instead is part of the idiomatic cluster.

22 This “set of idioms” is to be seen as fluid and constantly exposed to variation. Moreover, there is no clear-cut distinction between idiomatic and non-idiomatic expressions; rather, every single expression can be conceived as a node in a dynamic network of constantly interactive elements, with different levels of schematicity/specificity (see below).

23 In other words, the attractor state of the system at the inventory-of-types level represents the characteristics shared by all the idioms of a language at a given time. In a sense, it may be seen as temporarily defining what constitutes an idiomatic construction in that language.

hand, the evolution of the inventory exerts a constraining power over the changes of a single type over time. It is also relevant to specify that, in a DST perspective, both levels can be found at multiple social levels, which again stand in a relation of mutual influence (see §2.3 above). The single usage-event will have some kind of impact on the participants, which can be stronger or weaker according to cognitive and affective factors. In turn, the amount of interactions which take place everyday will have a cumulative effect on the linguistic habits of a community. The latter, at the same time, will constrain the future interactions of each participant. Again, it is possible to observe the principle of causal circularity in action, at two different levels: not only does the routine constrain the interaction while at the same time the interaction shapes the routine, but also the linguistic life of an individual shapes that of the community, while the latter constrains the former.

#### *Metaphorical vs operational uses of DST: a clarification*

In the previous sections, I outlined a few studies which made use of the dynamic-systems framework in several branches of cognitive science, ranging from developmental psychology to the study of figurative language. By now, the DST has been adopted and applied in psychology and neighboring disciplines for over thirty years, including in the analysis of linguistic phenomena. In particular, during recent years the exploration of language as a dynamic system has been sensibly intensifying (see Fowler et al. 2008 for an overview). In most of these studies, the application of DST included careful operationalizations, which allow the analysts to put forward concrete hypothesis and empirically test them: the studies illustrated in §3.3 above, as well as Tuller's (2007) experiment summarized in §3.2 and the other work referenced in that section, are instances of this kind of studies. The view of language as a dynamic systems has also recently been adopted to formulate concrete and testable predictions in the field computer simulations, which is proving a valuable resource to understand the evolution of language in social systems (e.g. Cangelosi and Parisi 2002; Smith et al. 2003; Galantucci 2005; Steels and Belpaeme 2005; Cangelosi 2010; Rączaszek-Leonardi 2012).

At the same time, there is also a different way to apply DST to the study of

language. Indeed, DST is a powerful source of concepts which can be used metaphorically to organize a specific research domain and systematize research programs. While this requires an intuitive grasp of concepts such as time-scales, attractors, stability etc., it does not require strict operationalization. The lack of quantitative predictions and practical measurement does not make the theoretical and empirical weight of metaphorical applications of DST less substantial, though. As a matter of fact, in certain cases, adopting DST metaphorically is a necessity: there are several aspects of the study of language where empirical clarity is still far from being reached; as a result, it is necessary to use DST as a metaphor rather than as a set of methodological tools, in order to encompass the numerous factors which should be taken into consideration in the analysis of certain linguistic phenomena. In other words, there are aspects of language where narrative coherence is still to be reached, before specific and testable quantitative predictions can be made. The metaphorical use of the notional apparatus of DST is therefore often a crucial step on the way to future operationalizations, since it allows to partition a phenomenon into analyzable parts and establish a correspondence between dynamic-systems notions and the aspects of the phenomenon under study.

In the light of the distinction between these two possible uses which can be made of the notions offered by DST, my investigation of Italian idiomatic constructions can be seen as closer to the latter type of studies<sup>24</sup>. The only direct attempt at operationalization will be observable with regard to Research Question 3, which I will answer by providing a systematic model of the structure and variability of Italian idioms by making use of dynamic-systems notions in combination with the descriptive concepts of Cognitive Linguistics. Nevertheless, while I will attempt to demonstrate that the view of language as a dynamic systems is suitable to provide a detailed description of the nature of Italian idioms and the way Italian speakers use these constructions in actual usage events, I will not be adopting the mathematical machinery of DST to propose and test any quantitative predictions. My use of DST will instead be mostly metaphorical, aimed first and foremost to provide a consistent

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24 So far, this is a tendency which is also shared by other scholars who are trying to establish a connection between Cognitive Linguistics and DST (see e.g. Dörnyei 2010; Pleyer and Winters 2014), though there are a few exceptions (e.g. Doursat and Petitot 2005).

account of the structure of Italian idioms and the tendencies displayed by these constructions in use, proposing a way in which these two aspects are interrelated. The main aim of my thesis is to illustrate, by means of a comprehensive analysis of Italian idioms, that it is possible to establish a fruitful connection between DST and Cognitive Linguistics, an approach which is increasingly entering the mainstream in linguistic theory and in recent years has begun to recognize the nature of language as a social as well as psychological entity (see §2.3 above). From a DST perspective, this would be my contribution in the direction of a collective construction of a dynamic-systems approach to language, an enterprise which has been underway for more than three decades and, though still far from complete, is growing fast.

### 3.6. A fractal architecture for language

In this section, I will introduce the idea that language may display a “fractal” structure. Since language is not a self-contained faculty, but it is part of the extended human ecology, idiomatic networks (and, more generally, the construction and the subnetworks it can be divided into) also include links to extra-linguistic aspects of cognition, society, and knowledge of the environment. As I have already mentioned, these networks evolve dynamically as a result of agent-environment interaction at multiple different scales of lived temporality. All these considerations seem to point in the direction anticipated in §2.3: since language is contiguous and interdependent with other cognitive, social, and ecological process, influenced by both its historicity and the situated context, it appears reasonable to describe linguistic, cognitive, social, and environmental processes as interconnected dynamic systems, in turn constituted by a network of massively interrelated dynamic systems. In other words, it would be possible to describe language as a constitutive element of an integrated human ecology which displays a self-similar architecture, which for the sake of description can be fragmented into an indefinite number of components displaying the same structure as the whole. In his introductory textbook, David Feldman provides a very accessible definition of what a *fractal* is, followed by a simple concrete example:



Fractals are objects which are self-similar. Small parts of a fractal look like larger parts. For example, a tree is a fractal, since if you break off a branch of the tree, it resembles the tree in miniature. In contrast, a person is not a fractal; an arm does not look like a small copy of the person. A person is not self-similar, but a tree is. Fractal objects are characterized by their fractal dimension which, very roughly speaking, is related to their degree of branching and the extent to which the feature at successive scales are related.

(Feldman 2012: 4)

In other words, a fractal object is composed of several parts, which include a global representation of the whole and will, in turn, be made up of parts which display the same structure. Another example of a fractal object is the cauliflower, see Fig. 3.1 below.

Fig. 3.1: the cauliflower, a natural fractal object.



Conceiving of language as a fractal, nevertheless, may seem an arbitrary interpretation. After all, language is not a tree, a cauliflower, or any other object whose structure is directly observable, and identifying the “branches” which make up language is not as straightforward as it is for visible objects like trees or cauliflowers. In order to make sense of the conception of language as a fractal, let us consider idiomatic constructions again. An idiomatic construction can be seen a member of a specific class of linguistic constructions, which share some common traits. Actually, the class of idioms can be fragmented into smaller groups like above-mentioned idiomatic networks. While these represent networks inside a network, and therefore they share the same structure as the whole, it is less clear what it means for a *single* idiomatic construction to display the same structure as the networks it is part of. Nevertheless, I have argued above that the single idiomatic construction and the whole inventory of idioms of a language resemble each other in the mechanisms which drive

their emergence and evolution; also, I have repeatedly stated that they interact at multiple time-scales and levels of granularity (which will be a leitmotif in the present study). This interaction is driven by the principle of causal circularity, whereby structure and behavior influence each other, with the former constraining the latter while simultaneously the latter re-shapes the former. It is the simultaneity and the bi-directionality of the interaction which defines the similarity between a single idiom and the inventory of idioms (and its several possible subsets).

As specified above and will be made clearer in ch. 4, the inventory of idioms represents a part of the constructicon, which has a network-shape<sup>25</sup>. The nodes in the repository of linguistic units constantly interact with other nodes in a nonlinear fashion: as specified above, each node can be said to have its own network made up of all the idiomatic constructions it interacts with, and in turn will be part of the networks of other idioms. Therefore, each node in the network will be interconnected with several other nodes within and across different networks, on the basis of their contiguity. The links between different constructions can differ with regard to their nature and/or intensity and these connections can be strengthened or weakened over time; they may also die out, and new ones may emerge. Moreover, the constructions which are part of these idiomatic networks are also connected to other (non-idiomatic) linguistic constructions, and to other aspects of human cognition like, for instance, processes of thought or knowledge of the world.

While this assertion may seem to refer to the individual dimension only, it also works at the many possible collective levels: a group of people share a certain set of values with regard to a specific linguistic construction. The same observation can be made to objects of the world which do not belong to the realm of language. Moreover, the boundary between cognition inside and outside the brain is overcome by the use of environmental resources, which are available for both individual and collective use. This observation brings together language, mental resources, embodied experience, cultural heritage, social organization, and physical environment, which dynamically interact at different time-scales. As a consequence, it is possible to observe a highly

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25 By making reference to Feldman's example quoted above, it seems plausible to argue that networks can be considered as similar to trees, as they can be cut into branches which show a similar structure to the whole object. Several studies in the Construction Grammar tradition graphically depict networks in this way (see e.g. Croft 2001; Hollmann 2003; Tomasello 2003).

complex ecology, which seems to display a fractal architecture.

At this point, a caveat is necessary: the self-similarity of the structure is not regular. While the analyst may like to have the component parts of an object to perfectly resemble the whole at all levels and at all time-scales, this is not how objects and events in the real world present themselves. In the real world, phenomena like precision and symmetry are the exception rather than the rule. Consequently, as noted by e.g. Van Orden et al. (2003), it will only be possible to find a rougher, irregular self-similarity. However, the irregularity in the self-similarity does not call its existence into question, it only highlights once more the nonlinearity of the system (cf. §5.3.1 below). More importantly, it does not undermine either the validity of the principles which govern interactive processes or the adequacy to adopt the basic of notion of DST to explain real-life phenomena. On the contrary, these mechanisms prove able to explain the evolutions of the systems at multiple time-scales and levels of granularity, independently of the precise shape the systems and its component takes at a specific moment and level.

Now, it seems relevant to emphasize that this perspective on the architecture of language is not peculiar to my study (though it is not widespread in the field of linguistic theory). Even though the study of fractal patterns in language is still limited in its diffusion, several experimental studies carried out in the fields of psychology and psycholinguistics by scholars who adopt a dynamic, ecological perspective, support the hypothesis that certain aspects of language display a fractal structure at distinct intervals of measurement (Van Orden et al. 2010). Among the phenomena empirically investigated by these researchers, it is possible to mention reading fluency (e.g. Colangelo et al. 2004; Wallot and Van Orden 2011a; Wallot et al. 2012), word pronunciation (e.g. Holden 2002; Kello et al. 2008; Holden et al. 2009), and second language acquisition (e.g. Lowie et al. 2014). Other aspects have also been investigated, also from distinct and complementary perspectives (see e.g. Turvey and Moreno 2006 for a theoretical essay on the self-organizing nature of the mental lexicon, Wallot and Van Orden 2011b for a case-study on body-language coordination, or Tabor et al. 2012 for a computational model of language learning and parsing). The existence of these studies is consistent with a more and more pervasive presence of

fractality in the more general field of cognitive science, especially within the paradigm of Ecological Psychology, where fractal patterns have been investigated in a number of distinct phenomena, including the emergence of cognitive functions (e.g. Kello et al. 2007); sensorimotor functions (Kello and Van Orden 2009), child development (e.g. Dixon et al. 2012), coordination (e.g. Wijnants 2012), and subjective experience (e.g. Blau et al. 2013), *inter alia* (see also Kello et al. 2010).

The concept of fractality and its connections with the present piece of work will be briefly revisited at the end of each of the next chapters. Now, I will conclude the present section mentioning a distinction which is important in the study of fractals in cognitive phenomena, with particular reference to the relationship between fractality and time-scales. While processes can be observed at a single time-scale for specific purposes, time-scales interact and are constantly integrated: they appear as a fractal unity rather than as isolated tiers (see Steffensen and Pedersen 2014). This unity is efficiently captured by the concept of “multifractality”, which is opposed to “monofractality.” While the notion of monofractals denotes the fractal scaling of a phenomenon at a single time-scale, multifractality captures a process in its nonlinear interscalar contingency. In other words, it is possible to say that multifractality can be used to describe the nature and structure of a given phenomenon emphasizing the importance of its evolution in time and the mutual influence between the processes which take place at different time-scales<sup>26</sup>. What is more, multifractality can be helpful in providing a comprehensive explanation of how synchronic situations come into being.

### **3.7. Concluding remarks**

In this chapter, I introduced the DST framework. First of all, I briefly overviewed its nature and its basic terminology. Then, I discussed the relevance of its adoption in cognitive science, providing a series of examples from distinct fields of study where it

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<sup>26</sup> While a detailed introduction to multifractality would be out of place here, the reader is referred to Kelty-Stephen et al. (2013) for a comprehensive step-by-step tutorial on this powerful concept, inclusive of the mathematical laws which describe multifractal systems and an in-depth discussion of the theoretical and empirical reasons to adopt a multifractal perspective in the study of interactivity in the human ecology.

actually proved superior to alternative approaches to supply a description and explanation of various cognitive phenomena. Next, I introduced the theoretical basis for the adoption of a dynamic-system perspective on language and overviewed the application of a few dynamic-systems approaches to the analysis of metaphoric language. On the basis of these results, I then proposed how a dynamic-systems approach may be successfully applied to the analysis of idiomatic constructions. Finally, I illustrated the idea that addressing language as a dynamic system may support the view, proposed by a few scholars, that the linguistic system shows a fractal structure.

In the remainder of my study, I will carry out an investigation of Italian idioms applying the framework introduced in this chapter, at two different levels of analysis. Ch. 4 will be in a sense more “static” and top-down, addressing Research Question 1 and Research Question 2: I will first present a classification of Italian idioms according to Langlotz's parameters and observe what the categorization process reveals about these constructions; then, I will address the mutual relationship between distinct idiomatic expressions, as well as between idioms and other linguistic units, describing their structure in terms of constantly interacting networks. Ch. 5 will be in a sense more “dynamic” and bottom-up, answering Research Question 3 and Research Question 4: first of all, I will illustrate the results of my corpus-informed study and observe the tendencies displayed by a sample of occurrences of real-language data, aiming to describe the variational behavior of Italian idioms in use and evaluate what it tells us about the nature of idiomatic constructions; then, I will show that the two stages of this study are interconnected, and that the adoption of a dynamic-systems approach is useful to fully capture the inter-dependencies between these two levels of analysis, providing a coherent and convenient way to explore and model the data. Finally, in ch. 6 I will conclude the present study discussing the implications of my results and broadening the horizon on the basis of these findings.

## Part II

Empirical analysis:  
a case-study on Italian idiomatic constructions

## 4. The self-organizing structure of Italian idioms

The purpose of the present chapter is to address Research Question 1 and Research Question 2. The former aims to classify a few coherent sets of Italian idioms according to Langlotz's (2006a) model, and to assess how it allows to gain insights into the status of these linguistic units. The latter aims to investigate how the mutual relationship between different idiomatic constructions and between idioms and other constructions can be explained in terms of a dynamic constructionist approach to grammar.

As specified at the very end of ch. 3, this chapter will focus on the more “top-down” stage of my study, aiming to classify Italian idioms into a structured classification according to their dictionary definition. Recalling the *type/token* distinction often made in quantitative linguistic studies, it is possible to say that this chapter focuses on *types*. Adopting Langlotz's (2006a) classification criteria, I am going to organize idiomatic constructions into categories according to the formal features they display and their underlying motivation mechanisms, also taking into consideration the cultural background of (most) Italian speakers. Then, I am going to consider how each idiomatic construction can be seen as connected to other idioms, which represent their idiomatic network, and to other constructions which are part of the grammar of the Italian language.

This chapter will be divided into four sections. In §4.1, I will present the data selection process and the methodology adopted in the analysis. In §4.2, I will introduce my classification of a set of Italian idioms, providing a number of examples instantiating the idiomatic pattern to which they are allocated. In §4.3, I will illustrate the qualitative properties of the connections between an idiom and other (idiomatic and non-idiomatic) constructions, with the aid of examples. In §4.4, I will first summarize the answers to Research Question 1 and Research Question 2; then, I will briefly propose some reflections on the nature of language made throughout the chapter in order to link the present chapter to the following one.

#### 4.1. Data and methodology

In order to draw a cognitively motivated taxonomy of Italian idioms, I made use of Sorge's (2010) *Dizionario dei Modi di Dire della Lingua Italiana*, which includes approximately 6,000 idiomatic expressions of the Italian language, ranging from common, widespread phrases to less frequent figures of speech. Entries are organized according to headwords, which represent concepts the editor sees as particularly salient in each specific idiomatic context. For instance, all the idioms whose salient concept (in the source domain) is “mouth”, are listed under the word *bocca*. For each entry, the corresponding literal meaning is provided and, occasionally, an explanation of the origin of the expression is also offered. While Sorge's dictionary represents a starting point for my study, I needed to restrict the range of expressions in order to arrive to a reasonable number of idioms to analyze. This number was set at 150. Since this task was accomplished following a procedure including several steps, the present section will be split into three subsections. Below, the reader will be guided through each methodological stage of the path which led to the selection of the specific subset of data under investigation in this chapter. First, in §4.1.1 I will outline the choice of five source domains; then, in §4.1.2 I will sketch the selection of two target domains; finally, in §4.1.3 I will introduce the use of a corpus-query which led to the selection of exactly 150 expressions.

##### 4.1.1. Selection criterion 1: source domains

In order to select a coherent subset of idioms to be analyzed in the present chapter, I first selected a group of source domains. I decided to select five semantic fields which are part of human beings' daily experience in the world and which have often been observed as working as source domains for figurative expressions across different languages and cultures, though to different extents<sup>1</sup>. Idiomatic constructions which feature these source domains have long been studied in the field of phraseology as well as theory of language, and the cognitive-linguistic framework has often proved successful to bridge these two disciplines (see Langlotz 2006a): 1) body-parts/body-

<sup>1</sup> For a general overview, see Kövecses (2010a).



related concepts (e.g. Sakuragi and Fuller 2003; Gibbs 2005; Maalej 2007, 2008; Zahedi 2012); 2) religion, mythology, and metaphysics (e.g. Kotzé 2004; Wachowski 2010); tools and objects (e.g. Argaman 2008; Gyula 2010); 4) animal species (e.g. Gibbs 2005; Kövecses 2010b); 5) plants, vegetables, and fruits (e.g. Deignan et al 1997; cf. Kövecses 2010b). Then, I took into consideration all the headwords Sorge adopted to divide the idioms into groups, and I selected those which are relevant to each of the above-mentioned source domain. As an example, the word *braccio* (“arm”) was marked as relevant to the “body-parts/body-related concepts” source domain, the word *corda* (“rope”) was allocated to the “tools/object” source domain, whereas for instance the word *lupo* (“wolf”) was marked as pertaining to the “animal species” source domain.

Above, I specified that the choice of these particular semantic fields was driven by both universal and culture-specific factors, in order to pick domains which include aspects which are part of human experience at a general level, but whose linguistic manifestation shows more culturally-specific traits. The domain including religion, mythology, and metaphysics is probably the one where this dichotomy between universality and specificity applies most clearly; therefore, I will single out this field and devote a few lines to illustrate some idioms whose source domain is related to these field.

Religion, mythology, and metaphysical reasoning appear to be a universal property of the human race, but at the same time the cultural heritage of distinct peoples and/or societies will show different features with regard to religious beliefs, mythological narrations, and metaphysical concepts, according to their history, and these cultural specificities will display in the use of figurative language. Observing Italian idioms, on the one hand, it is easy to notice several expressions which betray a strongly entrenched Christian tradition; on the other hand, it is also easy to observe how some figures of speech display the Classical cultural heritage of Italy. The origins of the constructions exemplified in (1) below are clearly to be found in the Christian roots of Italy, whereas those instantiated in (2) display the Greek and Roman legacy of this country:

- (1) a. Fare il segno de-lla croce.  
do:INF the.MSG sign.SG of-the.FSG cross.SG  
“to make the sign of the Cross”, i.e. to ask for divine help in a difficult or dangerous situation
- b. Addormentar-si in Cristo.  
fall.asleep:INF.REFL in Christ  
“to fall asleep in Christ”, i.e. to die after receiving the last sacraments
- c. Fare il Cireneo.  
do:INF the.MSG Cyrenian.SG  
“to do the Cyrenian”, i.e. to help somebody in a difficult and ungrateful job<sup>2</sup>
- (2) a. Essere il tallone d' Achille.  
be:INF the.MSG heel.SG of Achilles  
“to be the Achilles' heel”, i.e. to be the weak point<sup>3</sup>
- b. Essere la ninfa Egeria di qualcuno.  
be:INF the.FSG nymph.SG Egeria of somebody.M  
“to be somebody's nymph Egeria”, i.e. to be a source of inspiration for somebody<sup>4</sup>

After the selection of the five source domains, I collected the idioms involving these source domains, included in Sorge (2010). This was accomplished by manually looking through the dictionary, selecting every single relevant entry listed under a headword which could be subsumed under one of the above-mentioned semantic fields<sup>5</sup>. This process allowed me to reduce the almost 6,000 idioms in the dictionary to 1,636 expressions. Tab. 4.1 below illustrates how these constructions are distributed according to the five source domains mentioned above: in the left column, there is a list of source domains; in the middle column, the number of idioms realizing that source domain can be observed; in the right column, the percentages related to these figures are provided.

2 The Gospel reports that Simon from Cyrene was forced by Roman soldiers to help Jesus Christ to carry his cross to the Golgotha.

3 According to the legend, the Greek hero Achilles' heel was his only vulnerable point. Paris managed to kill him by piercing it with an arrow.

4 The legend tells that it was the nymph Egeria who inspired King Numa Pompilio's religious and political reformation, in Ancient Rome.

5 As often happens, the appointment of a headword to a specific source domain was not totally straightforward, and sometimes a decision needed to be made which may not be agreed by everybody.

Tab. 4.1: number of relevant entries in Sorge (2010), according to source domains.

Source domain	Number of entries	Percentage
Body-related	704	43.08%
Religion, mythology, and metaphysics	292	17.85%
Tools	272	16.63%
Animal species	257	15.71%
Plants, vegetables, and fruits	111	6.78%
Total	1,636	100.00%

#### 4.1.2. Selection criterion 2: target domains

Since I still needed to substantially reduce the number of idioms to be analyzed, the subsequent step in the selection of the data was the choice of one or two target domains. My decision was again to pick a small set of target domains which can be seen as part of human experience generally but which are also likely to involve culture-specific variation: intellect (TD1 henceforth), and emotions (TD2 from now on). The choice of these two domains is due to the fact that they are among the abstract/subjective areas of experience that have been shown to be often talked about and conceptualized figuratively (e.g. Gaby 2008; Monnet and Langlotz 2014). Indeed, these two areas strongly characterize human experience and, as such, they are likely to be characterized by appealing to figurative language. These two domains may be reasonably be seen as parts of a broader area, which may be labeled “aspects of mind”. While there are surely principled reasons to distinguish the intellectual world from the emotional sphere, there are also cases in which it is difficult to draw a dividing line between the two (see e.g. Ibarretxe-Antuñano 2012); rather, the boundary between them can be better characterized as fuzzy rather than clear-cut<sup>6</sup>.

Here, the two target domains are treated as separate because of the long-standing tradition in Western philosophy that conceives of these two aspects of human life as clearly distinct, a tendency which is also reflected in the (cognitive-)linguistic

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6 In the last decades, several studies in the interdisciplinary field of cognitive science provided a description of the relationship between emotion and intellect which suggests that it may be seen as a continuum. Advances in neuroscience (e.g. Damasio 2000; Berthoz 2006) and the rise of embodied cognition made a significant contribution to narrow the gap between the study of emotion and reason (see e.g. Prinz 2002; Zhu and Thagard 2002; Pecher and Zwaan 2005).

literature on figurative language. It is frequent to find linguistic studies which deal with one domain without delving into the other (e.g. Schnall 2005; Ibarretxe-Antuñano 2008)<sup>7</sup>. In her influential study on the semantic extension of perception verbs, Eve Sweetser makes a claim about the universality of the link between intellectual faculties and the sense of vision by giving explicit reasons to contrast intellect with emotion:

Vision gives us data from a distance. This ability to reach out is a significant parallel between vision and intellection, since the objective and intellectual domain is understood as being an area of personal *distance*, in contrast to the intimacy or closeness of the subjective and emotional domain (we may keep someone at a distance by keeping the conversation intellectual; and if we feel too close to someone, maybe we can no longer be objective about that person).

(Sweetser 1990: 39, italics original)

Although in the last decades the strength of this connection between vision and intellect has been challenged by several (especially cross-linguistic) studies, the reasons mentioned to keep the rational domain separated from the emotional sphere (distance vs closeness) still seem defensible. This point is strengthened by the fact that, recently, Al-Haq and El-Sharif (2008) resumed a traditional view according to which there is a sharp contrast between the rationality of intellect and the irrationality of emotions, which apparently permeate both the English- and the Arabic-speaking worlds, in spite of the fact that these two realities include cultures which are very distant from one another:

Human is considered the only rational and reasonable animal, this rationality characterizes his behavior and action [sic]. Sometimes, we like to describe any bizarre action as an animalistic one to show our viewpoint about the status of the described person. On the other hand, since animals are considered irresponsible beings because of their irrationality, we feel sometimes envy because of their lack of this human character. The animalistic metaphor reflects the pleasure and enjoyment that a happy person experiences when he lives in peace and harmony with his environment without bothering himself with the modern civilization complex ties and conventions.

(Al-Haq and El-Sharif 2008: 9)

To add some linguistic examples, Zoltán Kövecses, in his list of target domains for

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<sup>7</sup> As remarked by Koivisto-Alanko and Tissari (2006), while there is no general agreement on the relationship between these two domains, in the cognitive-linguistic camp they are usually considered as distinct fields (although there are some studies which loosen the distinction, see e.g. Gibbs 2005: ch. 8; Tissari 2006).

metaphors, states that emotions are typically conceptualized and described as forces, whereas rational thought is understood as the manipulation of objects in a workshop or, in case of little active aspects of thought are understood in terms of perception. Below are two examples of metaphors offered by Kövecses (2010a: 23-24, italics original) for each of these target domains in (3) and (4), respectively:

- (3) a. He *unleashed* his anger.  
 b. She was deeply *moved*.
- (4) a. I *see* your point.  
 b. She is *grinding out* new ideas.

As a consequence, the distinction between TD1 and TD2 is kept here as an elegant and convenient criterion to select the idioms to be analyzed, whose number is reduced to the set figure respected the proportion between the two target domains.

Thus, among the 1,636 idioms identified via source domain criterion, I kept only those that express meaning referring to one of the two above-mentioned target domains. This resulted in a total of 285 idiomatic expressions, 70 pertaining to TD1 (24.56%), and 215 related to TD2 (75.44%). In order to have an idea of the distribution of these items across source domains, see Tab. 4.2 below<sup>8</sup>. The rows of the table refer to the source domains mentioned in the previous subsection, whereas the columns refer to the target domains. For instance, you can observe that the body-related source domain features in 35 out of the 70 idioms characterized by TD1, and in 127 out of the 215 characterized by TD2. In total, the body-related source domain can be observed in 162 out of the 285 idioms characterized by either TD1 or TD2. The same can be observed with regard to all other source domains.

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<sup>8</sup> Since I have been approximating the percentages to two decimal numbers, sometimes the sum of their values may not exactly give 100.00%.

Tab. 4.2: number of expressions selected on the basis of their target and source domains.

Target-dom.	TD1		TD2		Total	
Source-dom.	Number	Percentage	Number	Percentage	Number	Percentage
Body-related	35	50.00%	127	59.07%	162	56.84%
Metaphysics	5	7.14%	47	21.86%	52	18.25%
Tools	8	11.43%	19	8.84%	27	9.47%
Animal Species	14	20.00%	17	7.14%	31	10.88%
Plants	8	11.43%	5	2.33%	13	4.56%
Total	70	100.00%	215	100.00%	285	100.00%

#### 4.1.3. Selection criterion 3: questioning the corpus

Summarizing what have been done at present, at the beginning I had the 6,000 idioms included in Sorge's dictionary. Then, I selected only those that instantiate five specific source domains, resulting in a set of 1,636 idioms (§4.1.1). Next, I selected those displaying two particular target domains, further narrowing the figure down to 285 (§4.1.2). At this point, I needed a practical criterion to reduce the number to the target figure of 150. Therefore, I decided to consult the largest Italian corpus currently available, *itTenTen*, which can be accessed via the online corpus-query system *Sketch Engine* (<http://www.sketchengine.co.uk>).

*ItTenTen* includes more than three billion words of Italian crawled from the web. It was created in 2010 as part of the *TenTen* family of new generation linguistic corpora by using innovative strategies (see e.g. Bungum and Gambäck 2012), which include databases of several other languages, like *enTenTen* for English and *deTenTen* for German (for details, see Pomikálek 2011: §3.7). Like other large corpora created by Marco Baroni and colleagues (e.g., *ItWaC*, see Baroni and Kilgarriff 2006), *itTenTen* was built step-by-step according to a methodology which consists of several stages. First, large crawls were carried out in the *.it* domains of the web, looking for both words typical of traditional written media and basic vocabulary items using the open source crawler *Heritrix*. Thus, it contains items of different genres, which range from personal blogs and forums, through news and many kinds of narrative, to academic papers and formal announcements. Later, the data selection was filtered in order to



The lemma-group of this idiom is constituted by the verb *storcere* (“wrench”) and the noun *bocca* (“mouth”). I asked *Sketch Engine* to return all the co-occurrences of the lemmas *storcere* and *bocca* in the above specified word-span, retrieving all the co-occurrences of all their inflected forms.

My next step was to select only those idioms from the set of 285 above whose lemma-group returned at least 50 results. At this point, I was left with 197 expressions: 37 of them could be allocated to TD1 (18.78%), while the remaining 160 could be assigned to TD2 (81.22%). The distribution of these items across source domains can be observed in Tab. 4.3 below, which shows the same structure as Tab. 4.2 above.

Finally, I needed to reduce the number of idioms to 150. Rather than operating a completely random selection, I decided to preserve the proportion between source domains and target domains displayed in Tab. 4.3. Therefore, I picked 28 idioms showing TD1 as a target domain (18.78%), and 122 idioms displaying TD2 (81.22%)<sup>10</sup>. The figure relative to the final selection of 150 idioms can be observed in Tab. 4.4 below. A comparison with Tab. 4.3 should make it clear that, as far possible, I also tried to maintain the proportion between source domains. Since I realize that the steps which led to the final selection of 150 have been many, a summary of the criteria I followed can be found in Fig. 4.1 below.

Tab. 4.3: data relative to the reduction to 197 idioms.

Target-dom.	TD1		TD2		Total	
Source-dom.	Number	Percentage	Number	Percentage	Number	Percentage
Body-related	23	62.16%	95	59.37%	118	59.90%
Metaphysics	3	8.11%	37	23.13%	40	20.30%
Tools	3	8.11%	15	9.37%	18	9.14%
Animal Species	5	13.51%	11	6.88%	16	8.12%
Plants	3	8.11%	2	1.25%	5	2.54%
Total	37	100.00%	160	100.00%	197	100.00%

<sup>10</sup>  $37:197 = x:150$ ,  $x = 28.17 \approx 28$ .

$160:197 = x:150$ ,  $x = 121.82 \approx 122$ .



Tab. 4.4: data relative to the 150 idiomatic constructions selected for the analysis.

Target-dom.	TD1		TD2		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Body-related	17	60.71%	73*	59.84%	90	60.00%
Metaphysics	2	7.14%	28	22.95%	30	20.00%
Tools	3*	10.71%	11	9.02%	14	9.33%
Animal Species	4	14.29%	8	6.56%	12	8.00%
Plants	2	7.14%	2	1.64%	4	2.67%
Total	28	100.00%	122	100.00%	150	100.00%

\*<sup>11</sup>

It is important to underline that both in this chapter and the next one, the source and target domains of idiomatic constructions are *only* used in order to operate a principled selection of the idioms to be included in the set of constructions which represent the database of the present study<sup>12</sup>. Their adoption as selection criteria enabled me to operate a semantically motivated choice, rather than select a completely random sample of idioms from the dictionary; however, this is the only function these notions perform in the present study. I will not be using these notions in the qualitative analysis of the data selected either in the present chapter or the next one. As specified in the previous chapters, the focus of the present study is on other aspects the phenomenon, which are addressed from a perspective which does not make use of the notions of source and target domain.

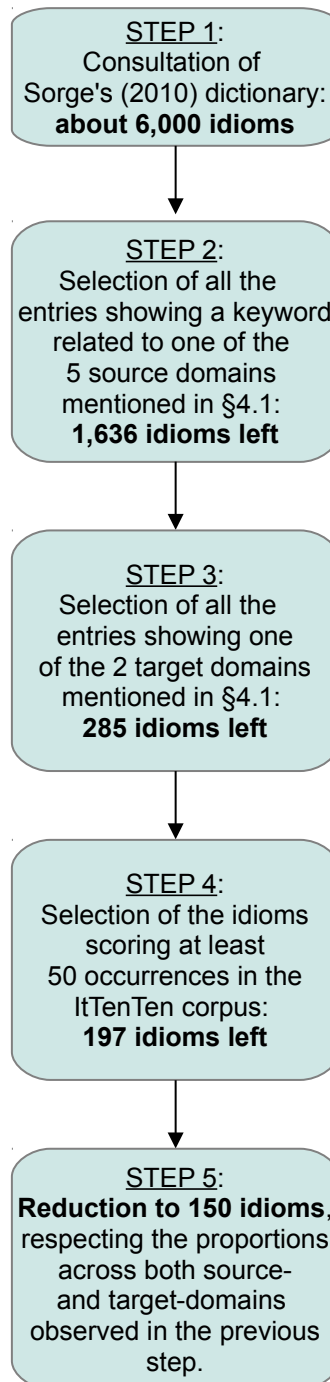
In the remainder of this chapter, I will address Research Question 1 and Research Question 2, in this order. In §4.2, I will carry out an analysis of the selected expressions, using Langlotz's parameters and categories to classify Italian idioms into a structured typology according to notions which are generally accepted and employed by members of the Cognitive Linguistics community. These constructions will be considered in their Italian cultural context, avoiding any (potentially hasty) claim about their supposed universality (see e.g. Kövecses 2000, 2006b, 2010b; Boellstorff

11 Since the proportions gave decimal numbers as results, I had to round them up or down, according to the case. This caused the totals to be 27 and 121, respectively, rather than 28 and 122. In order to cope with this situation, one value per each target domain which should be rounded down was randomly selected to be rounded up instead. The asterisk signal which values were increased.

12 As specified in the incipit of the chapter, in terms of the *type/token* distinction mentioned in §3.5, I am here operating at the *type*-level.

and Lindquist 2004; Goddard 2004; Andrews and Krennmayr 2007; Domaradzki 2011; Yu 2011; Caballero and Ibarretxe-Antuñano 2013; Sauciuc 2013).

Fig. 4.1: A graphic representation of the process which led to the selection of the 150 idioms.



In §4.3 I will investigate the relationship between distinct idiomatic expressions and between idioms and non-idiomatic constructions, in the light of a constructionist approach to language. I will argue that their organization can be conceived of as a dynamic system, which emerges as the result of the constant interaction of networks constituted by interconnected units in a self-organizing fashion, a view which largely overlaps with usage-based approaches to the study of language (cfr. Croft 2001; Tomasello 2003; Goldberg 2006). In §4.4. I will provide a summary of what has been observed in the present chapter.

## 4.2. A typology of Italian idioms

As anticipated at the very end of the previous section, I will now address Research Question 1, providing an outline of the taxonomy of Italian idioms I could draw by making use of Langlotz's classification parameters introduced in §2.2. The present section will be divided into three subsections. First of all, in §4.2.1 I will devote a brief preamble to explain how the categorization process was carried out, including a table with a quantitative summary of idioms allocated to each pattern. Then, in §4.2.2 I will proceed to a brief description and discussion of the structure of the meaning of a few idioms for each pattern included in my data set; in so doing, I will especially focus on the motivation patterns whose interaction constantly (re-)defines the relationship between their literal and figurative meaning. Finally, in §4.2.3 I will first assess the adequacy of Langlotz's model to be applied to Italian data and illustrate the observations the categorization process allows to make with regard to idioms; in addition I will explain how the rationale for the adoption of the present theoretical perspective, which goes beyond a strictly linguistic point of view, is relevant to the present analysis (cf. §2.3 above).

### 4.2.1. *Building the typology*

The analysis of the 150 idiomatic constructions selected from Sorge's (2010) dictionary according to the criteria listed in the previous subsection led to the

classification which can be observed in Tab. 4.5 below. As can be observed in the table, the idioms are not homogeneously distributed among the different patterns; on the contrary, most examples instantiate just a few categories, while there are idiom classes which are barely represented, if at all. The classification of the idioms was pursued through the analysis of the motivation patterns (outlined in §2.2) whose interaction lies at the root of the link between the literal and the figurative meanings of each idiomatic construction. This process also helped to shed some light on each idiom's level of compositionality and isomorphism. Since the identification of the relevant metaphors, metonymies, blending, and emblems which take part in the process could sometimes prove less than straightforward, in case of doubts I referred to the tropes used in the studies mentioned in §4.1 and the repository of metaphors included in the *Master Metaphor List* (Lakoff et al. 1991).

Tab. 4.5: categories of idioms.

Category of idiom	Items
A. Idioms with literal compositionality, global motivation, and figurative-literal isomorphism.	11 (7.33%)
B. Idioms with literal compositionality, global and constituent motivation, and figurative-literal isomorphism.	7 (4.67%)
C. Idioms with literal compositionality and global motivation.	35 (23.33 %)
D. Idioms with literal compositionality, but neither motivation nor isomorphism.	2 (1.33%)
E. Idioms with compositional but experientially unrealistic meaning.	72 (48.00%)
F. Partially compositional idioms.	3 (2.00%)
G. Literally non-compositional, constructionally idiosyncratic idioms.	10 (6.67%)
H. Literally non-compositional idioms with cranberry morphs.	0 (0.00%)
I. Idioms with absent literal compositionality due to the presence of highly specialized word-meanings and garden-path constituents	10 (6.67%)
TOTAL	150 (100.00%)

In the following subsection, I am going to introduce my classification, carried out on the basis of Langlotz's categorizing parameters, also providing the discussion of a number of examples. As specified in §2.2, I will avoid the distinction between “core” and “marginal” patterns. The different patterns will be listed according to the number of types which instantiate them in my data, in descending order. Before proceeding to

consider some examples of the idioms included in my sample, a clarification is necessary. More often than not, the allocation of an idiom to a category is not as straightforward as the analyst would like, and more than one interpretation may be possible. This implies that there would be a certain margin of discrepancy in different native speaker analysts' classification of a specific construction; moreover, in some cases, it is also likely that the same analyst, in different moments, would classify the same idiom differently. The ideal solution to this problem would be having other competent judges to classify the idioms, and then verify the level of reliability of the classification. In order to qualify as a “competent judge”, the person would have to satisfy a few prerequisite. First of all, they should be Italian cognitive linguists specializing in the study of idioms in general and with Langlotz's model in particular. Also, they should be available and interested in carrying out such a time-consuming task. In the impossibility to have competent judges verifying my classification of the idioms, I adopted the alternative procedure and classified my data three times, at regular intervals of six months. Although in most cases my interpretations of the specific item converged, in a few cases they did not. Whenever I found a discrepancy between different interpretations, I compared the notes taken in the three occasions and made my decision on the basis of the motivations I considered to be more convincing.

#### 4.2.2. *A close look at the idiom patterns*

As the Tab. 4.5 above shows, pattern E (idioms with compositional, but experientially unrealistic meaning) clearly outnumbers all other idiom categories, including almost half of the idioms in the sample (72 out of 150, 48.00%). In the present section, I will provide an illustration of a few examples for each of the patterns<sup>13</sup>.

#### *Compositional but experientially unrealistic meaning*

An example of idiomatic construction which is part of the most common category can

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<sup>13</sup> It is important to bear in mind that, because the distinction between metaphor and metonymy is slippery (cf. §2.1.2 above), sometimes alternative interpretations may be possible.

be observed in (6) below:

- (6) Portare il cervello all' ammasso.  
take:INF the.MSG brain.SG to-the.MSG stockpile.SG.

“to add one's brain to the stockpile”, meaning to conform one's ideas to those of the majority.

From the present point of view, the figurative meaning of this kind of idiom can be seen as emerging from the metaphor-metonymy interaction illustrated below:

conceptual metaphor: LOCUS OF COGNITIVE FACULTY AS BODY PART

elaboration: LOCUS OF INTELLECT AS BRAIN

conceptual metonymy: CONTAINER FOR CONTAINED

resulting in: BRAIN FOR IDEAS

emblematic metaphor: CONFORMITY AS PILE OF INDISTINCT MATERIAL

elaboration: INDISTINCT MATERIAL AS GRAIN

resulting in: CONFORMING ONE'S IDEAS TO THOSE OF THE MAJORITY AS ADDING ONE'S BRAIN TO THE STOCKPILE

The expression is compositional, since each component adds meaning to the semantic value of the structure as a whole; nevertheless, taking one's brain out of one's head and adding it to a stockpile is a totally unrealistic scenario. This idiom relies on a complex interplay between different tropes. Indeed, the mental activation and unification of these tropes should be seen as a simultaneous “burst”, rather than a serial operation, in a process of conceptual blending where the intellectual domain of (lack of) ability to think autonomously is integrated with the domain of harvesting, which underlines the astonishing capacity of the human mind to create, interpret, and integrate complex meanings in an extremely short time-span. These bundles of tropes which participate in the construction of the figurative meaning of this idiomatic entry-form will be a prominent part of the “meaning pole” of the idiomatic cluster. Since the brain is often exploited as a source domain in figures of speech, it seems relevant to consider another example of an idiom belonging to this pattern which features this organ:

- (7) Avere il cervello che fuma.  
have:INF the.MSG brain.SG which smoke:PRES.3SG.

“To have one's brain which smokes,” meaning to be intellectually exhausted.

It is again possible to observe how the figurative meaning of this idiom arises from the

interaction of metaphors and metonymies, as illustrated below:

conceptual metaphor: LOCUS OF COGNITIVE ACTIVITY AS BODY PART  
 elaboration: LOCUS OF INTELLECT AS BRAIN  
 conceptual metaphor: THE BODY AS A MACHINE  
 elaboration: BODY ORGANS AS WHEELS OF A MACHINE  
 elaboration: BRAIN AS ENGINE  
 conceptual metonymy: EFFECT FOR CAUSE  
 elaboration: SMOKING FOR MELT DOWN  
 resulting in: BEING INTELLECTUALLY EXHAUSTED AS HAVING ONES' BRAIN SMOKING

The idea that one's brain could literally melt down is ruled out by experiential knowledge. The meaning of the idiom arises from the interplay between the metaphorical associations of the intellectual activity with the brain, and of the human body with a machine, together with the metonymic link between cause and effect which helps to understand the concept of the melting down of an engine (cause) via the concept of smoking (the immediately tangible effect). Again, it is possible to observe a process of conceptual blending where the interaction and selective integration of elements from different spaces allows to straightforwardly access complex meanings.

Moving to more historically- and culturally-based idioms which feature in pattern E and display a remarkably complex (cognitive-)semantic structure we can observe the following example:

- (8) Essere una spina ne-l fianco.  
 be:INF a.FSG thorn.SG in-the.MSG side.SG.  
 “To be a thorn in somebody's side,” meaning to be a source of problems.

The semantic architecture of this idiom is definitely more complex than in the previous cases, as it is possible to see an interplay between several different metaphors<sup>14</sup>, while it is also possible to observe the action of metonymic cultural emblems. The metaphors involved in the interaction are listed below, where it is possible to observe a nested structure regarding most of them.

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14 Interestingly, sticking to Lakoff and Johnson's 1980 (by now generally seen as obsolete) original terminology, two of these metaphors are “structural,” whereas the remaining two are “ontological.”

conceptual metaphor: AN ENTITY AS A BODY  
 implying: THE ENTITY HAS PARTS  
     conceptual metaphor: PARTS OF THE ENTITY AS PARTS OF THE BODY  
 conceptual metaphor: THE ENTITY'S WELL-BEING AS PHYSICAL FITNESS  
 implying: THE ENTITY'S ILL-BEING AS PHYSICAL SICKNESS  
 conceptual metaphor: PROBLEMS AS SHARP OBJECTS

As anticipated just above, together with these metaphors, it is important to highlight the presence of the two following cultural associations:

metonymic emblem: SIDE FOR WEAK POINT  
 metonymic emblem: THORN FOR PHYSICAL SUFFERING

The former metonymy refers to the battlefield (in ancient times), where a warrior who fails to protect his side leaves it open to be pierced by the enemy's sword. The Italian cultural background is filled with war stories and myths from the Ancient times. The latter one betrays a religious origin, as it is rooted in the widespread knowledge of the Scriptural Way of the Cross in traditionally Christian countries, like Italy. According to the Scriptures, Jesus Christ was forced to wear a crown of thorns on the way to the Golgotha. It can thus be said with a reasonable degree of confidence that these metonymic associations lie at the root of the widespread use of this idiom among Italian speakers.

A further example of how complex the cognitive and semantic structure of the idioms in this category is represented by the following example, which again shows a deep connection with the religious tradition of Italy.

- (9) Bere l' amaro calice.  
 drink.INF the.MSG bitter.SG chalice.SG.  
 "To drink the bitter chalice" meaning to accept an unpleasant situation.

This idiom derives from the narration of Christ's Passion. According to the Gospel, during crucifixion Jesus Christ had to drink a chalice of bile; then the chalice became a symbol of bitterness. It is possible to notice the intersection and integration of two main conceptual metaphors and a conceptual metonymy, listed below.

conceptual metonymy: CONTAINER FOR CONTAINED



elaboration: CHALICE FOR DRINK  
 conceptual metaphor: UNPLEASANTNESS AS BITTERNESS  
 conceptual metaphor: SITUATION AS SOMETHING TO SWALLOW  
 elaboration: SITUATION AS DRINK  
 elaboration: ACCEPTING A SITUATION AS HAVING A DRINK  
 combination: ACCEPTING AN UNPLEASANT SITUATION AS HAVING A BITTER DRINK  
 resulting: ACCEPTING AN UNPLEASANT SITUATION AS DRINKING A BITTER CHALICE

It is possible to observe that, again, cognitive, affective, and socio-cultural factors co-contribute to the emergence of the figurative meaning of this idiom, which is fairly widespread among the community of Italian speakers. Although these four examples only represent a small subset of the amount of idiomatic constructions which instantiate pattern E, they seem to provide a good overview of the complexity of (and variation among) the expressions which are included in this category. The label “experientially unrealistic” works as a sort of umbrella which covers a spectrum of literal meanings denoting scenarios which range from the blatant absurd to the almost plausible.

#### *Literal compositionality and global motivation*

Moving on to the second idiom class which is substantially represented in my sample of data, I will now provide a few examples of pattern C (35 out of 150, 23.33%), which groups together idioms with literal compositionality and global motivation. An illustrative example of this category can be observed in (10) below:

- (10) Essere su-lla via di Damasco.  
 be:INF on-the.FSG way.SG of Damascus.  
 “To be on the way to Damascus”, meaning to suddenly change one's mind.

This idiom rests on a single cultural emblem, which is once again a sign of the entrenchment of religion in the Italian culture<sup>15</sup>:

emblematic metaphor: THE ROAD TO DAMASCUS AS THE LOCUS WHERE ABRUPT CHANGES OF MIND TAKE PLACE

According to the New Testament, Saul of Tarsus was converted to Christianity on the

<sup>15</sup> Cf. the notion of “intertextual metaphor” employed by Zinken (2003).

road to Damascus, where he claimed to have experienced a vision of the resurrected Jesus, after which he was temporarily blinded. In a culture which shows a strong Christian heritage, Saul's conversion has become the paradigmatic example of changing one's mind radically and abruptly. This idiomatic construction possesses literal compositionality and global motivation, but it is not isomorphic. Indeed, the meaning of the idiom cannot be distributed between the phrases *sulla via* and *di Damasco*, but only exists in the context of the whole scene. The absence of figurative-literal isomorphism implies that no constituent motivation is present as well. Another good example is represented by the idiom below:

- (11) Legar-se-la                      a- l                      dito.  
 tie:INF.REFL-PRN.3FSG    to-the.MSG    finger.SG.  
 “to tie it to one's finger”, meaning not to forget an offense, in order to take revenge when the time is ripe.

Here the figurative meaning of the idiom emerges via the exploitation of a conceptual metaphor, which lies on two metonymies related to the use of symbols and the performance of symbolic acts, listed below:

conceptual metonymy: SYMBOL FOR EMOTION  
 elaboration: SYMBOL FOR GRUDGE  
 conceptual metonymy: SYMBOLIC ACT FOR GROUNDING THE SYMBOL  
 conceptual metaphor: TO BEAR GRUDGE AS TO TIE A THREAD TO ONE'S FINGER

The origin of this idiom refers to the use, in ancient times, to carry an object in one's hand in order to remember an event. This habit is testified in the Holy Bible and it was common among Eastern peoples. In particular, Israelites used to tie thin stripes of parchment to their arms or foreheads, in order to remember the precepts of the Bible<sup>16</sup>. Today, the idiom is used to describe a scenario where somebody does not forgive an offense perpetrated by somebody else (in some cases, implying they are longing for revenge). Defining this construction as compositional may be perceived as controversial. The literal meaning of the idiom is not fully specified. Specifically, it is

<sup>16</sup> While it is unlikely that nowadays many Italian speakers are aware of the origin of the idiom, it seems reasonable to argue that it supports a distributed view according to which the use of material objects and artefacts take part in the unfolding of cognitive processes, often reflected in linguistic conventional expressions (cf. §2.3 above).

not clear what it is that somebody ties to their finger (although the action itself restricts the possible scenarios to objects which can be tied to a finger). Nevertheless, each component provides a contribution to the literal meaning of the expression, although the scenario is not fully defined. Therefore, the expression can be classified as compositional. Again, there is no isomorphism, as the figurative meaning of the idiom cannot be distributed on the idiomatic components.

Another interesting instantiation of this pattern, this time based on asymmetrical interpersonal relationships:

- (12) Tenere a-l guinzaglio  
keep:INF at-the.MPL leash.SG.

“to keep somebody on a leash”, meaning to control or dominate them.

This idiom is based on a metaphor which conceives of people as pets (most likely dogs, in the Italian cultural context), which represents an elaboration from the conceptual metaphor which more generally portrays people as animals. Moreover, it lies on the metonymy whereby an object stands for its function, and the elaboration which applies in this case, i.e. a leash stands for control. In addition, this idiomatic construction is based on the metaphor from metonymy which describes having control on somebody as keeping them on a leash

conceptual metaphor: PEOPLE AS ANIMALS

elaboration: PEOPLE AS PETS

metaphor from metonymy: LIMITING SOMEBODY'S FREEDOM AS KEEPING THEM ON A LEASH

conceptual metonymy: INSTRUMENT FOR PURPOSE

elaboration: LEASH FOR CONTROL

The meaning here is compositional since the meaning of each component adds to the meaning of the whole structure. A relationship characterized by the possibility for one part to limit the other's freedom is assimilated to the one between a pet and its owner, a situation where the latter has a dominant position over the former. As in the previous cases, the figurative meaning of the idiom cannot be distributed on the idiomatic components; therefore, there is no isomorphism.

Literal compositionality, global motivation, and isomorphism

In terms of frequency in my sample of data, pattern A is the next one, which groups compositional, globally motivated, isomorphic idioms (11 out of 150, 7.33%). The idiomatic expression in (13) below can be a good representative of the category:

- (13)   Avere    la       testa    su-l       collo.  
           have:INF the.FSG head.SG on-the.MSG neck.SG.  
           “to have one's head on one's neck”, meaning to be reasonable.

This idiom, rooted in the knowledge of the human body, relies on the intersection of a body-related metonymy and a space-related metaphor, listed below:

conceptual metonymy: BODY PART FOR COGNITIVE FACULTY  
                           elaboration: HEAD FOR INTELLECT  
 conceptual metaphor: CONDITION AS POSITION IN SPACE  
                           elaboration: BEING IN GOOD CONDITION AS BEING IN THE RIGHT PLACE  
 resulting: BEING EVEN-TEMPERED AS HAVING ONE'S HEAD ON ONE'S NECK

It is possible to observe the presence of figurative-literal isomorphism, as the head represents intellect, and “on the neck” represents the right place where a head should be, so it is possible to distribute the figurative meaning of the expression between the two idiomatic key-words. Another very good example of an idiom belonging to this pattern is the following construction:

- (14)   Leccar-si    le       ferite.  
           lick:INF.REFL the.FPL wound.PL.  
           “to lick one's wounds,” meaning to think about one's misfortunes.

This idiom derives its figurative meaning from the combination of the elaborations of two conceptual metaphors:

conceptual metaphor: PEOPLE AS ANIMALS  
                           elaboration: NURSING AS LICKING  
 conceptual metaphor: EVENTS AS SIGNS ON ONE'S BODY  
                           elaboration: MISFORTUNES AS WOUNDS  
 resulting in: THINKING ABOUT ONE'S MISFORTUNES AS LICKING ONE'S WOUNDS

Here again, it is possible to distributed the meaning between the two idiomatic keywords, since the act of licking is used to refer to nursing, and wounds represents the kind of illness to be cured. Therefore, the idiom is isomorphic.

*Non-compositionality, constructional idiosyncrasy*

The following categories are pattern G and I (10 out of 150, 6.67% each). The former includes literally non-compositional, constructionally idiosyncratic idioms. Consider for instance the following expression:

- (15)   Avere    i        nervi    a   fior        di pelle.  
           have:INF the.MPL nerve.PL to flower.SG of skin.SG.  
           “to have one's nerves on one's skin surface”, meaning to be very nervous.

It should be easy to appreciate how striking this construction is. The phrase *a fior di pelle* is a fixed expression in its own right, and can sometimes be found occurring in other contexts, to indicate skin surface (and has nothing to do with flowers). Obviously, it is a non-compositional expression, since there the component parts do not directly make a contribution to the meaning of the whole structure. The figurative meaning of this idiom can be observed to be due to a metaphor which emerges as an elaboration of a conceptual metonymy:

conceptual metonymy: PHYSICAL CORRELATE FOR STATE OF MIND  
                           elaboration: NERVE SENSITIVITY FOR TENSION  
                           resulting in: BEING EXTREMELY TENSE AS HAVING ONE'S NERVES ON THE SURFACE OF ONE'S SKIN

The relationship between “flower” and “surface” is not clear however, and it is rather idiosyncratic, although it can be found in a few other constructions such as *a fior di labbra* (literally “to flowers of lips,” meaning “softly”) or the verb *sfiorare* (“to touch lightly”). Another example of pattern G can be represented by the following idiomatic construction:

- (16)   Stare     in campana  
           stay:INF in bell.SG.  
           “to stay in a bell,” meaning to be careful.

The present construction is again quite peculiar. The expression is used only idiomatically, and it cannot be said to be, strictly speaking, compositional, since the meaning of the whole cannot be said to be derived by adding the meaning of the part<sup>17</sup>. The figurative meaning of this idiom can be seen as due to the elaboration of a metaphor:

conceptual metaphor: ALERT AS BELL  
 elaboration: BEING ON THE ALERT AS BEING ON A BELL

This metaphor can be seen as rooted in the combination of the elaboration of two conceptual metonymies:

conceptual metonymy: EVENT FOR MEANING  
 elaboration: SOUND FOR DANGER  
 conceptual metonymy: OBJECT FOR SOUND  
 elaboration: BELL FOR RING

This idiom shows a striking structure, and its meaning, although motivated, is neither compositional nor isomorphic.

*No compositionality due to specialised word-meanings and garden-path constituents*

An example of pattern I, which groups idioms with absent literal compositionality due to the presence of highly specialised word-meanings and garden-path constituents, can be represented by the interesting idiom illustrated in (17) below:

- (17) Andare in visibilio.  
 go:INF in ecstasy.SG.  
 “To go into ecstasies”, meaning to be very excited about something.

This construction is motivated by the following metaphor, only:

conceptual metaphor: FEELINGS AS ALTERED STATES OF MIND  
 elaboration: EXCITEMENT AS ECSTASY

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<sup>17</sup> The corresponding compositional expression would be “stare in *una* campana,” but that would be totally unrelated to the meaning of the idiom.

Its meaning cannot be said to be compositional, as it is extremely difficult to find the word *visibilio* outside the context of the idiom. Indeed, the semantic structure of the idiom is due to the folk etymology of a line from the Latin version of the Credo, *visibilia omnia et invisibilia* (“of all visible and invisible things”). Another instantiation of this pattern is represented, for instance, by the following expression:

- (18) Essere giù di corda.  
 be:INF down of rope.SG.  
 “to down on rope,” meaning to feel low.

Here, the opacity of the idiom is due to the use of the word *corda* in a highly specialized way. Its meaning, on the other hand, is the result of a complex interplay between motivation patterns:

conceptual metonymy: POSITION FOR STATE  
 elaboration: DOWN FOR OUT OF POWER  
 conceptual metaphor: LIVELINESS AS POWER  
 elaboration: DISHEARTENING AS POWERLESSNESS  
 resulting in: BEING DISHEARTENED AS BEING DOWN WITH ONE'S ROPE

This constellation displays a cultural basis, as it refers to the rope which is used to charge balance clocks (see Fig. 4.2 below).

Fig. 4.2: a small balance clock.



Literal compositionality, global and constituent motivation, and isomorphism

Quantitatively, the next pattern represented in my data is B (7 out of 150, 4.67%), which includes idioms with literal compositionality, global and constituent motivation, and figurative-literal isomorphism. It can be illustrated by the idiom reported below:

(19) Far salire l' adrenalina.  
make:INF raise:INF the.FSG adrenaline.SG.

“to make somebody's adrenaline increase”, meaning to provoke excitement or tension.

The figurative meaning of the idiom has a biological origin, and emerges from the interaction of a very basic conceptual metaphor with an equally foundational conceptual metonymy:

conceptual metaphor: MORE IS UP

conceptual metonymy: PHYSICAL CORRELATE FOR EMOTION

elaboration: ADRENALINE FOR EXCITEMENT

resulting in: EXCITING SOMEBODY AS MAKING THEIR ADRENALINE INCREASE

The semantic structure of the idiom can be seen as compositional, because each component of the structure contributes to the meaning of the whole structure. Namely, the verb *fare* implies causality, the verb *salire* describes a process of increase, and the noun *adrenalina* refers to a substance whose level can be increased. Also, the idiom displays both global and constituent motivation, since adrenaline is an element which is associated to a state of excitement or tension even outside the context of the idiom, and the action of provoking a state of mind is also conventionally described in terms of making a substance raise. As a consequence, the idiom is also isomorphic, as its meaning is distributed between its components.

Partial compositionality

The following category is Pattern F (3 out of 150, 2.00%), which includes partially compositional idioms, like the one illustrated in (20) below:



- (20) Essere una testa di rapa.  
 be:INF. a.FSG head.SG of turnip.SG.  
 “to be a head of turnip”, meaning to be stupid.

This idiom relies on the interaction of two different metonymies, which lead to the conceptualization of stupidity in terms of having a head like a turnip:

conceptual metonymy: BODY PART FOR PERSON  
 elaboration: HEAD FOR PERSON  
 conceptual metonymy: BODY PART FOR COGNITIVE FACULTY  
 elaboration: HEAD FOR INTELLECT  
 conceptual metonymy: SPECIFIC FOR GENERIC  
 elaboration: TURNIP FOR NON-THINKING OBJECTS  
 resulting: BEING STUPID AS HAVING THE HEAD OF A TURNIP

My rationale for regarding this idiom as partially compositional is as follows: on the one hand, the head is traditionally associated with the intellectual faculty and it is the physical locus of the brain. On the other hand, there is nothing inherently related to stupidity in a turnip. Additionally, it can be observed that the use of the verb *essere* (“to be”) rather than *avere* (“to have”) shows the extent the head is considered to be a prominent body-part in a human being (rather unsurprisingly, all in all).

*Literal compositionality, but neither motivation nor isomorphism*

Finally, there is pattern D (2 out of 150, 1.33%), which is exemplified by the following idiom, whose meaning is compositional but neither motivated nor isomorphic:

- (21) Mangiare la foglia.  
 eat:INF the.FSG leaf.SG.  
 “To eat the leaf”, meaning to understand a situation or an allusion.

The semantic structure of this idiom is totally compositional and unproblematic: the meaning of each component directly contributes to the meaning of the whole structure, which makes perfect sense: eating leaves is an activity human beings normally do whenever they have a salad. Nevertheless, it seems impossible to find a

connection between the literal and the figurative meaning of this construction<sup>18</sup>.

#### 4.2.3. *Taking stock of the situation*

The classification of Italian idiomatic constructions carried out adopting Langlotz's (2006a) categorization parameters, illustrated in the previous subsection with the aid of some examples, suggests that Langlotz's model for the classification of idioms remains valid despite the change in the target language<sup>19</sup>. Each of the constructions included in the set of idioms could be allocated to one of the classes which are part of Langlotz's typology, confirming that compositionality, isomorphism, and motivation represent good criteria for the distinction of idiomatic constructions into categories. In particular, the interaction between metaphor, metonymy, blending, and emblems proved very effective in the illustration of the relationship between the literal and the figurative meaning of the expressions taken into consideration, representing therefore an ideal criterion to account for the motivation (or lack of it) which can be observed in idiomatic constructions. As a result, the model does not seem to need any revision, at least in regard to the categorizing part of my research.

As for the observations which can be made on the basis of the categorization of Italian idioms, it seems possible to state that idiomatic constructions show a rather complex structure, both with reference to the quantitative and the qualitative dimension (Research Question 1). With regard to the former, Tab. 4.5 above clearly shows that these constructions are not homogeneously distributed among the nine patterns identified by Langlotz, but there are patterns which cover a high number of items, while others are far less represented. As a matter of fact, almost half (48%) of the constructions included in the sample are literally compositional, but they portray implausible scenarios, which are ruled out by experiential knowledge (pattern E). Then, it is also possible to observe a remarkable percentage (23.33%) of constructions whose components directly provide a contribution to the literal meaning of the whole

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18 It is relevant to emphasize that even the historical origin of the idiom is no longer known. Therefore, the source of its figurative meaning is a mystery.

19 Of course, it cannot be taken for granted that the same conclusion will also hold for the idiomatic constructions of other languages.

structure, and whose relationship between the literal and the figurative meaning is rather transparent, but where the idiomatic meaning of the whole construction cannot be distributed along the distinct components of the idiom (pattern C). The remaining constructions, which amount to less than 30% of the data set, are distributed among the other patterns in a more random way, and no item falls within pattern H. The fact that among the 150 idioms analyzed at present there are no instances of this pattern can be seen as a minor issue, since it may be simply due to the fact that the Italian language does not feature as many cranberry morphs as English<sup>20</sup>.

Along with the quantitative considerations made above, the analysis of idioms according to Langlotz's parameters allowed me to observe a lot of variation on the qualitative dimension. This variation could be noticed both across patterns and within the same category, especially in regard to the motivation patterns. The relationship between the literal and the figurative meaning of an idiomatic construction can be defined by the interaction between distinct tropes at different levels. As can be observed in the examples illustrated in the previous section, the data are rather heterogeneous: on the one hand, there are idioms which can be seen as motivated by a single metaphor or metonymy and one or more elaborations; on the other hand, other constructions involve the interaction of distinct metaphors and/or metonymies. In addition, it is possible to observe that some idioms are more based on direct experiential knowledge of the world, whereas others are motivated by entrenched cultural symbols. Moreover, it is also possible to observe that compositionality or the lack of it can often be captured more straightforwardly, but sometimes there are more controversial cases. As a result, idiomatic constructions seems to be a very broad, inclusive class of linguistic units.

In the light of these considerations, I tried to understand what kind of mutual relationship exists between different idiomatic constructions, as well as between idioms and non-idiomatic constructions (Research Question 2). Given that from the present perspective language is a dynamic network-like repository of constructions (the “constructicon”), the next task is to provide a characterization of the status of

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<sup>20</sup> This could be a venue for future research. The analysis of a much larger number of idioms could clarify if it is possible to find Italian idioms which could be allocated to that pattern, or if it would be better to cut the category off the typology. For the purposes of the present study, it seems possible to say that the original classification worked with no major problems.

idioms in this inventory. This will be the focus of the following section. Again, the expectation is that different idioms in the construction and their relationship with other constructions will show a great deal of complexity and variation, which cannot be simply addressed from a linguistic point of view. Indeed, from the present perspective this level of complexity and variation is supposed to be ubiquitous in the world, where language is not a self-contained system, but it is contiguous to many other aspects of human cognition and action (cf. §2.3 above).

It follows that a comprehensive account of the repository of idioms which are part of the Italian language can only be provided in the light of a more encompassing linguistic, cognitive, social, and ecological context. This compelling task requires that the analyst overcome two longstanding dichotomies in linguistic studies. First, the distinction between synchronic and diachronic dimensions, often taken for granted, should be loosened. The separation of the two dimensions can surely be a convenient and efficient strategy at a descriptive level and it is probably the best option available in order to reach certain goals (e.g. learning and teaching the grammar of a language), but it is also to some extent artificial (see e.g. Greenberg 1969; Givón 1971; Ohala 1981). Indeed, it is based on the contrast between a supposedly static and a dynamic “object”, while language is never static, it is a constantly evolving process (cf. §3.2 and §3.5 above).

The recognition of this fact represents a link to the second dichotomy to overcome, which has to do with two different levels of description of language: *system vs discourse*. Naciscione (2010: 9) took a step in this direction, with reference to phraseological units, by underlining the co-existence and complementarity of these two levels: “Stability in the system of language and flexibility in discourse do not contradict each other. Quite the contrary, they contribute to each other as a set of dialectic opposites.” It is necessary to underline the fact that “stability” does not equal with “staticity”, as well as “flexibility” does not necessarily mean “lawlessness”. Instead, it is more plausible to state that both system and discourse are dynamic, but they evolve at different time-scales. It is possible to assert that the linguistic system needs slower, cultural time-scales to undergo substantial modifications, while discourse develops on faster time-scales. What is generally referred to as a synchronic

state, can be seen as a snapshot of the result of the integration of the linguistic phenomena which take place at different time-scales.

At different time-scales, linguistic events usually involve the interaction between the members of groups of different sizes: the use of a particular construction in a specific way during a conversation between a few people may have an immediate influence on the development of the interaction, but it is unlikely to have any consequence on the linguistic system, in itself. On the contrary, the way the system has been shaped over time will certainly constrain the possible uses of the linguistic constructions in specific conversations in real-time interactions, but the full range of possibilities cannot be precisely specified in advance. At faster time-scales, linguistic events are contextually tied to the material contingency, where it is possible to observe a bi-directional, mutual influence between the cognitive and affective status of the interlocutors and the ongoing social and ecological dynamics. As a result, it is possible to observe that at slower time-scales, linguistic processes are a result of the use of both internal and external resources. On the other hand, at slower time-scales the linguistic system can be seen as the result of a generalization process over the amount of usage-events of the various linguistic phenomena which take place over time. These time-scales are constantly integrated, so that language is better conceived as a process, and what are generally labeled as fixed systems would better be characterized as temporary phases. From this perspective language is contiguous with other cognitive, social, affective, and cultural aspects which represent part of the lives of both individuals and communities.

As a matter of fact, in §2.3 above, I specified that the study of language involves the intersection of two main factors: the linguistic item and the (population of) speaker(s). The relationship between these two factors can only be considered with reference to the dimension of individuality/collectivity. In §3.5, I introduced the distinction between a *single-type level* and an *inventory-of-types level*. Both levels can be considered from two different perspective: an intrasubjective point of view, which refers to the status of a single idiom and the whole set of idioms for a particular speaker, and an intersubjective point of view, which refers to the status of a single idiom and the whole set of idioms for a community of speakers. The intrasubjective

and the intersubjective dimensions can be considered as standing in a relation of mutual influence. Social factors may drive changes in the mind of the single speaker, while the latter may be a potential innovator, introducing a change which may later spread among the larger community.

These considerations are in accordance with a usage-based view of language as a network of interrelated constructions (e.g. Lakoff 1987: case study 3; Langacker 1987; Goldberg 1995, 2006; Croft 2001; Tomasello 2003; Bergen and Chang 2005; Cristofaro 2008). The usage-based model seems to be ideal to accommodate the complexity of language, being able to account for the multiplicity of factors at stake in the process of shaping a linguistic system. In the following section, I will adopt a slightly modified version of this perspective, integrated with the principles of DST and a distributed perspective on the nature of language, which underscores the nonlinear, self-organizing nature of this process. Adopting such an encompassing, ecological perspective, it is possible to propose that idioms are structured in emergent idiomatic networks, composed by an idiom and all the other idiomatic constructions which are connected to it via a formal or meaning link. Also, idioms can be seen as related with non-idiomatic constructions.

In the following section, I will make use of this approach in order to provide a plausible description and explanation of the structure of Italian idiomatic constructions in a dynamic construction-network, replacing the dichotomies mentioned above with an integrated account of the dynamics which regulate the functioning of language as a process. Moreover, since language is here seen as part and parcel of a larger system, linguistic units will be also linked to conceptual, social, cultural, and emotional aspects which are not necessarily crystallized in specific linguistic expressions, as well as with some objects of the external world (cf. §2.3 above). As outlined in §3.5, the adoption of this approach makes it possible to capture the nature of language as an open network of interactive dynamic systems, which synergetically influence each other, also interacting with other facets of human cognition.

### 4.3. **Soft-assembling idiomatic networks**

In the present section, I will address Research Question 2, investigating the structure of the inventory of Italian idiomatic expressions in the light of the dynamic-systems perspective adopted in the present study. I will divide the present section into three subsections, each of which aims to stress a different dimension of this study. In §4.3.1, a more theoretical subsection, I will illustrate how idiomatic constructions can be accounted for adopting a view of language as a dynamic network of interconnected units, which are also constantly interacting with other aspects of human cognition and action. In §4.3.2, I will then outline the soft-assembling networks which relate different idioms to one another via links of different nature and/or strength, providing some examples of these networks from my data set; in addition, I will also illustrate the connections between idioms and non-idiomatic constructions. Finally, in §4.3.3 I will provide some observations concerning the emergence and self-organization of idiomatic networks at different levels of individuality/collectivity, and how they can be conceived of as regulated by a principle of causal circularity which operates at multiple different time-scales, whose integration makes it possible to observe the tendencies displayed by synchronic data.

#### 4.3.1. *Idioms in a dynamic construction-network*

As outlined in §3.5, a dynamic-systems approach seems to be perfectly compatible with the usage-based perspective on language introduced in §2.1.2. As proposed by Elman (1995, cf. §3.4 above), lexical items are better conceived as regions in a phase space, large enough to include the different senses and facets a lexical item can take in different discourse and situational contexts. On the other hand, abstract grammatical schemas may be conceived as attractor states, which drag lexical units to fill a specific slot in the construction. However, there are clearly restrictions in the extent to which word can fill a certain position in a given construction, due to the persistent interaction of different formal, semantic, contextual factors and the sequential nature of language production<sup>21</sup>. For instance, a sentence like *Mary ate an apple* represents the integration

21 This fact is perfectly in line with Rączaszek-Leonardi's view, outlined in §4.3.3 below, according to

of an unmarked monotransitive construction (which in English takes a Sbj-V-Obj word order) denoting a completed process, together with the subject NP “Mary”, the verb “to eat”, and the object NP “an apple”. Inverting the position of the NPs would lead to a construction (*an apple ate Mary*) which would sound weird, at best (excluding very particular contexts as may be, for instance, a cartoon).

From this perspective, idiomatic constructions can be seen as constituting several subnetworks which make part of the “bigger picture” outlined above. Far from being a homogeneous class of idiosyncratic constructions which display the characteristics of long words, idioms represent a field where a lot of variation can be found (as specified in §4.2.3 above). An idiom is usually related to other idiomatic constructions because they share some formal and/or meaning feature. Clearly, the relation between an idiom and the different idioms which compose its network vary in terms of strength and quality: it will be connected to some via formal links, and to some other via meaning links; moreover, it will show a tighter connection with some, and a looser one with some other. Since an idiom can be connected to several other idioms and each idiom has its own network, idiomatic networks are not isolated, but rather their constituent idioms can be seen as interconnected with idioms from other networks (as well as with non-idiomatic constructions) and each of these connections can differ sensibly in terms of properties and strength.

The clearest example of this situation is represented by idioms having a common keyword, which represent a formal link between them. For instance, all the idiomatic expressions including the word *spina* (“thorn”) are related by the presence of this lexical element. In the case of an idiom like *essere una spina nel fianco* (“to be a thorn in somebody's side”, see §4.2.2 above), it is possible to observe several connections with other idiomatic expressions. For instance, it is quite straightforward to notice its relation with the following construction:

- (22)   Avere    una    spina    ne-l        cuore.  
       have:INF a.FSG thorn.SG in-the.MSG heart.SG.

“to have a thorn in one's heart,” meaning to be seriously concerned about something.

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which the meaning of a linguistic symbol is to constrain the dynamics of an interaction. Since linguistic events always take place over time in a specific reference framework, only the contextual integration of different constructions fully defines the content of an expression.



The relation between these two idioms is quite apparent: in a sense, one might in principle be seen as a variant of the one currently under consideration, replacing the side with the heart; nevertheless, the use of the auxiliary *avere* (“to have”) rather than *essere* (“to be”) points out that the construal is reversed: in this example, the scenario is described from the perspective of the affected participant, rather than the cause of the concern. It is possible to notice an example of a merely formal connection with another idiom in the following instance:

- (23) Staccare    la    spina.  
 separate:INF the.FSG plug.SG.  
 “to disconnect the plug,” meaning to take a break from work.

The Italian word *spina* is polysemous, with one of its meanings being “plug”. In this case, the connection is only formal, and thus weaker than in the previous example (cf. Bybee 1985). This formal feature is nonetheless sufficient to include the expression in the idiomatic network of *essere una spina nel fianco*, as there are different scenarios which can give rise to ambiguity and wordplay. It is also possible to find meaning connections between idioms which are not formally related. Consider the following expression:

- (24) Avere    una    gatta    da    pelare.  
 have:INF a.FSG cat.SG to peel:INF.  
 “to have a female cat to peel,” meaning to have a difficult problem to resolve.

Despite not sharing any keyword with *essere una spina nel fianco*, this idiom has a very close meaning, although there are a couple of differences: it is considered from the perspective of the participant who experiences the problem and has a less dramatic connotation. From the present perspective, all idioms which are connected to another idiomatic construction by formal and/or meaning links constitute its idiomatic network. In the following subsection, an example of idiomatic network will be illustrated in detail, also addressing the relation between idiomatic constructions and other, non-idiomatic grammatical and lexical constructions, at different levels of abstraction/concreteness.

4.3.2. *Interconnected networks of idioms*

In the previous subsection, I have argued that a constructionist view of language is consistent with a dynamic-systems approach and provided a brief illustration of how a plausible account of the status of idiomatic constructions can be integrated into such a perspective, also supplying a simple example of how idioms can be seen as interconnected via form and/or meaning links. In the present subsection, I will delve into the nature of these idiomatic networks and their status in the linguistic system, conceived of as a dynamic process contiguous to other aspects of human cognition and the physical and social world. As will be made clearer in §4.3.3 below, the following illustration represents an abstraction over reality operated for the sake of exposition; nevertheless, it will be useful in order to provide a clear and useful description of the nature of the phenomenon under consideration.

On the one hand, idioms will be considered to be formally related if they share one or more keyword, and more loosely if they display an analogue morphosyntactic/syntactic structure; on the other hand, they will be seen as related in terms of their meaning on the basis of a semantic relation of (quasi-)synonymity, similarity, complementarity, or antonymy. A good illustrative example of this kind of networks is represented by connections between idioms featuring the words *cervello* (“brain”), *testa* (“head”), and *nervi* (“nerves”), which can be seen as conceptually contiguous.

Let us begin by considering the connections of the following idiom (cfr. §4.1.2 above):

- (25) *Lambiccar-si il cervello.*  
 distil:INF.REFL the.MSG brain.SG.

“to distil one's brains,” meaning to force oneself to look for the solution of a problem.

It is easy to identify *cervello* (“brain”) and *lambiccare* (“distil”) as the keywords of this Italian idiom, which is quite effective in describing the activity of looking for a solution to a problem<sup>22</sup>. It is possible to find a lot of idioms featuring the words

<sup>22</sup> Actually, the knowledge of the literal meaning of the verb *lambiccare* among people who are not familiar with the production of alcoholic drinks and chemical products is not to be taken for granted. Nevertheless, the meaning of the idiom is very well known, and the verb can also be found in other

*cervello* or *testa* among their keywords, since they are (quite understandably) considered as a relevant body-part when speaking about intelligence and mental activity. The present case, where we can observe the conception of the brain as a liquid to be distilled in order to obtain the solution to a problem seems to be a good example of this phenomenon. It is possible to observe that the following idiom displays basically the same meaning:

- (26) Romper-si la testa su qualcosa.  
 break:INF.REFL the.FSG head.SG on something.  
 “to break one's head on something,” meaning to put a lot of effort in order to sort a problem out.

It is quite straightforward to see the connection between the difficulty of an intellectual task, and its conception as a hard object somebody has to bang their head against, risking to break it. Similar, though not identical to this expression is the one reported in (27) below, where the situation is conceived in slightly different terms. Indeed, it is related to the frustration the inability to solve a problem brings to somebody, who does not even have the comfort of a wall to bang their head against in order to give vent to their despair:

- (27) Non sapere dove sbattere la testa.  
 NEG know:INF where bang:INF the.FSG head.SG.  
 “not know where to bang one's head,” meaning to have no idea about how to find the solution to a problem.

Tightly connected to these idioms is the case of *avere il cervello che fuma* (“to have one's brain which smokes”), discussed in §4.2.2 above. It is easy to see the relation between the effort put in order to find a solution and the concept of mental weariness: the latter may (although it does not have to) be a result of the former. Contiguous to *avere il cervello che fuma* is the one illustrated in (28) below, which denotes somebody who has lost their ability to reason clearly:

- (28) Avere il cervello in pappa.  
 have:INF the.MSG brain.SG in mush.SG.

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contexts, especially to describe the realization of elaborated pieces of work.

“to have one's brain reduced to a mush,” meaning to have lost one's control of their mental faculty.

Although not related to the source domain of machines, this idiom describes the lack of mental clarity (whether derived from mental exhaustion or not) as the brain melting down. When there is a well-known cause for somebody's lack of balanced thinking, Italian speakers often resort to the idiom reported below:

- (29) Dare a-lla testa.  
give:INF to-the.FSG head.SG.

“to go to someone's head,” meaning to intoxicate somebody, by extension to prevent them from reasoning.

This idiom is often, but not only, used to denote a situation when a particular event (for instance success or power) causes somebody to lose contact with reality, making them overly proud or confident, resulting in their making unreasonable choices. Another idiomatic construction related to the (in this case, often temporary) loss of mental stability is the following one:

- (30) Fare un colpo di testa  
do:INF a.MSG bump.SG of head.SG.

“to bump one's head,” meaning to make hasty and risky decision.

This idiom is normally used to describe somebody's sudden, rush, unexpected decision, which is very likely to lead to undesirable consequences. In order to describe somebody who is instead keen on making hasty decisions, the following construction is often used:

- (31) Essere una testa calda.  
be:INF a.FSG head.SG hot.SG.

“to be hot-headed,” meaning to be very impulsive.

An Italian idiomatic construction which is directly related to this one by a relation of antonymy is *avere la testa sul collo*, illustrated in §4.2 above. A different, but related idiom is the one reported in (32) below:

- (32) Avere i nervi saldi.  
have:INF the:MPL nerve.PL stable.PL.

“to have one's nerves stable”, meaning to be able to keep calm in difficult situations.

The capacity to be able to be logical and avoid panicking in stressful or dangerous situations is compared to the stability of one's nerves, a recurrent image in Italian figurative expressions. Indeed, the opposite concept is conveyed by the expression in (33) below, which underlines the *instability* of somebody's nerves:

- (33) Avere i nervi tesi come corde di violino.  
have:INF the:MPL nerve.PL tense.PL like chord.PL of violin.SG.

“to have one's nerves as tense as violin chords,” meaning to react excessively to any minimum stimulus.

The conception of one's mood as correlating with the stability of their nerves is even more explicit in the following idiomatic construction (already illustrated in §4.1.3 above):

- (34) Essere un fascio di nervi.  
be:INF a.MSG bundle.SG of nerve.PL.

“to be a bundle of nerves,” meaning to be nervous and irritable.

Here, the person is so tense that they are seen as a bunch of nerves, ready to react at the minimum stimulus. This connection between somebody's mood and the stability of their nerves can also be observed in the following two expressions, which denote a scenario where there is an external cause which upsets somebody:

- (35) Far saltare i nervi a qualcuno.  
make:INF jump:INF the:MPL nerve:PL to somebody.M

“to make somebody's nerves jump”, i.e. to upset somebody.

- (36) Urtare i nervi.  
hit:INF the:MPL nerve.PL.

“to hit somebody's nerves,” meaning to upset somebody.

Going back to *lambiccarsi il cervello*, another very interesting idiom which is related to this construction, although more loosely than *avere il cervello che fuma*, is the

following:

- (37) Non passare nemmeno per l' anticamera de-l cervello.  
 NEG pass:INF not-even for the.FSG waiting-room.SG of-the.MSG brain.SG.

“Not pass even through the waiting room of the brain,” meaning not even be taken into consideration.

This idiom denotes a particular kind of mental activity, which consists in ruling something out a priori. It is not even clear if it denotes activity or lack of it. What is clear, is that again the brain is considered as crucial in any kind of mental process (be it finding a solution to a problem, making a decision, or other kinds of intellectual activity). In a sense, this idiom is related to *lambiccarsi il cervello* by an antonymic relation: while the former denotes a big intellectual effort, the latter describes its total absence, if not a repulsion to it. This idiom seems to be related to the construction in (38) below, which instead denotes the casual occurrence of a thought:

- (38) Passare per la testa  
 pass:INF for the.FSG head.SG

“to pass through somebody's head,” meaning to be thought.

As predictable, there are several idiomatic constructions which uses the word *cervello* or *testa* to denote somebody's absent or limited capability to reason. Consider the following example:

- (39) Avere un cervello di gallina.  
 have:INF a:MSG brain.SG of hen.SG.

“to have the brain of a hen,” meaning to be very stupid.

Since in the Italian culture hens are considered stupid animals, it is often said that somebody whose intelligence is considered very limited to have the brain of a hen. Compared to the example in (37) above, this time the absence of reasoning is not due to the rejection to take a hypothesis into consideration, but to the possession of limited intellectual resources. This is only one of the many idiomatic constructions which denotes somebody's stupidity by negatively referring to the quality of their brain or head. In some cases, the referent's brain is said to be absent altogether. Consider for

instance the two examples below:

- (40) *Avere segatura a-l posto de-l cervello.*  
 have:INF sawdust.SG at-the.MSG place.SG of-the.MSG brain.SG.

“to have sawdust instead of the brain,” meaning to be very stupid.

- (41) *Avere la testa vuota.*  
 have:INF the.FSG head.SG empty.SG.

“to have an empty head,” meaning to be very stupid.

In this case, to underline somebody's (supposed) stupidity, it is said that their head is either filled with sawdust or empty, rather than hosting a brain. The meaning of the expression is pretty much the same as the one of the example presented above, but the choice of the wording is even more merciless: while the brain of a hen is still a living organ able to engage with the environment to carry out some cognitive performance, sawdust is just inorganic matter, while the last case straightforwardly mentions emptiness. Admittedly, the difference between the examples in (39), (40), and (41) is a nuance and a native speaker may not see the latter as having a worse connotation than the former. While there are some more similar cases, now I would like to point the reader's attention to an idiom (already introduced in §4.2.2 above) which underlines somebody's lack of ability to think independently:

- (42) *Portare il cervello all' ammasso.*  
 take:INF the.MSG brain.SG to-the.MSG stockpile.SG.

“to add one's brain to the stockpile”, meaning to conform one's ideas to those of the majority.

This idiomatic construction is connected to the idea of limited intellectual resources, but it focuses on one of its possible outcomes, i.e. the lack of critical thinking, which results in somebody's adhering to the ideas of the majority without asking themselves about their validity<sup>23</sup>. Finally, I would like to illustrate an example which differs from the last one because it implies the manipulation of somebody's intellectual resources on behalf of somebody else. Consider the expression in (43) below:

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<sup>23</sup> It is worth mentioning, though, that sometimes people may conform their views to the majority's because of laziness and comfort, rather than inability. In any case, it is possible to observe a deficiency in the use of their intellectual resources.

- (43) Fare il lavaggio de-l cervello.  
do:INF the.MSG washing.SG of-the.MSG brain.SG.

“to brainwash somebody,” meaning to maliciously persuade somebody to change their mind.

This idiomatic construction is used to assert that somebody used some particular strategy to make somebody else change their mind about something, and it has the negative connotation that this persuasion activity is due to some ulterior motives. In this case, it is asserted that the undergoer's intelligence is overwhelmed by the agent's shrewdness and mischievousness. As underlined at the end of the previous subsection, an idiomatic construction can be connected to another expression without sharing the same formal structure. For instance, the same meaning conveyed by *lambiccarsi il cervello* can be found in the single word *scervellarsi* (literally “deprive oneself of one's own brain”), a verb derived from the noun *cervello*, with the addition of the infinitive suffix *-are* and the the indefinite reflexive one *-si*, which are merged together in the form *-arsi*, and the negative prefix *s-*<sup>24</sup>. Unlike the examples previously observed, *scervellarsi* is a lexical rather than a syntactic construction, which shows a complex morphological architecture. Another example is given by the contiguity between the idiom *avere il cervello in pappa* outlined in (28) above and the expression *perdere la bussola* already introduced in §4.1.2 above, and reported in (44) below, which does not feature the keywords *cervello*, *testa*, or *nervo*:

- (44) Perdere la bussola.  
lose:INF the.FSG compass.SG.

“to lose one's compass,” meaning to become confused, and anxious (cf. “lose one's bearings”).

Although the idioms briefly illustrated above represent only a part of the idiomatic network of *lambiccarsi il cervello*, it seems to be a well-balanced sample of the constructions this idiom is connected to, and it should give an idea of how an idiomatic network can be conceived. It is important to underline that the same idiom can be part of several different networks: all networks are interconnected and together they constitute a bigger one. Likewise, it is worth noting that an idiomatic

<sup>24</sup> It is also possible to find, in the Italian language, a word which is bound to *lambiccarsi il cervello* by a conceptual link, without sharing any formal feature with it: the verb *almanaccare*, but it is so rare to find it used with this meaning that it would probably be rushed to include it in the network under consideration.



construction is not connected to other idioms only. From a cognitive perspective, they are first of all linked to the abstract grammatical schemas mentioned above: for instance an expression like *lambiccarsi il cervello* is inevitably related to the  $[V_{\text{INF.REFL}} \text{NP}_{\text{Obj}}]$  construction (a subcase of  $[V_{\text{INF}} \text{NP}_{\text{Obj}}]$ , which in turn is a subcase of  $[V \text{NP}_{\text{Obj}}]$ ), whereas constructions like *portare il cervello all'ammasso* instantiate the  $[V_{\text{INF}} \text{NP}_{\text{Obj}} \text{AdvP}]$  construction, and so on. Of course, each idiom is also related to the lexical items which fill the slots in these abstract patterns. While this is the conventional scenario, there are some idioms which do not, strictly speaking, entirely reflect an abstract pattern. For instance, the case of *dare alla testa* is emblematic: while *dare* is a transitive verb which would normally require a direct object NP, the idiomatic construction integrates the lexical element with a  $[V \text{AdvP}]$  pattern. In terms of a network-like inventory, this means that *dare alla testa* will not be horizontally linked with a lot of other constructions. This is not a problem at all though, since it is perfectly normal that some nodes of a network will show more links than others.

In summary, idiomatic constructions can be seen as a network of nodes which are connected by links of different nature and levels of strength: an idiom will be linked to several other idioms by formal resemblance and/or conceptual contiguity; this connection may sometimes be less than straightforward to notice, if there were not an intermediate node represented by another idiom, which has tighter connections with both and thus also plays the role of a sort of “hub” which strengthens the link between the other two. As previously underscored, while all the idioms which are connected with a certain construction represent its idiomatic network, an idiom can be part of several different networks. There are idioms which are likely to have bigger idiomatic networks and others which are likely to be part of smaller ones. It follows that the former are also more likely to be part of more networks than the latter. It has also been said that idiomatic networks represent a part of a much larger network represented by the linguistic system as a whole. Idiomatic expressions can be seen as a heterogeneous “family” of constructions which can vary a lot with regard to their level of compositionality, conventionality, frequency, motivation, and figurative-literal isomorphism. Idioms are therefore interconnected with other constructions, both idiomatic and non-idiomatic.

From the present perspective, language is not a self-contained, encapsulated faculty, but it is a dynamic process contiguous with other aspects of human cognition, society, and ecology; consequently, it makes little sense to think of idiomatic constructions as simple items of non-literal language. Therefore, while the constructionist view of linguistic units as monostratal wholes which include information about all aspects of language, ranging from phonetics to pragmatics, is perfectly consistent with the present approach, here I am adopting a more encompassing view which sees language as tightly coupled to (and impossible to detach from) other subjective as well as social and ecological processes. As a result, idioms, like other linguistic constructions, are not only interconnected with other linguistic units, but they are bound to the cognitive, affective, socio-cultural, and contextually situated aspects which are part of the life of both individuals and social groups of different nature and dimensions. These properties of idiomatic construction can be, at least in part, observed in the account of the idioms illustrated above.

For instance, consider the idiom *lambiccarsi il cervello* (“to distil one's brains”), whose idiomatic network has been partly illustrated above. This idiomatic construction is clearly related to the (experience-based) knowledge of the cognitive effort which the activity of solving a tricky problem requires, together with the knowledge of how it feels to undertake such an intellectual challenge<sup>25</sup> and the kind of mental and social strategies as well as material objects which may be employed in order to simplify the task and solve the problem. The kind of problems which one can have to resolve in everyday life range widely, and each of them can require different types of skills and expertise (consider, to mention a few fields: logistics, family problems, mathematics, budgeting, home improvement). However, the emergence of a difficult problem always requires the use of cognitive resources, involves the emotional aspect of a person's life (different people will react differently to the emergence of the problem), the subjective experience with the solution of problems, and the historical, social, and situated context.

The observations made in the present subsection highlight a couple of issues which are worth to be mentioning at this point. Firstly, positing flexible idiomatic

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25 Of course, being this knowledge based on personal experience, the evaluation about the difficulty of a task is strictly subjective.

construction-networks, which is perfectly convergent with a usage-based approach to the study of language, suggests that idiomatic constructions can indeed be seen as part and parcel of the so-called “constructicon” rather than peripheral items of undecomposable non-literal language. Therefore, it supports a constructionist view of language as an inventory of constructions of different sizes and nature (Goldberg 2003) over a generative view which portrays language as a list of words formally combined according to a set of rules (e.g. Pinker 1999)<sup>26</sup>. Second, the tight connections of linguistic constructions with other aspects of human life and experience, perfectly consistent with Lakoff's (1990) cognitive commitment, allow the analyst to argue in favor of a distributed, ecological perspective on the nature of linguistic phenomena; this view overcomes the dichotomy between internal and external views of language, capturing its status as contiguous to other cognitive processes and unseparable from its physical and socio-cultural environment. The adoption of such a view paves the way for a discussion on the inherent dynamicity of linguistic, cognitive, socio-cultural, and contextually situated processes, and on the levels of uncertainty of their development and evolution as the result of the integration of the events which take place at different time-scales. This topic will be dealt with in more detail in the next subsection, when addressing the origin and development of idiomatic networks.

#### 4.3.3. *The emergence and self-organization of idiomatic networks*

As mentioned in passing at the beginning of the previous section, the description of idiomatic networks outlined above necessarily represents an abstraction over reality. For the sake of exposition, I provided an overarching characterization which encompasses the four levels introduced in §2.3, reported below for convenience:

- the individual linguistic construction for the individual person;
- the repository of linguistic constructions for the individual person;
- the individual linguistic construction for the social group;

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<sup>26</sup> Cf. Langacker's (1987) *rule/list fallacy* argument (a short formulation of the argument can be found in several cognitive-linguistic papers, see e.g. Langacker 2005, 2009; Broccias 2006).

- the repository of linguistic constructions for the social group.

In other words, adopting the labels introduced in §3.5, it is possible to state that both the *single-type* level and the *inventory-of-types* levels can be considered from two different perspectives:

- An intrasubjective point of view, where these labels refer to the status of a single idiom and the whole set of idioms which are present in the network of particular speaker. Loosely speaking, this can be considered as the more “individual” dimension of the phenomenon;
- An intersubjective point of view, where these labels refer to the status of a single idiom and the whole set of idioms which are shared by the community of speakers. In broad terms, this can be seen as the more “social” dimension of idioms.

Again, it is worth remarking that the intrasubjective and the intersubjective dimensions can be considered as standing in a relation of mutual influence, with social factors driving changes in the idiomatic network of the single speaker, and each single speaker being a potential innovator which may start a change which later may spread among the larger community.

It is also important to underline that the latter level is itself a simplification, because the four dimensions mentioned above do not account for the fact that the community of the speakers of a language can be fragmented in a virtually infinite number of groups, which can be distinguished according to a wide range of criteria (geographical area, social background, gender, age, level of education, and so on), also most often impossible to completely detach from each other. In any case, this kind of simplification is necessary, because it is impossible to take all variables into consideration in a single study; consequently, here I will stick to this four-way distinction.

It is crucial to address the emergence and self-organization of the networks at both the *single-type* and the *inventory-of-types* levels, as introduced in §3.5. As mentioned above, the recognition of these two levels as applying in different social groups is vital, and it is possible to see the four combinations as standing in a relation of mutual influence. In order to capture the emergence of the network, it is now necessary to

emphasize the key role of time-scales, whose integration makes it possible to characterize the interaction between intentional agents and their physical and socio-cultural environment at different levels of lived temporality.

It seems reasonable to start by considering the idiomatic networks of each single speaker at a certain moment. Their single-type and inventory-of-types levels will have a certain (relatively stable) structure, determined at slow, socio-cultural scales and acquired through phenomenological experience in ontogenesis. Since the acquisition of this structure is strongly subjective, it is also reasonable to suppose that there will be no complete overlap in the structure for any two speakers, and the social level is a sort of “collection” of the features which are shared by all (or, more realistically, most) speakers. At the time-scale of real-time linguistic interactions with other people, the use of idioms in a conversation may have a small influence on the status of a construction and the inventory in the speaker, which may also modify the connections between the distinct idioms in the network and influence their future use of the construction. Obviously, the influence exerted by a usage-event on the speaker may be stronger or weaker according to cognitive, affective, and contextual factors. At slightly longer time-scales, the effect of all these communicative events may bring changes at both the individual and the social level, with regard to both the single-type level and the inventory-of-types level. At even slower time-scales, it will be possible to observe even more remarkable changes, showing different relations at a socio-cultural level. At even longer, historical time-scales, it will be possible to observe even more striking differences between distinct phases of the process. It is important to stress that, since the influence between the two levels is mutual rather than one-way, these changes at the social level will also affect the status of constructions (and networks) at the individual level<sup>27</sup>. I will not delve deeper in this characterization, but it is relevant here to stress a particular aspect of this process: from the present perspective, the consideration of idiomatic constructions at different time-scales is crucial to analyze the establishment of links between different idioms, which contributes to the emergence of a network. Over time, communicative events will lead to the

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<sup>27</sup> Of course, since both the single-type level and the inventory-of-types level are dynamic systems, there is always the possibility of a catastrophic event which may cause abrupt changes in the system, at any level. An instance of such an event may be the introduction of a new construction by a person in the public eye, which could spread quickly as a consequence of mediatic resonance.

strengthening and weakening of these links, which may also disappear while new ones may arise.

As an example, let us consider again the idiomatic expression *lambiccarsi il cervello* (“to distil one's brains) reported in (25). For instance, we can suppose that there will be a high degree of overlap between the meaning of the expression at the individual and the social level, and that the construction will display basically the same formal and/or meaning links with the other idioms in the network mentioned above. We can then suppose that each linguistic event may have a small influence on the status of *lambiccarsi il cervello* in somebody's network, especially if differences in the interlocutors' attitude toward the idiom emerge in the interaction. While a single occurrence of this discrepancy may have no effect, a repeated exposure to a slightly different conception of the idiom may cause some change in the individual's conception of the construction, with some effects on the links between *lambiccarsi il cervello* and the constructions in its network. Therefore, we have a modification at both the single-type and the inventory-of-types levels.

While such a change in a single individual's network may be insignificant at a social level, its spread within (and across) groups may instead have consequences on the conventional meaning of a construction and, to a much smaller extent, the network shared by the community. At slower time-scales, this may cause the construction to develop a slightly different meaning, thus modifying its links with the other nodes in the network. Again, while at present I have just stressed the influence of a change at the individual level on the social level, it is important to highlight that the new status of an idiomatic construction (and the new structure of the network) at the social level will also exert an influence on individuals' uses of the construction in their future interactions. Moreover, since in the present perspective cognition involves both internal and external resources, the status of a construction for individuals and communities may be influenced by the knowledge of the evolution and use of objects of the external world which are mentioned in the idiomatic expression. For instance, a speaker's experience with stills may change during their lifetime (i.e. they may start working at a distillery or on the contrary they may quit such a job). This is likely to influence their attitude toward expressions using these verb *lambicare* (“to distil”).

Similarly, if the knowledge of the shape, constitution, function, and use of stills became more widespread among a community (or less so), the same conclusion could be drawn with reference to the social level of language.

At this point, a caveat is necessary. While above I have described the process in a sort of step-by-step fashion, the interaction and mutual influence between these events do not take place sequentially; rather, they are better seen as occurring simultaneously. This fact is perfectly accounted for by the principle of causal circularity, whose influence can be observed in all its magnitude when the integration of the different time-scales is taken into consideration. It is possible to conceive of a synchronic phenomenon as the result of the simultaneous realization of two opposing tendencies:

- on the one hand, the single usage-event will have some kind of impact on the participants. In turn, the amount of interactions which take place everyday will have a cumulative effect on the linguistic habits of a community;
- the latter, at the same time, will constrain the future interactions of each participants and the community as a whole

The results of the tension between these two tendencies can be better understood by considering it as the product of the integration of the multiple time-scales at which events take place. This observation goes in the direction of the studies carried out by Rączaszek-Leonardi (e.g. 2010, 2013), according to which language is a system of replicable constraints, where the meaning of a linguistic symbol lies in its ability to constrain the real-time dynamics of an interaction (see also Pattee 2008).

On this view, a linguistic symbol will be first used to constrain the development of a specific interaction. If it is successfully re-used in following interactions, eventually it will be culturally selected to denote a certain object, situation, or process. This conventional meaning of the symbol stands in a relationship of persistent tension with the situational uniqueness of each frame of reference. As a consequence, linguistic symbols underdetermine the message which is being conveyed, with the rest of the communication being provided by the context of use. While this aspect will be dealt with in more detail in the following chapter, it is important here to underline that the result of the tension between a conventional meaning and a contextual use of idioms can represent a major source of influence on both the single-type level and the

inventory-of-types levels of idiomatic expressions for changes in the links between the constructions in the network as well as the connections with the linguistic units across different networks, at both the individual and the collective level.

These considerations hold with regard to other linguistic and cognitive processes as well as to language and cognition in general, which are seen as simultaneously having an individual and a collective nature, in accordance with common views in constructionist approaches to grammar. This reflection leads to a particular conception of language and cognition, whose complexity can basically be traced back to their both multistratal and, in a sense, nested structure (cfr. Gibbs and Cameron 2008; Torre 2011: ch. 1): on the one hand, cognitive phenomena involve the interaction of distinct levels (i.e. psychological, social, neural, etc.); therefore, they can be approached from different points of view (e.g. focusing on some specific characteristics while neglecting others) and observed at different degrees of specificity/abstraction; on the other hand, it is also possible to observe the structure of a Russian doll, where cognitive and linguistic phenomena can be seen as embedded in other, more encompassing social and ecological dynamics (cf. Linell 2005: ch. 7).

Moreover, it seems relevant to underline that the present perspective on cognition highlights once more that the boundaries between different levels are not water-tight, but on the contrary elements which are part of a specific phenomena are interconnected in a network-like fashion to other components both within and across levels, and the network works and evolves dynamically as a result of the agent-environment interaction at different scales of lived temporality: new connections can be established and old ones can die out<sup>28</sup>.

As hinted in §3.6, this situation seems to make a case for the purposes of describing particular linguistic and cognitive phenomena (as well as language and cognition in general) as interconnected dynamic systems constituted by a network of interrelated dynamic systems, in a fractal fashion. This is probably one of the strongest points in Dynamic Systems Theory: its principles seem able to capture the functioning of phenomena and systems at different levels of granularity, warding off the risk to step back to reductionism, by appealing to the foundational concept of self-organization

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28 In a sense, it may be possible to draw a comparison to what happens with synapses in the brain (see e.g. Dąbrowska 2004; Feldman 2006).



(e.g. Thelen and Smith 1994; Kelso 1995). Thus, a dynamic-systems approach affords a unified explanation of different cognitive, social, linguistic, and environmental processes at distinct time-scales by making use of the same principles. The following section will provide a summary of the observations made throughout the present chapter.

#### **4.4. Concluding remarks**

The concluding section of this chapter will be divided into three subsections. In §4.4.1, I will briefly summarize the answer I provided to Research Question 1, reviewing the main observations I could make about the application of Langlotz's classification to the idiomatic constructions of the Italian language in §4.2. In §4.4.2, I will then shortly recap the answer I provided to Research Question 2, revisiting the main reflections about the consequences of conceiving of idioms as nodes in a network from a dynamic-systems perspective. Finally, in §4.4.3 I will make a summary of the main points about the nature of the linguistic system highlighted in the chapter, stressing their relevance in the light of the theoretical framework adopted in the present study. Moreover, I will devote a few lines to emphasize the connections between the present chapter and the following one.

##### *4.4.1. Addressing Research Question 1*

In §4.2, I evaluated to what extent and in what ways Langlotz's classification of idiomatic constructions into different patterns, which proved effective in the categorization of English idioms, could be applied to the analysis of the sayings of another language, namely Italian. The expectation was that the typology should work well, but it was considered worth checking if any modification would be necessary, in order to account for the differences between the two languages. It is worth mentioning that a critical assessment of Langlotz's model has already been provided in §2.2; therefore, it was beyond the purposes of the present summary.

The only significant modification I contributed was, the avoidance of the

potentially misleading distinction of the idiomatic patterns between “core” (patterns A to D) and “marginal” types (patterns E to I). Indeed, the use of terms like “core” and “marginal” may generate the quantitative expectation that “core” idioms vastly overwhelm “marginal” ones, whereas the Tab. 4.5 clearly shows that this is not the case. Also, terms like “core” and “marginal” immediately recall the notion of prototypicality, whose status has always been at the center of a heated debate within the linguistic community<sup>29</sup>. As for the rest, Langlotz's classification proved sufficiently consistent and appropriate to be applied to the idiomatic constructions of the Italian language without any particular adjustment.

The categorization carried out on the basis of Langlotz's parameters allowed me to observe the complex status of Italian idiomatic constructions, with regard to both quantitative and qualitative aspects. On the one hand, 48% of the idiomatic constructions included in my data set fall within a specific category (pattern E) and 23.33% belong to another class (pattern C), meaning that the other patterns share less than 30% of the selected idioms. On the other hand, the relationship between the literal and the figurative meaning of idiomatic constructions display a wide range of semantic variation, both within the same pattern and across distinct categories. The adoption of Langlotz's model to the analysis of Italian idioms shed light on the inherent complexity and heterogeneity of this category of linguistic constructions, raising curiosity about how a the mutual relationship between different idioms can be accounted for in terms of a constructionist approach to language, and how they relate to other linguistic units present in the construction.

#### 4.4.2. *Addressing Research Question 2*

In §4.3, I provided an account of idiomatic constructions as interconnected nodes in a network, arguing that it is possible to conceive of an idiom as being related via formal and/or meaning links to other idiomatic constructions, which constitute its idiomatic

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<sup>29</sup> Claims about prototypicality should ideally be supported by a fair amount of empirical evidence. For an innovative perspective on prototypicality in language, able to account for neurolinguistic (including clinical), psycholinguistic, and cross-linguistic phenomena (also adopting connectionist and dynamic-systems notions), see Nadeau (2012: ch. 2).

network. At the same time, I emphasized that an idiom is also connected to other constructions of a language at different levels of abstraction/concreteness, and also to other cognitive, affective, socio-cultural, and ecological factors which do not belong in the realm of language, but are part of a person's life. These include both internal aspects (e.g. concepts, notions, and values) and external resources (e.g. material objects and artifacts) the members of a community make use of in their daily existence in the world.

The category to which each idiom has been allocated in §4.2 can be seen as part of the “meaning pole” of its idiomatic cluster, and the idiomatic networks can include constructions which belong to different patterns. As a matter of fact, it is possible to characterize idiomatic constructions as dynamic systems, and the idiomatic networks as landscapes of heterogeneously interconnected dynamic systems. Converging with a constructionist view of language, idioms do not differ from other linguistic units (of any level of complexity and abstraction); therefore, it seems possible to see language as a landscape of massively interlinked dynamic systems. Since language is not an autonomous, self-contained faculty, each node of the network is synergetically integrated with each other and with aspects of other cognitive, affective, socio-cultural and environmental factors. All these aspects combine to bring about an exponentially bigger landscape of interacting dynamic systems, which exert influence on each other in a constant interplay. The functioning of this landscape will be illustrated in the next chapter, which will focus on the behavioral tendencies of Italian idioms in the actual context of use. For the time being, in the next subsection I will supply a summary of the main points made in the previous sections, also emphasizing the function of the principles and notions outlined in part I as links between the present chapter and the following one.

#### 4.4.3. *Looking back, looking ahead*

The present chapter has highlighted a series of points which can be made with regard to the nature of idioms (and, more generally, language) adopting the theoretical perspective illustrated in part I. First of all, it is possible to suggest that idiomatic

constructions are part of a dynamic and distributed network. It is plausible to consider the properties of idiomatic constructions as self-organizing in context, rather than being fixed and stable. An idiom can be seen as a dynamic system which displays a bundle of properties toward which each usage-event tend to conform to some extent, remaining at the same time open to the influence of the surrounding environment in the situated context, which may determine a certain degree of deviation from those properties.

As highlighted in §4.3, the network-like structure of the inventory of idiomatic constructions can be found at different levels of individuality/collectivity, both with regard to the single-type level and the inventory-of-types level. All these levels are strictly interconnected, and their dynamics can be argued to be driven by the same principles, i.e. the basic principles of DST. This perspective is in agreement with Lakoff's (e.g. 1991) cognitive and generalization commitments, according to which language is not an autonomous, encapsulated faculty, but rather an integrated aspect of human cognition.

From the present perspective, language can be described as a soft-assembling process in constant motion (cf. Thelen 1995a), which stands in a relationship of contiguity with other cognitive, affective, social, and ecological processes. Linguistic events always take place in context and the communication process involves at least two people interacting in a physical as well as socio-cultural environment. The communicative event is experienced as a whole, and there is no clear-cut separation between linguistic, mental, and physical aspects. Linguistic and cognitive processes are always influenced by the context of the actual usage-event, where they interact with other social and environmental factors (cf. §3.2), mutually influencing each other in a single dynamic system<sup>30</sup>.

The appreciation of the centrality of linguistic events is necessary to understand the nature of language as a process which develops over time. It is possible to observe the action of a principle of causal circularity operating at different time-scales: as underlined in Torre (in press), on the one hand a bundle of formal, semantic/pragmatic, affective, cognitive, and socio-cultural factors works as an

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<sup>30</sup> It is nevertheless important to recognize that, depending on the nature of the data available, the analyst may not be in possession of all the contextual information they would like.

attractor state, constraining the possible uses of a construction; on the other hand, the bulk of actual occurrences of the construction in context constantly (re-)shapes the attractor state. This persistent tension lies at the roots of linguistic variation and leads the system into a state of *metastability*, where the utterances tend to converge to specific constructions over time, but they remain sensitive to the temporary dynamics of the ongoing interaction (e.g. Rączaszek-Leonardi 2013). From this perspective, the linguistic system simultaneously displays a certain degree of stability and plasticity (cf. Bressler and Tognoli 2006; Kello et al. 2008; Kelso 2012).

All the points summarized above represent links between the present chapter and the next one. In the next chapter I will analyze a sample of occurrences of real language-data. In the incipit of the present chapter, I specified that here I would focus on what traditional linguistic studies usually label *types* (in the present study, the idiomatic constructions). In the next chapter, instead, the focus will be on *tokens* (the occurrences of the idioms) and their relationship with types. One of the main aims of the next chapter is to assess the level of versatility of the linguistic system which can be observed in my sample of occurrences of idiomatic constructions. The illustration of this phenomenon should also be able to clarify how temporary phases are brought about by the integration of different, interactive time-scales and levels of granularity.

As a final remark, in the previous subsection I mentioned in passing the possibility to conceive of the dynamic system which includes language, cognition, society, and ecology as a “fractal landscape of open dynamic systems.” At the very end of ch. 5, I will go back to this characterization. I will argue that the behavior of idiomatic constructions can be seen as displaying a self-similar structure, and the same observation may be made in regard to the linguistic system as a whole and perhaps more generally to human interactivity, enabling the analyst to appreciate the complex ecology where language arises and constantly evolves.

## 5. Levels of stability and variation in use

In the present chapter, I will focus on the more “bottom-up” dimension of my study: here I aim to systematize the tendencies which can be observed in a reasonably large sample of genuine usage data, drawn from the large web-based corpus of Italian language outlined in §4.1.3. On the basis of the observations proposed in the previous chapter, the expectation from the present perspective is that both stability and variation will be present in the data, a prediction which is in agreement with the perspective of the usage-based model (e.g. Langacker 2000; Croft 2000): stability is expected because it would reflect the conventional way an idiomatic construction is conceived of, while variation is expected because each language usage-event is affected by the context. On the basis of Langlotz's (2006) results, a correlation between the idiom category an idiomatic construction was allocated to in the previous chapter and the variation patterns is expected, with the idioms whose meaning is more transparent more open to all patterns of occurrence ranging from *No variation* to the most striking types of variant, whereas those whose meaning is more opaque are expected to be less open to the latter.

Should the expectations put forward above be confirmed by the data, a DST approach can provide a convenient way to explore and model the data. On the one hand, the dynamic-systems notions of attractor state is helpful to conceptualize the tendency of speakers' use of linguistic constructions to converge toward a (cluster of) “standard” combination of form and meaning. On the other hand, the notion of “perturbation” can be helpful to describe the possibility for a construction to be used in a way which deviates from the standard, without (normally) upsetting the stability of the system (see Zeeman 1980). A DST approach could help to provide a coherent model of the data which would point to the same direction as other applications of DST to the study of language (e.g. Cameron and Deignan 2006; Larsen-Freeman and Cameron 2008; Gibbs and Colston 2012), and in the future could lead to the formulation of quantitative predictions about the use of idiomatic constructions which could be modeled by making use of the mathematical machinery of DST (see §3.5). If,

on the contrary, the expectations outlined above were not met, the adoption of a dynamic-systems approach to account for the data would not be warranted. For instance, if the data denoted a homogeneously low level of variation, a dynamic-systems approach would hardly be useful in modeling the data. Similarly, in case the data did show some level of variation but without displaying any correlation between the transparency of an idiom and its patterns of occurrence, a DST perspective would not be very useful in the interpretation of the data. The opposite case would be equally problematic for a DST approach: if the data showed no stability, the notion of attractor would hardly be useful.

The chapter will be divided into four sections. First of all, in §5.1. I will introduce the data-selection process and the methodology adopted to analyze the occurrences of the idiom. Then, in 5.2. I will address Research Question 3, whose aim is to illustrate the variational behavior of Italian idiomatic constructions detected in the empirical investigation of a sample of real language data. Next, in §5.3 I will address Research Question 4, whose purpose is to assess the adequacy of a dynamic-systems approach to provide a unified model for the phenomena observed in the two stages of my study. Finally, in §5.4 I will summarize the answers to these two research questions and proceed to some reflections about the nature of language from a dynamic-systems perspective.

### **5.1. Data and methodology**

In the present section, I will introduce the data analyzed and the methodology employed in the analysis of a sample of actual occurrences of a subset of Italian idiomatic constructions. The section will be divided into two subsections. In §5.1.1, I will illustrate the process of selection which allowed me to choose the sample of data to be analyzed, which basically preserves the rationale of the procedure adopted in ch. 4 (see Fig. 4.1): first, I will introduce a further step necessary to reduce the number of idioms to be taken into consideration to one third, in order to have a number of occurrences small enough to be analyzed in a single study. Then, I will outline the selection of the occurrences downloaded for each idiom. In §5.1.2, I will introduce the

methodology adopted in the analysis of the data, focusing in particular on the revisions I contributed to Langlotz's (2006a) model illustrated in §2.2, which represents the starting point for the classification of the occurrences into distinct patterns.

### 5.1.1. The data-selection process

Among the 150 idiomatic expressions chosen for the analysis carried out in the previous chapter, I selected 50, to explore how they are used in the Italian corpus, using the online facilities described in §4.1.3. Rather than proceeding to a random choice, I decided to maintain the proportion between source and target domains illustrated in the previous chapter. However, since the exact proportion would have left me with 9 idioms pertaining to TD1 - the more intellectually-oriented target domain - and 41 pertaining to TD2 - the more emotionally-oriented target domain -, I (arbitrarily) decided to round off the numbers and select 10 idioms for the former domain and 40 idioms for the latter one<sup>1</sup>. I did this by randomly replacing an idiom from TD2 with one from TD1. The figures relative to this proportion can be observed in Fig. 5.1 below, where the asterisk signals the source domain whose value was increased in TD1 and the one whose value was decreased in TD2. A summary of the criteria adopted for the data-selection process was illustrated in the previous chapter, where the steps were also graphically represented in a flow-chart. The reduction of the number of constructions from 150 to 50 simply represents a repetition of the fifth step taken in the stage of my study outlined in §4.1.3, where the number of constructions was reduced from 197 to 150, maintaining the proportions across both source and target domains. Then, for each of the 50 selected idiomatic expressions, 100 examples of the co-occurrences of their *lemma-group* were downloaded<sup>2</sup>, after manually checking that all of them showed some level of idiomaticity (as defined in §1.2

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1  $28:150 = x:50$ ,  $x \approx 9$   
 $122:150 = x:50$ ,  $x \approx 41$

2 The “lemma-group” was defined in §4.1.3 as “a group of lemmas formed by the (lemma corresponding to) the headword *Sorge* used to classify the idioms in her dictionary, plus the (lemma relative to) one or more content words which feature in the entry form. In some cases, (the lemma relative to) a function word could also be included in the group, in order to reduce the noise in the results.”



above). For those expressions whose lemma-group returned less than 100 results showing some degree of idiomaticity, all the relevant occurrences were collected (cf. Langlotz 2006a). Most of the times, a simple search for (co-)occurrence of the (lemma-group relative to the) expression was sufficient to find occurrences of the idioms in use.

Tab. 5.1: data relative to the 50 idiomatic constructions selected for the analysis.

Target-dom.	TD1		TD2		Total	
Source-dom.	Number	Percentage	Number	Percentage	Number	Percentage
Body-related	5	50.00%	23*	57.50%	28	56.00%
Metaphysics	1	10.00%	9	22.50%	10	20.00%
Tools	2*	20.00%	4	10.00%	6	12.00%
Animal Species	1	10.00%	3	7.5%	4	8.00%
Plants	1	10.00%	1	2.5%	2	4.00%
Total	10	100.00%	40	100.00%	50	100.00%

Nevertheless, sometimes the use of additional strategies was also employed in order to reduce the noise in the database; in particular, often a lemma was restricted to occupy a particular position in relation to another one. For instance, consider the expression *avere il veleno in corpo* in the expression in (1) below:

- (1)   Avere    il       veleno    in corpo.  
       have:INF the:MSG venom:SG in body.SG  
       “to have venom in one's body”, meaning to be strongly resentful

The lemma *corpo* (“body”), was restricted to fill a slot at the right of the lemma *veleno* (“venom”). Moreover, when the lemma-group of an idiom showed more than two lemmas, one was often omitted. Consider the expression in (2) below.

- (2)   Far       saltare    i       nervi    a qualcuno.  
       make:INF jump:INF the:MPL nerve:PL to somebody.M  
       “to make somebody's nerves jump”, meaning to upset somebody

In this case, the verb *saltare* (“to jump”) was omitted from the search, which only

focused on the lemmas *fare* (“to make”) and *nervo* (“nerve”). This was done in order to increase the chances to observe lexical variation (cf. Moon 1998), the kind of formal variation which is usually most difficult to explore in a corpus-informed study<sup>3</sup>. The most difficult task in these cases is often to find a reasonable balance between the aim to observe as much variation as possible and the practical necessity to reduce the noise to a minimum level. The adoption of these measures in the data-selection process resulted in a total sample of 4,809 occurrences of idiomatic constructions in actual language use.

### 5.1.2. *Methodological refinements of Langlotz's model*

With regard to more methodological issues, although Langlotz (2006a) represents one of the main reference points for my study, there are a few respects in which the methodology adopted in this phase of my study diverges from the Langlotz's contribution (as anticipated in §4.4.2). While in ch. 4 Langlotz's classification of idiomatic constructions into different patterns could be adopted and successfully employed in the analysis of Italian data with virtually no substantial modifications, in the analysis of the levels of stability and variation in real occurrences of idiomatic constructions some adaptations are needed in order to strengthen the reliability of my analysis. These refinements will be reviewed in the present subsection.

#### *A frequency-based approach to the base-form*

First of all, a study of the real occurrences of an idiomatic construction requires a specific perspective on the notion of “base-form”. Langlotz defines the base-form of an idiom as follows (the definition was already quoted in §3.5, but it is repeated here for convenience):

the base-form of an idiom (i.e. an idiom's context-independent default structure that is distilled from various usage-events) as a probabilistic co-occurrence pattern, which corresponds to a

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<sup>3</sup> In principle, this strategy could be employed even when the lemma-group of an idiom only includes two lemmas, but only (in the extremely rare cases) when their collocational strength (Stefanowitsch and Gries 2003) is sufficient to prevent a massive increase of noise.

specific form or in some cases to a cluster of forms (which are found significantly more often than others).

(Langlotz 2006a: 177)

This view is perfectly compatible with the present approach, where the base-form of an idiomatic construction is conceived of - and from now on will be referred to - as the “formal pole” of its idiomatic cluster, as specified in §3.5 (the term “base-form” will however be retained in Langlotz's quote below). However, the formal pole of an idiomatic cluster can be approached in two different ways. On the one hand, it is possible to adopt a convention-based perspective, simply equating the formal pole of an idiomatic cluster with the entry-form of the idiom found in dictionaries. Alternatively, it is possible to adopt an empirical approach which derives the formal pole directly from the data<sup>4</sup>. Langlotz, in his analysis of English idioms, chooses the former option:

For *purely practical* reasons, I will equate a given base-form with the idiom's citation-form in idiom dictionaries. I take it for granted that lexicographic practice attempts to record only highly familiar lexicalised constructions belonging to the *langue* of a given variety (i.e. those units that are entrenched in the mental lexicons of most speakers). Dictionary citation-forms therefore approximate the present view of a usage-based default construction.

(Langlotz 2006a: 178, italics original)

However, it is not to be taken for granted that this *a priori* perspective reflects the tendencies which can be observed in the speakers' use of idiomatic constructions. Dealing with the English language, which displays a very poor morphology and a rather rigid syntax, the choice to equate the formal pole of an idiomatic cluster with the entry-form of a dictionary might be viable, since the infinitive form of the verb overlaps with other verb forms, and the word order is to a large extent fixed. Nevertheless, this option is surely less than ideal in the analysis of data from a language with a much richer morphology and a more flexible syntax, like Italian. In particular, verbal inflections represent an issue to be handled with care, in order to reach a sensible identification of an idiomatic cluster's formal pole. In Sorge's (2010) study, the entry-form of each idiom features the present infinitive form of the main verb; however, it is problematic to consider it as the formal pole of the idiomatic

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<sup>4</sup> Admittedly, the latter option may be problematic when dealing with very large samples of data, and the adoption of more top-down criteria in some cases may be necessary.

cluster, as it is unlikely to be the most frequent form in real usage: in Italian, the infinitive just represents a citation-form and does not reflect the majority of the forms which can be found in real data<sup>5</sup>. A similar issue can be observed with regard to syntactic structures, where the constituent order of the entry-form may not always exhaust all the syntactic patterns substantially used by native speakers in real language events. Therefore, I decided to take a frequency-based perspective on the formal pole: first, I took into consideration the patterns which can be found in the selected sample of data; then, on the basis of what could be observed in the occurrences, I defined the formal pole.

While intuitively, it would seem reasonable to expect to have one or two forms taking the lion's share, the empirical data showed a much less straightforward reality. It was indeed possible to observe some idioms where a few verbal forms and/or syntactic patterns account for the vast majority of the actual occurrences; however, the occurrences of some other constructions are characterized by many different verbal forms and syntactic patterns each displaying an extremely low frequency (and of course, there are also some idioms which show a high level of variety with regard to verbal forms but not to phrase orders or the other way round). Therefore, I established that only the verbal and syntactic forms which reached a minimum frequency threshold of 5% would be included in the formal pole of an idiom.

Although 5% may seem a very low percentage, the high level of variation empirically identified in the data-analysis suggests that the choice of a relatively low threshold is reasonable, in order to reduce the risk of drawing too strict a distinction between similar forms which are probably better seen as distributed along a continuum (it being understood that the establishment of a threshold is at some point necessary). In order to have an idea of the range of variation in the figures empirically detected in the analysis of my data, let us compare for instance the two idiomatic constructions illustrated in (3) and (4), *avere un cuore d'oro* ("to have a heart of gold") and *mettere alle corde* ("to put somebody against the ropes"), whose figures are reported in Tab. 5.2 and Tab. 5.3, respectively. In each table, I distinguish between two columns: one lists the most frequent verbal forms occurring with the idiom taken into

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5 Cf. e.g. the third person singular masculine of the past tense in Arabic, or the first person singular of the present tense in Latin and Greek.

consideration (including the absence of verb), while the other illustrates its most frequent phrase orders. The former case is particularly striking, because in the vast majority of the occurrences the keywords belonging to the lemma-group of the idiomatic construction appear in verbless adverbial phrases (illustrated in §5.2.1 below). As a consequence, although it sounds paradoxical, the most frequent verbal form for this expression is “No Verb”<sup>6</sup>.

- (3)   Avere    un    cuore   d' oro.  
 have:INF a.MSG heart.SG of gold.SG.  
 “To have a heart of gold,” meaning to be very kind and generous.

- (4)   Mettere a-lle    corde  
 put:INF to-the.FPL rope.PL.  
 “to put somebody against the ropes,” meaning to put them in a difficult situation.

Tab. 5.2: the formal pole of *avere un cuore d'oro*.

FORMAL POLE	
VERBAL FORM	PHRASE ORDER
No Verb (77%) Avere present 3sg (7%)	AdvP (79%) V NP(Obj) (21%)

Tab. 5.3: the formal pole of *mettere alle corde*.

FORMAL POLE	
VERBAL FORM	PHRASE ORDER
Past participle (19%) Infinitive (15%) Simple present 3sg (13%) Present perfect 3sg (9%) Gerund (6%)	NP(Sbj) V AdvP NP(Obj) (19%) V(pstpart) AdvP (16%) NP(Sbj) Aux V AdvP NP(Obj) (13%) V(Inf) AdvP NP(Obj) (9%) NP(Sbj) Aux V AdvP (7%) V(ger) AdvP NP(Obj) (5%) NP(Sbj) NP(Obj) Aux V AdvP (5%)

### *A more encompassing view of variation parameters*

Another relevant point of divergence between Langlotz's study and my own piece of work concerns the parameters of variation adopted and their application to the analysis of data. With regard to formal variation, the parameters defined and employed by

<sup>6</sup> This case seems to be a particularly good example of how relying on dictionary entries to define the formal pole of the idiomatic cluster of a construction can be misleading.

Langlotz are rather clearly defined and seem suitable to be applied to my analysis as they are. The only caveat is that “lexical substitution” should be converted into “lexical variation”, because sometimes it is possible to observe lexical insertions, besides replacements. On the other hand, the dimension of meaning is much less straightforwardly observable. Therefore, although the parameters of semantic variation defined by Langlotz represent a valuable and elegant tool to describe meaning change in idiomatic variants, it seems appropriate to provide a looser, more encompassing definition of these variables.

As anticipated in §3.5, here variation in meaning will be extended to include several distinct kind of features: semantic, pragmatic, affective, socio-cultural, cognitive, discourse, and situational, as suggested by e.g. Cameron and Deignan (2006) and Gibbs and Cameron (2008). Nevertheless, these scholars failed to provide an explicit characterization of these dimensions and these labels are likely to assume a range of distinct meanings to different readers. Therefore, for clarity's sake, I redefined each of these dimensions as reported below:

- *semantic*: the basic meaning of the idiom;
- *pragmatic*: the contextual enrichment;
- *affective*: the beliefs, values, and attitudes associated with a particular construction;
- *socio-cultural*: the social connotation of an idiom;
- *cognitive*: the mental association with other concepts;
- *discourse*: the dynamics of the current discourse event;
- *situational*: the situated communicative event<sup>7</sup>.

While each of these dimensions surely plays a role in communicative events, it should not be taken for granted that all of them will affect all the occurrences of an idiom. More importantly, there are a couple of observations which can be made with regard to these labels. First of all, it is possible to opine that there is some degree of overlap between the dimensions they portray. Second, there is no way to allocate a given factor to one or more of these categories rigorously, and most probably different people would not agree on the classification of meaning phenomena according to

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<sup>7</sup> This aspect is the most difficult to take into account when using corpus-data.

these parameters. In other words, the decision to allocate a particular phenomenon to a certain dimension would be to seem extent arbitrary and debatable. Nevertheless, I suggest that there is actually no reason to draw a clear-cut distinction between these dimensions. Rather, in my view they should be seen as partly overlapping areas of a flexible, multi-faceted space, where both Weinberg's *composition* and *decomposition* laws simultaneously apply<sup>8</sup>. Therefore, Langlotz's "semantic variation" pole will be designated the more general, comprehensive label of "meaning variation", and its parameters, while retaining the same descriptive categories ('lexicalized polysemy', 'meaning adaptation', and 'ambiguation'), will be considered as the result of an operation of *compression of the degrees of freedom* of the idiomatic occurrence<sup>9</sup>.

#### *A less ambiguous definition of variation patterns*

In §2.2.1, I introduced Langlotz's variation patterns, summarized in Tab. 5.4 below. In my view, while the framework is generally sound, there are a few problems with the terminology adopted to label these patterns. Some of the terms Langlotz used look rather misleading, and ultimately seem unconvincing. In addition, it is possible to notice some inaccuracies in the definition of a couple of patterns. In the next paragraphs, I will first briefly address each of these points, and then propose a slightly modified framework.

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8 In General Systems Theory, Weinberg's *composition law* states that, "the whole is more than the sum of its parts.", while his *decomposition law* asserts that "the part is more than a fraction of the whole." (Ward 2002: 49; see also Kelso 2008; 2012).

9 The notion of *degrees of freedom*, borrowed from classical mechanics, indicates the number of independent variables that define its configuration. In order to model a system, these degrees of freedom are generally reduced, or more technically *compressed*, into a smaller number. On the application of this notion in cognitive science by proponents of DST, see e.g. Thelen and Smith (1994); Kelso (1995); Thelen (1995b); Turvey and Carello (1995); Ward (2002); Rączaszek-Leonardi and Kelso (2008); Rączaszek-Leonardi (2010, 2013).

Tab. 5.4: Langlotz's variation patterns.

Variation pattern	Definition
Usual variant	a frequently recurring variant of an idiom which does not entail any modification in the meaning. It can be seen as a lexicalized alteration of the construction.
Systematic variant	a variant which simply denotes modifications in the morphosyntactic and syntactic structure.
Systematic occasional variant	a variant which denotes modifications in the morphosyntactic and syntactic structure, and whose meaning is affected by contextual integration.
Intentional creation of a variant	a variant which reflects the intention to cause certain perlocutionary effects in the interlocutor playing on the relationship between the literal and the figurative meaning of an idiom.
Non-intentional, erroneous variant	a non-intentional variant; an idiomatic “slip-of-the-tongue”.
Pseudo-variant	a variant that cannot activate the idiomatic meaning but can only be interpreted literally.

First of all, consider the label “systematic occasional variant”, which is supposed to cover modifications in the morphosyntactic and syntactic structure and whose meaning is affected by contextual integration; this kind of variant can be due to the effect of the principle of topic-indication or (inconspicuous) literal-scene manipulation. The use of the adjective “occasional” is due to the need to distinguish this kind of variants from “systematic variants”, which simply denote modifications in the morphosyntactic and syntactic structure, compared to the formal pole, but whose meaning is not affected by contextual integration; this kind of variant is effected by the principle of constructional adaptation. Nevertheless, the use of both adjectives “systematic” and “occasional” in the same label seems an oxymoron, and it is likely to confuse the reader, rather than help them. For this reason, here I will prefer to avoid this term, replacing it with “context-bound grammatical variants”, which simply emphasizes the integration of grammatical modification with the use of an expression in context to bring about the meaning of a specific utterance.

Moreover, Langlotz uses the term “intentional creation of a variant” to refer to those variants which reflect the intention to cause certain perlocutionary effects in the interlocutor playing on the relationship between the literal and the figurative meaning of an idiom; this is a kind of variant which can be triggered by the principles of



(conspicuous) literal-scene manipulation, topic-related literal-scene manipulation or ambiguity. This label is nevertheless very problematic. Indeed, claims about “intentionality” (and related phenomena such as “consciousness”) are highly controversial and their validity has been at the center of a heated debate in the (cognitive-)linguistic community (cf. Steen 2008; Gibbs 2011). As a result, I prefer to avoid using this label, opting for a more neutral “striking creation of a variant” which, while retaining the emphasis on the creation of a clearly non-conventional variant, allows me to abstain from any claim about the speaker's intentionality to cause perlocutionary effects on the interlocutor<sup>10</sup>. Likewise, when Langlotz's uses the label “non-intentional, erroneous creation of a variant” to refer to “formal blends or contaminations between synonymous or quasi-synonymous idioms”, I will just refer to these as “erroneous variants”.

Finally, the definitions of “usual variant” and “pseudo-variant” also look somewhat controversial. The former is defined as “frequently recurring variants in an idiom which does not entail any modification in meaning. It can be seen as a lexicalized alteration of the construction”. In this definition, there are two claims I would like to mitigate. First of all, stating that these variants do not carry *any modification* in meaning seems rather hasty. It seems more cautious to state that they do not carry *any major modification* in meaning. Second, the characterization of these variants as “frequently recurring” is problematic for several reasons: first, it should be supported by a great deal of empirical data<sup>11</sup>; second, lexical variation is the most difficult to detect in a corpus-informed study; finally, it depends on the definition of “frequent”. As a result, I will not commit myself to claims about frequency, restricting myself to define usual variants as “lexicalized alterations of an idiomatic construction.” With regard to pseudo-variants, the claim that a construction can only be interpreted literally, while its idiomatic meaning is not accessible seems too strong. Therefore, I will limit myself to propose that these variants can only be interpreted literally in context. In the light of these changes, I will be adopting a new version of the

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10 Intuitively, it seems reasonable to assume that while sometimes the speaker could actually be intentionally playing on the relationship between the literal and the figurative level of an idiomatic expression, sometimes this process may be much less conscious.

11 As will be shown in §5.2.2 below, in my data this pattern is one of the least frequent, accounting for a handful of occurrences, only.

framework, which is briefly sketched below<sup>12</sup>:

- *Usual Variant*: a lexicalized alteration of the construction, which does not entail any major modification of its meaning. E.g. *Bleed NP dry → Bleed NP white*;
- *Systematic Variant*: a variant which simply denotes modifications in the morphosyntactic and syntactic structure, compared to the formal pole of the idiomatic cluster of an idiom. This kind of variant is effected by the principle of constructional adaptation. E.g. ***That tightrope was walked** every weekend when Charles and Diana took the train with their nanny from Norfolk to Liverpool Street station in London where their mother met them*. While Langlotz does not make reference to the lexical dimension of these variants, I will include in the definition those lexical items which play a downtoning or intensifying function, without remarkably modifying the meaning of an idiom;
- *Context-Bound Grammatical Variant*: a variant which denotes morphosyntactic and/or syntactic and/or lexical modifications, compared to the formal pole, and whose meaning is affected by contextual integration. This kind of variant can be triggered by the principles of either topic-indication or (inconspicuous) literal-scene manipulation. E.g. *As it once showed the way toward democratic success, today it **blazes the trail toward democratic failure***;
- *Striking Creation of a Variant*: a variant which is very likely to cause certain perlocutionary effects in the interlocutor playing on the relationship between the literal and the figurative meaning of an idiom. This kind of variant can be effected by the principles of (conspicuous) literal-scene manipulation, topic-related literal-scene manipulation or ambiguation. E.g. (from a review of a production of the Shakespearian comedy *Twelfth Night*) *Malvolio deserves almost everthing he gets, but... there is that little stab of shame we feel at the end for having had such fun **pulling his cross-gartered leg** for so long<sup>13</sup>*;
- *Erroneous variant*: a mistake in the use of an idiom, represented by the formal integration with another, semantically similar construction. E.g. *The dust*

12 Although some instances of Italian idioms have already been introduced above, in the present sketch I decided to stick to the English examples provided by Langlotz, in order to facilitate the comparison with the original framework outlined in §2.2.

13 The idiom *pull somebody's leg* means “to tease somebody”. Since the person being teased (a character in the Shakespearian comedy *Twelfth Night*) wears cross garters, the literal and the figurative meaning of the idiom are contextually blended into a single scenario.

*clears* (*the dust settles + the fog clears*). It also includes co-occurrences of the idiom with constructions which convey a contrasting meaning.

- *Pseudo-variant*: a departure from the formal pole can only be interpreted literally in context. E.g. *She kicked the bucket* (to describe a scene in which a hospital attendant accidentally stumbles into a bucket).

In the remainder of the present chapter I will illustrate the analysis of my sample of data, discussing the results of the investigation and drawing some conclusions accordingly. In §5.2, I will first proceed to define the idiomatic clusters of the idioms; then, I will discuss the occurrences and explain on what basis they have been allocated to a specific variation pattern; finally, I will check if it is possible to observe a statistical association between the different idiom patterns and the distinct variation patterns. Should this actually be the case, I will consider which category of one variable is associated to which category of the other variable, the strength of their connection, and the possible motivations at the basis of such an association. In §5.3, I will then discuss the results obtained in the previous section, in the light of the dynamic-systems framework adopted in the present study, also relating the observations made with regard to the typology drawn in the previous chapter to the results of the analysis of real occurrences carried out in the present chapter. In particular, I will discuss the possibility to make any relevant claim at a meta-theoretical level of abstraction, in the perspective of a socially- and ecologically-extended cognitive model based on the key notions of DST. Finally, in §5.4, I will provide some concluding remarks, proceeding to a critical evaluation of the application of the present framework to the analysis of real language data.

## 5.2. Analysis of the real occurrences

As anticipated at the end of §5.1, in the present section I will provide a detailed illustration of the analysis of the 1,809 occurrences of idiomatic constructions in real language events drawn from the *itTenTen* corpus, making use of the modified version of Langlotz's model outlined above. By so doing, I will address Research Question 3, whose aim is to account for the variational behavior of idiomatic constructions in use.

For ease of exposition, this section will be divided into three subsections. First of all, in §5.2.1 I will provide a detailed illustration of the process of detection of the idiomatic cluster summarized in §5.1.2, explaining how both the formal and the meaning pole have been reconstructed, with the aid of some representative examples. Next, in §5.2.2 I will focus on a qualitative evaluation of variation patterns, providing several examples of the different ways in which a single occurrence of an idiomatic construction can deviate from the bundle of values included in the idiomatic cluster, showing that they can range from plain lexicogrammatical adaptations to striking instances of wordplay. Finally, in §5.2.3 I will consider my data from a quantitative perspective: firstly, a relatively simple statistical test will be run in order to test if associations between the idiom classes outlined in the previous chapter and the variation patterns described below can be found; then, a more advanced test will be run in order to obtain more information on the nature of these associations.

### *5.2.1. Defining the idiomatic clusters*

In this subsection, I will outline the process of identification of the idiomatic cluster of each idiom, taking into consideration its dual nature: the present subsection will be divided into two parts. The first one will describe the process of analysis and identification of the verbal forms and phrase orders which constitute the formal pole of a construction's idiomatic cluster, showing how the process is accomplished by looking through the data. The second part will be a brief note to describe the procedure of reconstruction of its meaning pole, which to a significant extent overlaps with the analysis outlined in §4.2.

#### *The formal pole*

As anticipated in §5.1.2, in order to determine the formal pole of the idiomatic cluster, I examined all the occurrences downloaded for each idiom, and included all the verbal forms and syntactic patterns which occurred with a frequency-rate of at least 5% in the formal pole of the idiom. Now the time seems to be ripe for a more detailed

explanation of how the process was carried out, and the clearest way to show how the procedure took place is through the illustration of a few examples. Although the occurrences downloaded for the analysis include large chunks of text, for the purposes of the present study it will be sufficient to quote the sentence including the lemma-group of the idiom, and the minimum context necessary to make sense of the excerpt.

I will begin with two idiomatic expressions which represent quite opposite extremes. Therefore, we can consider again the examples (3) and (4), and Tab. 5.2 and Tab. 5.3, illustrated in the previous section. The idiom *avere un cuore d'oro* (“to have a heart of gold”) shows a very limited number of forms which recur with a fairly high level of frequency. All the instances listed below represents examples of the occurrence of the lemma-group in a (verbless) adverbial phrase:

- (5) Un uomo rude, *da-l* cuore *d' oro* che non ama  
 a.MSG man.SG curt.SG from-the.MSG heart.SG of gold.SG that NEG love:PRES.3SG  
 i locali troppo snob ma che non vuole mai rinunciare  
 the.MPL venue.PL too snobbish but that NEG want:PRES.3SG never renounce:INF  
 a-lla buona tavola.  
 to-the.FSG good.SG table.SG.

“A curt man, with a golden heart, who doesn't like overly snobbish venues, but who never wants to give up the good food.”

- (6) Giacca di pelle, capelli lunghi, e sguardo da “cattivo *da-l*  
 jacket.SG of leather.SG hair.PL long.PL and gaze.SG as bad.SG from-the.MSG  
*cuore d' oro*” fanno di Jackie uno de-i migliori attori  
 heart.SG of gold.SG make:PRES.3PL of Jackie one.M of-the.MPL best.PL actor.PL  
 de-gli ultimi anni (...)  
 of-the.MPL latest.PL year.PL.

“A leather-jacket, long hair, and the gaze of a 'bad guy with a golden heart' make Jackie one of the best actors of the last few years...”

- (7) Il secondo romanzo de-lla nuova serie di Amos Daragon,  
 the.MSG second.SG novel.SG of-the.FSG new.SG series.SG of Amos Daragon  
 l' astuto ragazzo *da-l* cuore *d' oro* creato  
 the.MSG cunny.SG boy.SG from-the.MSG heart.SG of gold.SG create:PSTPART.MSG<sup>14</sup>  
 da Bryan Perro(...)  
 by Bryan Perro.

“The second novel of the new Amos Daragon series, the cunny guy with a golden heart created by Bryan Perro...”

14 It will be possible to observe that sometimes the glosses will specify the gender and number of past participle forms, whereas sometimes they will not. This is due to the fact that in Italian the past participle can behave as either an adjective or as a verb, depending on the context. On the use of the different verbs forms of the past tense in Romance languages, see e.g. Squartini and Bertinetto (2000).

- (8) Era una persona così gentile, riservata, anche un po' timida  
 be:IMPF.3SG a.FSG person.SG so kind.SG discreet.SG even a.MSG bit.SG shy.SG  
 e con un cuore d' oro.  
 and with a.MSG heart.SG of gold.SG

“He was such kind, discreet person, even a bit shy and with a golden heart.”

All the excerpts presented above are examples of occurrences of the lemma-group in adverbial phrases without a verb, which make up almost 80% of the examples analyzed; consequently, these formal patterns represent the vast majority of the structures included in the formal pole of the idiomatic cluster which exert the strongest attractive force (cf. §3.5). Nevertheless, this pole also includes a couple of other, much weaker patterns: the third person of the simple present of the verb *avere* (“to have”) with regard to verbal forms, and the V NP(Obj), pattern with regard to phrase orders. The former can be observed, for instance, in example (9), while the latter (more frequent) can be observed in both examples illustrated below:

- (9) Lui<sup>15</sup> è dolc-issimo, ma soprattutto bell-issimo, e lei  
 M.3SG.OBJ be:PRES.3SG sweet-INTS.SG but above-all beautiful-INTS.SG and F.3SG.OBJ  
 ha un cuore d' oro. De-lle persone rare di questo  
 have:PRES.3SG a.MSG heart.SG of gold.SG some.FPL person.PL rare.PL of this.MSG  
 tempo!  
 time.SG

“He is very sweet, but above all very beautiful, and she has a golden heart. Rare people to be found today.”

- (10) Sei meravigliosa, e il tuo alzare la coppa insieme  
 be:PRES.2SG wonderful.SG and the.MSG your.MSG raise:INF the.FSG cup.SG together  
 a Loredana ha dimostrato che hai un cuore d'  
 to Loredana have:PRES.3SG show:PSTPART that have:PRES.2SG a.MSG heart.SG of  
 oro, (...)  
 gold.SG

“You are wonderful, and your raising the cup together with Loredana has shown us that you have a heart of gold...”

As can be noticed by casting a glance at Tab. 5.2 above, these forms do not account for all the occurrences analyzed; below, it is possible to observe an example of the very rare exceptions to the prevailing patterns, where the lemma-group is found in a verb phrase headed by the verb *nascondere* (“to hide”):

15 In the colloquial use of the Italian language, the object forms of the third person pronouns *lui* (masculine singular), *lei* (feminine singular), and *loro* (plural) are also used in subject position, while the subject forms are normally only found in formal contexts.

- (11) (...) sotto la pelle de-l Lupo *nascondete un cuore d'*  
 under the.FSG skin.SG of-the.MSG wolf.SG hide:PRES.2PL a.MSG heart.SG of  
*oro, dite la verità (...)*  
 gold.SG say:IMP.2PL the.FSG truth.SG  
 “...under a wolf's skin you hide a heart of gold, tell the truth...”

As pointed out in the previous section, not all idioms show such a strong convergence toward a few forms which take the lion's share of the occurrences. The construction *mettere alle corde* is a paradigmatic example of an idiomatic expression whose use is rather variegated, and therefore whose idiomatic cluster includes several distinct forms. With regard to verb forms, the past participle (lumping genders and numbers all together) is the most frequent tense, featuring in 19% of the occurrences, as can be observed in Tab. 5.3 above. Consider the following two examples:

- (12) Nessuno sostiene che non si debba salvare un'  
 nobody assert:PRES.3SG that NEG IMPR must:PRES.SUBJ.3SG save:INF a.FSG  
 istituzione *messa a-lle corde da-i pesanti tagli*  
 institution.SG put:PSTPART.FSG to-the.FPL rope.PL by-the.MPL heavy.PL cut.PL  
 de-l governo (...)  
 of-the.MSG Government.SG  
 “Nobody asserts that an institution put to the ropes by the Government's heavy cuts should not be saved...”
- (13) Insomma, non pugili, ma uomini e donne *messi a-lle*  
 hence NEG boxer.PL but man.PL and woman.PL put:PSTPART.MPL to-the.FPL  
*corde da-lla vita*  
 rope.PL from-the.FSG life.SG  
 “In other words, not boxers, but man and women put to the ropes by life.”

Quantitatively, the next most frequent verb form is the infinitive, which appears in the 15% of the tokens, followed by the simple present conjugated in the third person singular. An example of each form can be observed in (14) and (15) below, respectively:

- (14) Eppure da-lla loro parte le assicurazioni e lo Stato  
 and-yet on-the.FSG their side.SG the.FPL insurance-company.PL and the.MSG State.SG  
 hanno tutti i mezzi per *mettere a-lle corde i*  
 have:PRES.3PL all.MPL the.MPL mean.PL to put:INF to-the.FPL rope.PL the.MPL  
 truffatori (...)  
 crook.PL

“And yet the insurance companies and the State have all the resources at their disposal to put the crooks to the ropes...”

- (15) Il capitalismo di Stato pianificato da-l governo di  
 the.MSG capitalism.SG of State.SG plan.PSTPART.MSG by-the.MSG Government.SG of  
 Pechino mette a-lle corde il laissez-faire liberista  
 Beijing put:PRES.3SG to-the.FPL rope.PL the.MSG laissez-faire.SG liberist.SG  
 de-gli Stati Uniti.  
 of-the.MPL State.PL United.PL

“The state-capitalism planned by the Beijing Government puts the American liberist laissez-faire to the ropes.”

With regard to the syntactic patterns which are part of the formal pole of the idiomatic cluster of *mettere alle corde*, the most frequent phrase order is NP(Sbj) V AdvP NP(Obj), with 19% of occurrences, which is illustrated by examples along the lines of (15) above and (16) below (the latter is a football match report):

- (16) Ne-lla ripresa, come la settimana precedente, la Sestrese  
 in-the.FSG restart.SG as the.FSG week.SG previous.SG the.FSG Sestrese  
 mette più volte a-lle corde il Savona con un lungo  
 put:PRES.3SG more time.PL to-the.FPL rope.PL the.MSG Savona with a.MSG long.SG  
 predominio (...)  
 predominance.SG

“In the second half, as in the previous week, Sestrese more than once puts Savona to the ropes with a long predominance...”

The following syntactic patterns are V(pstpart) AdvP, which features in 16% of the occurrences and NP(Sbj) Aux V AdvP NP(Obj), which can be observed in 13% of my data. Examples of the former phrase order are illustrated in (12) and (13) above and in (17) below, while an instance of the latter can be seen in (18) below:

- (17) La vittima de-l racket, infatti, messo a-lle corde  
 the.FSG victim.SG of-the.MSG racket.SG indeed put:PSTPART.MSG to-the.FPL rope.PL  
 da-gli inquirenti, avrebbe ammesso solo in parte quanto  
 by-the.MPL magistrate.PL have:PRES.COND.3SG admit:PSTPART only in part.SG that  
 gli era accaduto.  
 M.3SG.DAT be:IMPF.3SG happen:PSTPART

“The victim of the racket, indeed, put to the ropes by the magistrates, would have admitted only partly what he underwent.”

- (18) L'altro-ieri, con un' intervista urticante de-lle sue,  
 the.MSG other.SG-yesterday with an.FSG interview.SG stinging.SG of-the.FPL hers.FPL  
 Barbara Palombelli ha messo a-lle corde Bruno Vespa  
 Barbara Palombelli have:PRES.3SG put:PSTPART.MSG to-the.FPL rope.PL Bruno Vespa  
 (...)



“The day before yesterday, with a characteristically stinging interview, Barbara Palombelli has put Bruno Vespa to the ropes...”

The multiplicity of forms which can be observed in the idiomatic cluster of *mettere alle corde* provides some support for the adoption of a 5% threshold. On the one hand, the choice of a higher cut-off point (e.g. 10%) would force me to disregard several distinct verb forms and syntactic patterns which instead occur in a substantial amount of the occurrences of this idiomatic construction. On the other hand, choosing a lower threshold would lead to the inclusion of virtually any occurrence of the expression, undermining the notion of idiomatic cluster itself.

While the two idioms which we have been illustrated above, *avere un cuore d'oro* (5-11) and *mettere alle corde* (12-18), display two opposite tendencies, they can be considered as representing the two poles of a continuum along which the other idiomatic constructions investigated in the present study can be distributed. Indeed, the occurrences of the vast majority of these idioms are neither as rigid as *avere un cuore d'oro*, nor as flexible as *mettere alle corde*. For instance, we can now take into consideration the expressions illustrated in (19) below, whose data relative to the formal pole of the idiomatic cluster are reported in Tab. 5.5:

- (19) Essere un sepolcro imbiancato.  
 be:INF a.MSG sepulchre.SG whitewashed.SG  
 “to be a whitewashed sepulchre,” meaning to be a hypocrite and a fake<sup>16</sup>.

Tab. 5.5: the formal pole of *essere un sepolcro imbiancato*.

FORMAL POLE	
VERBAL FORM	PHRASE ORDER
Present 3pl (27%)	NP(Sbj) V NP(Cs) (57%)
Present 3sg (25%)	V NP(Sbj) (7%)
Present 2pl (8%)	NP(Sbj) V AdjP(Cs) (6%)
Present 1pl (7%)	
Infinitive (5%)	

In the case of this idiomatic construction, it is possible to observe that there is a certain discrepancy between the data relative to the verbal forms displayed in the occurrences of the idiom in use and those relative to the phrase orders. Focusing on

<sup>16</sup> In a sense, the meaning of the phrase *sepolcro imbiancato* resembles that of the English *holier-than-thou*.

the former first, it is possible to notice two main forms which almost equally share the majority of the occurrences, followed by three more forms, which display a much weaker attractive force. In (20) and (21) it is possible to observe a couple of occurrences of this idiom with the verb conjugated at the third person plural of the simple present, while (22) and (23) report a couple of instance of the idiom with the verb conjugated in the third person singular.

- (20) (...) e di fronte a DIO non ci sono le pubbliche virtù  
 and of front.SG to God NEG there be:PRES.3PL the.FPL public.PL virtue.PL  
 e i privati vizi, troppi cattolici sono de-i  
 and the.MPL private.PL vice.PL too-many Catholic.PL be:PRES.3SG some.MPL  
*sepulcri imbiancati* nascondono i peggiori delitti ne-i  
 sepulchre.PL whitewashed.PL hide:PRES.3PL the.MPL worst.PL felony.PL in-the.MPL  
 loro cuori (...)  
 their heart.PL

“...and in front of God there are no public virtues and private vices, too many Catholics are whitewashed sepulchres, they hide the worst sins in their hearts...”

- (21) (...) quelle meschine persone che si nascondono dietro il  
 those.F mean.PL person.PL that REFL.3 hide:PRES.3PL behind the.MSG  
 perbenismo, ma che dietro hanno il marcio... sono  
 respectability.SG but that behind have:PRES.3PL the.MSG rotten.SG be:PRES.3PL  
*sepulcri imbiancati*, come è scritto ne-lla Bibbia  
 sepulchre.PL whitewashed.PL like be:PRES.3SG write:PSTPART.MSG in-the.FSG Bible.SG  
 (...)

“...those mean persons who hide behind (so-called) respectability but who have the rotten filth inside... they are whitewashed sepulchres, as written in the Bible...”

- (22) E' una forma di governo come un' altra, tutto  
 be:PRES.3SG a.FSG form.SG of government.SG like a.FSG other.SG everything  
 è basato su-lla menzogna tutto è  
 be:PRES.3SG base:PSTPART.MSG on-the.FSG lie.SG everything be:PRES.3SG  
*sepulcro imbiancato*.  
 sepulchre.SG whitewashed.SG

“It's a form of government like any other, everything is based on a lie, everything is whitewashed sepulchre.”

- (23) (...) dove non respira un' anima d' uomo ma un corpo di  
 where NEG breathe:PRES.3SG a.FSG soul.SG of man.SG but a.MSG body.SG of  
 schiavo, tutte le riforme sono inutili; la cosa  
 slave.SG all.FPL the.FPL reform.PL be:PRES.3PL useless.PL the.FSG thing.SG  
 rabbellita, addobbata con lusso, è *sepulcro imbiancato*,  
 embellished.SG adorned.SG with luxury.SG be:PRES.3SG sepulchre.SG whitewashed.SG  
 e non altro.  
 and NEG other.SG

“...where it is the body of a slave rather than the soul of a man who breaths, any reform is useless: the embellished thing, adorned with luxury, is a whitewashed sepulchre, and nothing

else.”

On the other hand, this idiomatic construction is much less flexible with regard to word order, where the pattern NP(Sbj) V NP(Cs) is by far the most common, followed by NP(Sbj) V AdjP(Cs). Actually, the predominance of this phrase order can hardly be considered surprising, since the lemma-group of this idiom includes a copular verb, which is strictly related to the Sbj V NP/AdjP(Cs) syntactic pattern. In (24) below, it is possible to find an occurrences which displays the most frequent pattern occurring with an overtly expressed subject, whereas (25) provides an example of this pattern where the subject is omitted<sup>17</sup>.

- (24) (...) uomo di potere, quindi abile regista de-lla sua  
 man.SG of power.SG therefore capable.SG director.SG of-the.FSG his.FSG  
 immagine, Lorenzo è un ipocrita sepolcro imbiancato  
 image.SG Lorenzo be:PRES.3SG a.MSG hypocrite.SG sepulchre.SG whitewashed.SG  
 da inquisitore, un finto passionale sotto Napoleone, perché queste  
 as inquisitor.SG a.MSG fake.SG passionate.SG under Napoleon because these.F  
 sono le immagini che il potere vuole dare di  
 be:PRES.3PL the.FPL image.PL that the.MSG power.SG want:PRES.3SG give:INF of  
 sé in due sue diverse incarnazioni.  
 REFL.3 in two its.FPL different.PL incarnation.PL

“...man of power, and so capable manager of his own image, Lorenzo is an inquisitor-like hypocrite whitewashed sepulchre as, a fake passionate under Napoleon because these are the images that the power wants to convey of itself in two distinct manifestations.”

- (25) Sei veramente un sepolcro imbiancato, fa-tti una  
 be:PRES.3SG really a.MSG sepulchre.SG whitewashed.SG make:IMP.REFL.2SG a.FSG  
 cura per l' alzheimer che è meglio - detto con  
 cure.SG for the.MSG Alzheimer which be:PRES.3SG better say:PSTPART.MSG with  
 calma olimpica.  
 calm.SG olympic.SG

“You are really a whitewashed sepulchre, you had better cure your Alzheimer, said with an unflappable calm.”

In (26) below, it is instead possible to observe an instance of the pattern NP(Sbj) V AdjP(Cs), where the phrase *sepolcro imbiancato* appears as the antecedent of the subject relative pronoun *che*:

17 It is worth emphasizing that Italian is an instance of what linguists (especially in the generative tradition, see e.g. Chomsky 1981; Haegeman 1991) frequently label *pro-drop* languages, i.e. a language which allows the use of implicit subjects (in fact, the Italian language makes an extensive use of this strategy).

- (26) Gesù rimproverava gli ipocriti con parole terribili: *sepolcri*  
 Jesus reprimand:IMPF.3SG the.MPL hypocrite.PL with word.PL terrible.PL sepulchre.PL  
*imbiancati che fuori sono puliti e bianchi* ma dentro  
 whitewashed.PL that outside be:PRES.3PL clean.PL and white.PL but inside  
 nascondono il marciume di una persona in decomposizione.  
 hide:PRES.3PL the.MSG filth.SG of a.FSG person.SG in decomposition.SG  
 “Jesus used to reprimand hypocrites with terrible words: whitewashed sepulchres, which are clean and white outside, but inside they hide the filth of a decomposing body.”

I will now focus on the idiom in (27) below, whose occurrences display a relatively high level of variation with reference to verbal tenses, but not so much in regard to phrase orders, as can be observed in Tab. 5.6.

- (27) Fare venire la pelle d' oca.  
 make:INF come:INF the.FSG skin.SG of goose.SG  
 “To give goosebumps to somebody,” meaning to strongly scare or disgust them.

Tab. 5.6: the formal pole of *fare venire la pelle d'oca*.

FORMAL POLE	
VERBAL FORM	PHRASE ORDER
<i>Fare</i> present 3sg + <i>Venire</i> infinitive (35%)	NP(Sbj) (AdvP/NP[Obl]) <i>Fare</i> V NP(Obj) (67%)
<i>Fare</i> present 3pl + <i>Venire</i> infinitive (19%)	NP(Sbj) (AdvP) Aux <i>Fare</i> (pstpart) V(inf)
<i>Fare</i> present perfect 3sg + <i>Venire</i> infinitive (19%)	NP(Obj) (27%)
<i>Fare</i> infinitive + <i>Venire</i> infinitive (11%)	
<i>Fare</i> present perfect 3pl + <i>Venire</i> infinitive (6%)	

This idiom denotes a cause-effect action, which in Italian is often expressed employing a periphrasis with verb *fare* (which usually takes a finite form), followed by the infinitive form of the relevant verb, in this case *venire*. As can be observed in the Tab. 5.6, the most frequent pattern features the verb *fare* conjugated in the third person of the simple present tense (35%). Instances of this pattern can be observed in the two examples illustrated below:

- (28) Un' idea che *fa venire la pelle d' oca* e che  
 an.FSG idea.SG that make:PRES.3SG come:INF the.FSG skin.SG of goose.SG and that  
 contrasta, come ha già denunciato l' Ecre,  
 contrast:PRES.3SG as have:PRES.3SG already denounce:PSTPART.MSG the.MSG Ecre  
 (...), con la stessa convenzione di Ginevra.  
 (...) with the.FSG same.FSG convention.SG of Geneva  
 “An idea which gives goosebumps and which contrasts, as already denounced by the Ecre, (...), with the Geneva convention itself.”

- (29) La crisi di governo per ora, a dispetto di ciò che Bersani  
 the.FSG crisis.SG of government.SG for now to spite.SG of what that Bersani  
 sbandiera, è chiaramente scongiurata. Quel che però  
 flaunt:PRES.3SG be:PRES.3SG clearly prevent:PSTPART.FSG That which yet  
*fa venire la pelle d' oca* è che questa  
 make:PRES.3SG come:INF the.FSG skin.SG of goose.SG be:PRES.3SG that this.F  
 situazione possa ripeter-si a breve termine.  
 situation.SG may:PRES.SUBJ.3SG repeat:INF.REFL.3 to short.SG term.SG

“The political crisis, in spite of what Bersani is flaunting, is clearly avoided. What nevertheless, gives goosebumps, is (the fact) that this situation may repeat itself in the short term.”

In terms of frequency, the following forms, which cover the 19% of the total occurrences each, are the third person plural of the simple present tense, and the third person singular of the present perfect tense. An instance of the former case can be observed in (30) below, while an example of the latter case is illustrated in (31), where the verb *fare*, which carries the causative load of the construction, is preceded by the auxiliary verb *avere* (“to have”).

- (30) Alcuni hanno parlato anche di un ufficiale de-ll' esercito  
 some.M have:PRES.3PL speak:PSTPART also of a.MSG official.SG of-the.MSG army.SG  
 libico: sarebbe lui a gestire e coordinare il  
 Libyan.SG be:PRES.COND.3SG M.3SG.OBJ to manage:INF and coordinate:INF the.MSG  
 traffico de-gli schiavi e a organizzare la loro permanenza  
 trade.SG of-the.MPL slave.PL and to organize:INF the.FSG their permanence.SG  
 ne-l Paese de-l Colonnello. Le storie de-i  
 in-the.MSG country.SG of-the.MSG Colonel.SG The.FPL story.PL of-the.MPL  
 sopravvissuti *fanno venire la pelle d' oca*.  
 survivor.PL make:PRES.3PL come:INF the.FSG skin.SG of goose.SG

“Somebody has also mentioned an official of the Libyan army: he would be the one who runs and coordinates the slave-trade and who organizes their permanence in the Colonel's country. The survivors' stories give goosebumps.”

- (31) Non nascondo che quello che hai raccontato de-lle vipere  
 NEG hide:PRES.1SG that that.M that have:PRES.2SG tell:PSTPART of-the.FPL viper.PL  
 mi *ha fatto venire la pelle d' oca*.  
 I.SG.DAT have:PRES.3SG make:PSTPART come:INF the.FSG skin.SG of goose.SG  
 La paura de-i serpenti rappresenta una de-lle mie  
 the.FSG fear.SG of-the.MSG naked.PL represent:PRES.3SG one.FSG of-the.FPL my.FPL  
 fobie più radicate (...)  
 phobia.PL more entrench:PSTPART.FPL

“I will not deny that what you said about vipers gave me goosebumps. The fear of snakes represents one of my most entrenched phobias.”

Turning to phrase orders, the situation is rather different. As can be clearly observed in

Tab. 5.6, there is a pattern which occurs considerably more often than any other: NP(Sbj) (AdvP) *Fare* V NP(Obj)<sup>18</sup>, which accounts for two thirds of the total occurrences of the idiom. Extract (32) below is an example of the syntactic pattern featuring an interposed adverbial phrase between the subject NP and the verb *fare*, whereas the one in (33) is an instance of the same pattern without the interposed adverbial phrase:

- (32) Il cantante aveva una voce acuta e roca, che ogni  
 the.MSG singer.SG have:IMPF.3SG a.FSG voice.SG acute.SG and hoarse.SG that every  
 tanto esplodeva in acute e tremende risate che *a-l*  
 while explode:IMPF.3SG in acute.PL and tremendous.PL laugh.PL that at-the.MSG  
*ragazzo facevano venire la pelle d'oca.*  
 boy.SG make:IMPF.3PL come:INF the.FSG skin.SG of goose.SG

“The singer had an acute and hoarse voice, which every now and then used to burst into acute and tremendous laughs which gave goosebumps to the boy.”

- (33) Certo questo governo Berlusconi *fa venire la pelle d'*  
 sure this.M Government.SG Berlusconi make:PRES.3SG come:INF the.FSG skin.SG of  
*oca per la spregiudicatezza con la quale difende*  
 goose.SG for the.FSG lack-of-scruples.SG with the.FSG that defend:PRES.3SG  
 i propri interessi (...)  
 the.MPL own.PL interest.PL

“Sure, this Berlusconi government gives goosebumps for the lack of scruples in defending its own interests...”

In the following excerpts it is possible to observe an instance of the pattern including an auxiliary verb:

- (34) Il vero nemico – dicono i big de-lle TLC -  
 the.MSG true.SG enemy.SG say:PRES.3PL the.MPL big.PL of-the.FPL TLC  
 sono adesso i network sociali tipo Facebook. Ma anche  
 be:PRES.3PL now the.MPL network.PL social.PL type.SG Facebook but even  
 loro, dopo un successo iniziale che *ha fatto venire*  
 3PL.OBJ after a.MSG success.SG initial.SG that have:PRES.3SG make:PSTPART come:INF  
*la pelle d'oca a-i gestori (...)*  
 the.FSG skin.SG of goose.SG to-the.MPL manager.PL

“The true enemy – the big names of TLC say – are now the social networks like Facebook. But even these, after an initial success which gave goosebumps to the telephone line managers...”

Although the four idioms above only represents a small fraction of my sample of

<sup>18</sup> It is not always possible to notice the presence of an adverbial phrase between the subject NP and the verb *fare*. Here, both the excerpts with and without an interposed adverbial phrase have been lumped together.

idiomatic constructions, they illustrate the process whereby the idiomatic cluster of each construction was detected, and on the variation which can be found even among just a couple of dozens of expressions. In particular, the illustration of the excerpts offered above shows the rather impressive width of the range of variation between relatively rigid constructions and more flexible ones. As a consequence, it should allow to fully appreciate the relevance of the establishment of a cut-off point below which a formal pattern should be excluded from the (formal pole of the) idiomatic cluster of the relevant saying. Also, it should clarify the importance of choosing a threshold which is rather low, being nevertheless careful to preserve its usefulness; as highlighted above, the choice of 5% seems a good compromise. I will now provide an outline of how the meaning pole of the idiomatic cluster was defined.

#### The meaning pole

The detection of the meaning pole of the idiomatic cluster of a construction is more challenging than the reconstruction of the formal pole. Indeed, while there are some limits to the possible variation of the form of a linguistic unit, the situation is a lot more complex with reference to its meaning. As specified in §4.2.1, the meaning of each expression is likely to differ from person to person; as a result, it is very unlikely that the analysis of the occurrences downloaded for each idiom allows the analyst to distil a series of traits which can exhaustively describe the meaning pole of the idiomatic cluster of an idiom, given the multiplicity of variables which come into play. Keeping in mind that the meaning of an expression in context is often a matter of interpretation, which may capture different kinds of nuances, the observation of my sample of occurrences of each idiom basically overlapped with the conventional meaning of the construction. For this reason, the meaning pole of the idiomatic cluster of an idiom will be seen to be constituted by three main elements:

- the definition provided by Sorge (2010) in her dictionary;
- the combination of motivation patterns which was the object of the analysis of the previous chapter (see §4.2).
- the idiom category that the construction was allocated to in ch. 4.

For instance, let us consider again the idiom *avere un cuore d'oro*. The meaning pole

of its idiomatic cluster could be approximately represented as reported in Tab. 5.7 below:

Tab. 5.7: the meaning pole of *avere un cuore d'oro*.

MEANING POLE
MEANING: to be very good and generous
MOTIVATION PATTERNS
METAPHORS conceptual metaphor: LOCUS OF COGNITIVE FACULTY AS BODY PART elaboration: LOCUS OF FEELINGS AS HEART emblematic metaphor: GOODNESS AS GOLD resulting in: BEING GOOD AS HAVING A GOLDEN HEART
CATEGORY OF THE IDIOM pattern E: idiom with a compositional, but experientially unrealistic literal meaning

This is the meaning pole of the attractor state from which the individual occurrences of the idiom, which will be illustrated in the following subsection, conform and deviate to different extents, occupying a slot in the multi-faceted meaning spectrum defined by the distinct dimensions mentioned in §5.1.2 above. Let us now consider the idiom which has been described as representing the opposite pole of the continuum with regard to form, *mettere alle corde*.

Tab. 5.8: the meaning pole of *mettere alle corde*.

MEANING POLE
MEANING: to put somebody in a difficult position
MOTIVATION PATTERNS
METAPHOR conceptual metaphor: LIFE AS SPORT elaboration: CONFRONTATION AS BOXING elaboration: CAUSING TROUBLE TO THE OPPONENT AS PUTTING THEM TO THE ROPES
CATEGORY OF THE IDIOM pattern C: idioms with literal compositionality and global motivation

It is possible to observe that, while the motivation patterns are overall quite similar (the former involves the combination of an elaboration of a conceptual metaphor with an emblem; the latter captures two steps of elaboration of a conceptual metaphor), the two idioms belong to two distinct patterns. Keeping this fact in mind, let us now move



on to explore the meaning poles of the idiomatic patterns of the other two idiomatic constructions illustrated above. Tab. 5.9 refers to the meaning of *essere un sepolcro imbiancato*, while Tab. 5.10 relates to *far venire la pelle d'oca*.

Tab. 5.9: the meaning pole of *essere un sepolcro imbiancato*.

MEANING POLE
MEANING: to be a hypocrite and a fake
MOTIVATION PATTERNS
METAPHOR emblematic metaphor: BEING A HYPOCRITE AS BEING A WHITEWASHED SEPULCHER
CULTURAL BASIS OF THE METAPHOR According to the Gospel, Jesus Christ launched an invective against scribes and Pharisees, comparing them to whitewashed sepulchers, which look nice when observed from the outside, but which only contain dead flesh.
CATEGORY OF THE IDIOM pattern E: idioms with a compositional, but experientially unrealistic literal meaning.

Tab. 5.10: the meaning pole of *fare venire la pelle d'oca*.

MEANING POLE
MEANING: to strongly scare or disgust somebody
MOTIVATION PATTERNS
METAPHOR-METONYMY INTERACTION conceptual metaphor: PEOPLE AS ANIMALS elaboration: PEOPLE AS GEESE conceptual metonymy: PHYSIOLOGICAL CORRELATE FOR EMOTION elaboration: MAKING SOMEBODY COME OUT IN GOOSEFLESH FOR SCARING OR DISGUSTING THEM resulting in: SCARING OR DISGUSTING SOMEBODY AS MAKING THEM COME OUT IN GOOSEFLESH
CATEGORY OF THE IDIOM pattern E: idioms with a compositional, but experientially unrealistic literal meaning.

While both these two idioms belong to the same category (pattern E), their motivation patterns are different (cf. §4.2.3). The former case is motivated by a single metonymic metaphor, which is rooted in the strongly entrenched Christian tradition of Italy. The latter case, instead, is motivated by the interaction between a metaphor grounded in the knowledge of the animal world and a bodily-based metonymy, both emerging from embodied experience in the world. Even though an illustration of the reconstruction of both poles of the idiomatic cluster of four expressions only may be seen as limited, it

allowed me to provide a reasonably accurate description of both formal and meaning poles of these idiomatic constructions.

### 5.2.2. *An illustration of variation patterns*

In the present subsection, I am going to deal with the patterns of variation which can be observed in the real occurrences of the sample of idiomatic constructions selected for the present study. I will focus on the modifications of the form/meaning pairings which constitute the idiomatic cluster of an idiom and the discourse-functional properties of each occurrence, according to Langlotz's variation parameters revised as illustrated at the end of §5.1. In Tab. 5.11 below it is possible to observe the figures relative to the distribution of the 50 idioms which will be analyzed in the present chapters according to the categorization criteria outlined in §2.2 and applied in ch. 4.

I will now provide some detail concerning the amount of data I have been dealing with. As explained in §5.1.1 above, for each of the 150 idiomatic expressions analyzed in the previous chapter, 100 occurrences were downloaded from the corpus, after manually checking that all of them could be considered, to some extent, idiomatic. For those expressions whose lemma-group returned less than 100 results showing some level of idiomaticity, all the relevant occurrences were collected (cf. Langlotz 2006a). Among the 50 idioms selected for the analysis in the present section, 42 showed at least 100 occurrences, with the remaining 8 displaying a frequency ranging between 63 and 98. In total, I investigated 4,809 occurrences of idiomatic constructions in use. In Tab. 5.12 below, it is possible to observe how the occurrences are distributed according to the category of the relevant idiomatic construction.

In order to systematically analyze and classify the occurrences according to their levels of conformity or divergence to the formal and meaning poles of an idiomatic cluster it is possible to refer to the six patterns of occurrence described in §5.1.2 + a *No Variation* pattern. The patterns will be illustrated in detail with the aid of a range of examples throughout this section. First of all, I will provide an outline of the occurrence pattern which do not depict any variation; then, I will illustrate the variation patterns, beginning with the most frequent one to arrive at the rarest.

Tab. 5.11: the distribution of the 50 idioms according to the idiom categories.

Category of idiom	Items
A. Idioms with literal compositionality, global motivation, and figurative-literal isomorphism.	4 (8.00%)
B. Idioms with literal compositionality, global and constituent motivation, and figurative-literal isomorphism.	1 (2.00%)
C. Idioms with literal compositionality and global motivation.	13 (26.00%)
D. Idioms with literal compositionality, but neither motivation nor isomorphism.	1 (2.00%)
E. Idioms with compositional but experientially unrealistic meaning.	26 (52.00%)
F. Partially compositional idioms.	1 (2.00%)
G. Literally non-compositional, constructionally idiosyncratic idioms.	3 (6.00%)
H. Literally non-compositional idioms with cranberry morphs.	0 (0.00%)
I. Idioms with absent literal compositionality due to the presence of highly specialised word-meanings and garden-path constituents	1 (2.00%)
TOTAL	50 (100.00%)

Tab. 5.12: the distribution of the 4,809 occurrences according to the idiom categories.

Category of idiom	Items	Occurrences
A	4	400 (8.32%)
B	1	100 (2.08%)
C	13	1,292 (26.87%)
D	1	100 (2.08%)
E	26	2,447 (50.88%)
F	1	70 (1.46%)
G	3	300 (6.24%)
H	0	0 (0.00%)
I	1	100 (2.08%)
TOTAL	50	4,809 (100.00%)

As can be observed in Tab. 5.13 below, the frequency of these variation patterns ranges widely. For both ease of exposition and space's sake, the patterns will be illustrated with examples of the four idioms introduced in the previous sections, insofar as this is possible. Whenever this is not be feasible, I will resort to the illustration of instances of another idiom, after introducing the formal and the meaning pole of its idiomatic cluster. The distribution of variation patterns across the idiom

categories outlined above is a topic which deserves a subsection of its own, and therefore its discussion will be left for §5.2.3. In the following pages, I will focus on the nature of the patterns of occurrence only<sup>19</sup>.

Tab. 5.13: the frequency of the variation patterns.

Variation pattern	Occurrences
Usual Variant (UV)	9 (0.19%)
Systematic Variant (SV)	1,966 (40.88%)
Context-Bound Grammatical Variant (CBGV)	959 (19.94%)
Striking Creation of a Variant (SCV)	401 (8.34%)
Erroneous Variant (EV)	9 (0.19%)
Pseudo-Variant (PV)	0 (0.00%)
No Variation (NOV)	1,465 (30.46%)
Total	4,809 (100.00%)

### No Variation

Here I will briefly illustrate some occurrences of idiomatic constructions which do not undergo any structural modification. Of course, this cannot be considered a “variation pattern”, since it denotes the absence of variation. The excerpts reported below conform to the formal and meaning properties which constitute the idiomatic cluster of the four constructions I am focusing on in this chapter. Quantitatively, this kind of pattern represents a substantial portion of all the occurrences analyzed in the present study, covering slightly more than 30% of the total. However, this number triggers an important observation, namely that almost the 70% of the occurrences of idioms in actual language use undergo structural modification, though to different levels depending on the case. This fact clearly speaks against the traditional view of idioms as “fixed” linguistic units. This consideration has important theoretical implications, which will be dealt with in §5.3. For the time being, I will just illustrate a few occurrences of this “non-variation” pattern. Consider the example illustrated in (35) below:

(35) Qualunque tipo di iniziativa atta a promuovere politiche occupazionali

<sup>19</sup> Since no instance of pseudo-variant was observed in my data, no example is available for this pattern.

any type.SG of initiative.SG suitable to foster:INF policy.PL occupational.PL  
 è da noi ben vista – sono le parole di Denis  
 be:PRES.3SG by 1PL well see:PSTPART.FSG be:PRES.3PL the.FPL word.PL of Denis  
 Nesci, Presidente Nazionale de-l patronato EPAS –  
 Nesci President.SG National.SG of-the.MSG charitable-institution.SG EPAS  
 soprattutto in un momento come questo, in cui la crisi  
 especially in a.MSG moment.SG like this.M in which the.FSG crisis.SG  
 economica ha messo a-lle corde migliaia di lavoratori.  
 economic.SG have:PRES.3SG put:PSTPART to-the.FPL rope.PL thousand.PL of worker.PL  
 “We welcome any initiative directed to foster occupational policies – these are the words of  
 Denis Nesci, National President of the charitable institution EPAS – especially in a moment  
 like this, where the economic crisis has pushed thousands of workers of the ropes.”

Here, it is possible to observe the idiom occurring with the verb in the third person singular of the present perfect, and the NP(Sbj) Aux V AdvP NP(Obj) phrase order, which are both part of the idiomatic cluster of the construction, as can be observed in Tab. 5.3 in §5.1. Below, I provide a standard occurrence of the idiom *avere un cuore d'oro*, analogous to those illustrated in §5.2.1:

- (36) Ha detto che le piaccio: che cosa avrò  
 have:PRES.3SG say:PSTPART that F.3SG.DAT like:PRES.1SG that what have:FUT.1SG  
 mai fatto per meritar-mi il suo aperto apprezzamento  
 never do:PSTPART for deserve:INF.REFL.1SG the.MSG her.MSG open.SG appreciation.SG  
 non lo saprò mai ma avrò sempre la  
 NEG M.3SG.OBJ know:FUT.1SG never but have:FUT.1SG always the.FSG  
 certezza di aver incontrato una persona da-l cuore d'  
 certainty.SG of have:INF meet:PSTPART a.FSG person.SG from-the.MSG heart.SG of  
 oro che fino a che non siamo saliti in auto  
 gold.SG that until to that NEG be:PRES.1PL get-on:PSTPART.MPL in car.SG  
 guarda ne-lla nostra direzione e ci saluta alzando  
 look:PRES.3SG in-the.FSG our.FSG direction.SG and 1PL.OBJ greet:PRES.3SG raise:GER  
 la mano sorridendo.  
 the.FSG hand.FSG smile:GER

“She said that she likes me: what I could have ever done in order to deserve her open appreciation is something I will never know, but I will always be sure that I have met a golden-hearted person who, until we got on the car looks in our direction and greets us raising her hand, smiling.”

Here, we can observe the lemma-group of the idiom occurring in a (verbless) adverbial phrase, the most frequent pattern for this construction (see Tab. 5.2 above). In the following two excerpts, it is possible to observe two standard occurrences of the idioms *essere un sepolcro imbiancato* and *far venire la pelle d'oca*, respectively.

- (37) (...) il tornado de-lla polemica s' è levato  
 the.MSG tornado.SG of-the.FSG controversy.SG REFL.3 be:PRES.3SG rise:PSTPART.MSG

da sinistra. Per l' eurodeputato Vittorio Agnoletto, “*quelli come Di Pietro*  
 from left For the.MSG euro-MP.SG Vittorio Agnoletto those.M like Di Pietro  
*sono de-i sepolcri imbiancati.*”  
 be:PRES.3PL some.MPL sepulcher.PL whitewashed.PL

“...the storm of the controversy has risen from the left wing. According to the Euro MP Vittorio Agnoletto, “those like Di Pietro are whitewashed sepulchers.”

- (38) (...) queste sono notizie che quando le senti ti  
 these.F be:PRES.3PL news.PL that when F.3PL.OBJ hear:PRES.2SG 2SG.DAT  
*fa venire la pelle d' oca, si ferma*  
 make:PRES.3SG come:INF the.FSG skin.SG of goose.SG REFL.3 stop:PRES.3SG  
 il tempo per qualche istante giusto il tempo per pensare  
 the.MSG time.SG for some moment.SG only the.MSG time.SG for think:INF  
 che a volte basta una minima distrazione che può  
 that at time.PL suffice:PRES.3SG a.FSG slightest.SG distraction.SG that may:PRES.3SG  
 essere fatale (...)  
 be:INF fatal.SG (...)

“... These are news that, when you hear them, it gives you goosebumps, for a few moment time stops only the time to think that sometimes the slightest distraction may be fatal...”

Example (37) illustrates the relevant idiom occurring with the copular verb conjugated in the third person plural of the simple present tense, and the NP(Sbj) V NP(Cs) phrase order, the prevailing formal patterns which can be observed in Tab. 5.5. Likewise, the instance illustrated in (38) represents an example of the dominant verbal form of the periphrasis (the third person singular of the present tense of the verb *fare* + the infinitive of *venire*) and the prevalent phrase order NP(Sbj) NP(Obl) Fare Venire NP(Obj) which are included in Tab. 5.6.

### Systematic Variants

*Systematic Variants* are those occurrences of an idiomatic construction which display some level of lexicogrammatical variation from the idiomatic cluster, and are effected by the variation principle of constructional adaptation (cf. §2.2). This pattern is by far the most frequent, accounting for the 40.88% of the total occurrences in my sample of idioms. This is in fact also the only pattern whose occurrences outnumber the occurrences of the idioms without any deviation from the idiomatic cluster (and it does so substantially, by slightly more than 10%). An instance of this pattern can be found in excerpt (39) below:

- (39) E siamo già su-ll' altro versante, quello de-ll' uomo  
 and be:PRES.1PL already on-the.MSG other.SG front.SG that.M of-the.MSG man.SG  
 accomodante, gentile, signorile, disponibile e sorridente. Era un  
 obliging.SG kind.SG gentlemanly.SG helpful.SG and smiling.SG be:IMPF.3SG a.MSG  
 uomo colto, laureato in medicina. Aveva un  
 man.SG educated.SG graduate:PSTPART.MSG in medicine.SG have:IMPF.3SG a.MSG  
 cuore d' oro.  
 heart.SG of gold.SG

“And we are already on the other front, that of the obliging man, kind, gentlemanly, helpful, and smiling. He was educated, graduated in medicine. He had a golden heart.”

Here, it is possible to observe a case of morphosyntactic variation: the verb *avere* occurs in the third person singular of the imperfect. As quite typical of systematic variant, this occurrence does not show any strong effect on meaning: it only shows a shift in the temporal perspective, from the continuity in the present to the continuity in the past, which in Italian. In example (40), it is possible instead to observe an instance of syntactic modification of the idiom *mettere alle corde*:

- (40) Gli uomini di Maradona giocano a mille mettendo la  
 the.MPL man.PL of Maradona play:PRES.3PL at thousand put:GER the.FSG  
Germania a-lle corde ma a-llo stesso tempo rischiando di  
 Germany to-the.FPL rope.PL but at-the.MSG same time.SG risk:GER of  
 lasciare troppi varchi a-l contropiede avversario. Ci  
 of leave:INF too-many passage.PL to-the.MSG counterattack.SG opponent.SG IMPR  
 si aspetta di vedere il pareggio ma invece arriva  
 IMPR expect:PRES.3SG of see:INF the.MSG level.SG but instead arrive:PRES.3SG  
 il raddoppio de-lla Germania ad opera di Klose.  
 the.MSG double.SG of-the.FSG Germany to work.SG of Klose.

“Maradona's men play hard, pushing Germany to the ropes, but at the same time risking to leave too many ways-through to the opponent's counterattack. One is expecting to see the level, but instead it is Germany's double which arrives, delivered by Klose.”

The occurrence above displays the following phrase order: V(ger) NP(Obj) AdvP, followed by an adversative construction. This pattern represents a deviation from the formal pole of the idiomatic cluster of the idiom illustrated in the previous section, without any significant variation in the meaning of the expression. In the following two occurrences, it is possible to observe two different cases of lexical variation. In (41) below, the reader can find an instance of lexical substitution, whereas the example in (42) illustrates a case of lexical insertion:

- (41) Evitiamo di fare i sepolcri imbiancati: è davvero

avoid:IMP.1PL of do:INF the.MPL sepulcher.PL whitewashed.PL be:PRES.3SG really  
 il Gesù che vive e muore da-lla parte de-gli  
 the.MSG Jesus who live:PRES.3SG and die:PRES.3SG by-the.FSG side.SG of-the.MPL  
 ultimi quello che si vuole far “parlare” da-lle aule  
 last.PL that.M who IMPR want:3SG make:INF speak:INF from-the.FPL classroom.PL  
 scolastiche e da iscrivere come irrinunciabile ne-lla Costituzione  
 educational.PL and to insert:INF as inalienable.SG in-the.FSG Constitution.SG  
 Europea? Si dovrebbe allora educare e legiferare in  
 European.SG IMPR must:PRES.COND.3SG then instruct:INF and legislate:INF in  
 modo draconiano contro le diseguaglianze sociali (...)  
 way.SG draconian.SG against the.FPL inequality.PL social.PL  
 “Let us not behave as whitewashed sepulchers: is it really the Jesus who lives and dies on the  
 side of the last ones the one that we want to make “speak” from the classrooms and insert as  
 inalienable in the European Constitution? Then we should instruct and legislate draconianly  
 against social inequalities...”

- (42) Giust-issimo, avvo. Cavour (che pure pare fosse  
 right-INTS.SG attorney.SG Cavour who yet seem:PRES.3SG be:IMPF.SUBJ.3SG  
 credente) aveva il coraggio di fare un' azione  
 believer.SG have:IMPF.3SG the.MSG bravery.SG of make:INF a.FSG action.SG  
 politica giusta o sbagliata, ma libera. Oggi *i* “sostenitori”  
 political.SG right.SG or wrong.SG but free.SG today the.MPL supporter.PL  
*de-l Papa (Bondi, Casini, Mastella etc.) sono solo de-i*  
 of-the.MSG Pope.SG Bondi, Casini, Mastella etc. be:PRES.3PL only some.MPL  
*sepolcri imbiancati* che usano il Papa per ravanare  
 sepulcher.PL whitewashed.PL who use:PRES.3PL the.MSG Pope.SG for scrape:INF  
 un po' di voti.  
 a.MSG bit.SG of vote.PL

“Absolutely right, Mr. Cavour (who yet is believed to be a believer) used to have the courage  
 to take a political action, right or wrong, but free. Today, the “supporters” of the Pope (Bondi,  
 Casini, Mastella, etc.) are just a bunch of whitewashed sepulchers who use the Pope to scrape  
 a few votes.”

In the former example, it is possible to observe the substitution of the verb *fare* for *essere*, which denotes a slightly more moderate attitude toward the interlocutors, i.e. the “accusation” is to take a hypocritical stance in a specific situation rather being hypocritical as persons. This lexical replacement only plays a downtoning function, without implying a radical shift in the meaning of the construction. In the latter occurrence, instead, the introduction of the adverb *solo* (“only”, “just”) works as a sort of intensifier, adding some more emphasis to their message, i.e. the fact that the defense of Catholic values by the people mentioned in the excerpt is nothing more than a façade, adopted for opportunistic reasons. Again, the meaning of the idiom is not significantly changed.

Despite the possibility to find different kinds of formal variation, these instances are grouped together under the label *Systematic Variants* due to the nature of their



constructional adaptation. It only involves morphosyntactic, syntactic, or lexical modifications (or even combination of these) which carry some adjustment to the meaning of idiomatic constructions, but do not have any major effect of them. However, this variation pattern is important, because it shows that in a considerable number of cases idioms display a certain level of formal flexibility, whether accompanied by some plasticity in meaning or not. I will return to this point at the end of the subsection, after illustrating some instances which display more striking variations along the dimension of meaning.

### Context-Bound Grammatical Variants

Quantitatively speaking, the third pattern of occurrence which can be observed in my sample of occurrences is the one I redefined as *Context-Bound Grammatical Variants*, which accounts for those variants whose modification follows the formal conventions of the Italian language, but whose occurrence is motivated by the need for integration of the idiom with the discourse context, which has a stronger impact on the idiomatic meaning compared to fully systematic variants, as specified in §5.1.2 above. It is relevant to underline that, although remarkably less frequent than the *Systematic Variants* and standard usages, this pattern of variation still covers almost one-fifth of the total occurrences (19.94%). In example (43), this kind of variation occurs along the syntactic dimension:

- (43) Sono ingordo di dialettalità, che a Quarto Oggiaro poi è  
 be:PRES.1SG greedy.SG of dialectality.SG that at Quarto Oggiaro then be:PRES.3SG  
 babelicamente presente: pugliese, veneto, milanese, siciliano, si  
 babel-style present.SG Pugliese.SG Venetian.SG Milanese.SG Sicilian.SG IMPR  
 sente di tutto, cadenze impossibili, sincretismi *da far*  
 hear:PRES.3SG of everything accent.PL impossible.PL syncretism.PL to make:INF  
*venire la pelle d'oca* a qualunque glottologo. C'è  
 come:INF the.FSG skin.SG of goose.SG to any linguist.SG there be:PRES.3SG  
 da dire che la perdita de-l dialetto è una cosa  
 to say:INF that the.FSG loss.SG of-the.MSG dialect.SG be:PRES.3SG a.FSG thing.SG  
 più milanese che de-l resto d' Italia.  
 more Milanese.SG than of-the.MSG rest.SG of Italy.

“I am thirsty for dialects, which in Quarto Oggiaro are babel-like present: Pugliese, Venetian, Milanese, Sicilian, you can hear anything, unlikely accents, syncretism which may give goosebumps to any linguist. It must be said that the loss of the dialect is more noticeable in Milan than in the rest of Italy.”

In this example, it is possible to notice the appearance of the idiomatic construction in an adverbial phrase, which, integrated with the rest of the discourse context, remarkably affects the meaning of the expression. Indeed, it is possible to notice that in this case the idiomatic construction is not used to refer to the specific emotions of fear and/or disgust, but rather leaves the door open for a wider spectrum of emotions. Indeed, not all linguists may react the same way to the dialectal hybrids mentioned by the speaker, depending on their level of “conservatism”, but hardly can they remain indifferent to an environment saturated with language variation. This kind of variants differ from *Systematic Variants* in that the integration of the idiomatic construction with the context does not simply intensify or downtone the meaning of an idiom, nor does it simply denote a change in perspective; rather, they integrate the meaning of the idiom according to the context, which plays a more constitutive role. Shifting to lexical variation, a good example of the kind of variant under discussion is provided in (44) below, where the adjective *inaspettato* (“unexpected”) contributes an enrichment to the meaning of the idiomatic expression, linking it with the previous phrase in the chunk:

- (44) Tra i tanti conflitti c'è poi anche quello tra  
 among the.MPL many conflict.PL there be:PRES.3SG then also that.M between  
 i due fratelli protagonisti: Marco, avvocato fallito e  
 the.MPL two brother.PL protagonist.PL Marco lawyer.SG unsuccessful.SG and  
 demotivato e Luigi, coatto romano doc con spinte razziste e  
 demotivated.SG and Luigi cad.SG Roman.SG DOC with push.PL racist.PL and  
 un *inaspettato* cuore d'oro.  
 an.M unexpected.SG heart.SG of gold.SG

“Among the many conflicts, there is also the one between the two protagonist brothers: Marco, unsuccessful and demotivated lawyer, and Luigi, authentic Roman cad with racist impulses and an unexpected golden heart.”

Here, the insertion of the adjective *inaspettato* plays a crucial role: it is necessary to amend to the common sense discrepancy between being racist (a property which has a negative social connotation) and being very nice and generous (which instead is usually positively valued). While the idiom's meaning is not remarkably changed, the addition of this lexical item performs an important discourse function, adding a crucial bit of information to the expression. It is indeed the insertion of *inaspettato* which makes the adverbial phrase meaningful and consistent: its absence would arguably

make the phrase rather puzzling. Therefore, this occurrence represents a good illustration of a variant which is tightly bound to the context of use. It is now possible to have a look at an example of morphosyntactic variation. Consider (45) below, where the speaker, a Catholic believer, underscores the impact of the scandals concerning the Catholic Church on people's trust in such an institution:

- (45) Questo crea                    sconcerto ne-lle        persone in buona fede        che  
 this.M create:PRES.3SG dismay.SG in-the.FPL person.PL in good.SG faith.SG who  
 credono                    veramente ne-l        Dio Padre        di tutti noi, esattamente  
 believe:PRES.3PL really        in-the.MSG God.SG Father.SG of all 1PL exactly  
 quello che invociamo        ogni giorno ne-lla        preghiera de-l        “Padre  
 that.M who invoke:PRES.1PL every day.SG in-the.FSG prayer.SG of-the.MSG Father.SG  
 Nostro”. Sto                    dicendo de-lle        novità? Non mi        sembra,  
 Our.MSG stay:PRES.1SG say:GER some.FPL news.PL NEG 1SG.DAT seem:PRES.3SG  
 eppure la        confusione, la        perdita di credibilità, il        rifiuto  
 and-yet the.FSG confusion.SG the.FSG loss.SG of credibility.SG the.MSG refusal.SG  
 sono        davanti a-gli        occhi di tutti. Non è        bello asserire  
 be:PRES.3SG in-front to-the.MPL eye.PL of all.PL NEG be:PRES.3SG nice.SG assert:INF  
 certe cose, ma o si è        autentici o si è  
 certain.PL thing.PL but either IMPR be:PRES.3SG genuine.PL or IMPR be:PRES.3SG  
*sepolcri        imbiancati.*  
 sepulcher.PL whitewashed.PL

“This creates dismay in the people in good faith who really believe in the God Father of us all, exactly the one we invoke every day in the “Lord's Prayer”. Am I saying anything new? I don't think so, and yet the confusion, the loss of credibility, the rejection are apparent. It is not nice to assert this kind of things, but you are either genuine or whitewashed sepulchre.”

In this example, the lemma-group is preceded by the verb *essere* (“to be”) conjugated in the third person singular of the simple present tense, in the impersonal form. The use of the impersonal particle *si* and the plural are the points of departure from the formal pole illustrated in Tab. 5.5 above. It denotes a use of the idiom which is bound to the immediate context, but in a sense it also goes beyond it. Indeed, on the one hand, the combination of the impersonal form and the “either-or” structure of the sentence, which opposes the meaning of *sepulcro imbiancato* (“whitewashed sepulchre”, i.e. “a hypocrite”) with the antonym *autentico* (“sincere, true”), makes reference to the ongoing discussion (it can be noticed that both terms are used in the plural number)<sup>20</sup>; on the other hand, the use of the impersonal form is meant to have a general reference, rather than directing the message to somebody in particular and

<sup>20</sup> Here it is likely that the choice of the idiomatic expression *sepulcro imbiancato* rather than its literal counterpart *ipocrita* (“hypocrite”) is affected by the topic of the discussion.

extends beyond the specific interaction. Indeed, the speaker does not simply take part in the discussion of the topic (i.e. the current problems of the Catholic Church), but they also provide constructive criticism, underlying the importance of being honest and, when necessary, exposing uncomfortable truths and debating controversial issues, in order to objectively assess a less-than-ideal situation.

### Striking Creation of a Variant

The fourth pattern which can be observed in the data is the one which includes variants characterized by the interplay between the literal and the figurative meaning of an idiomatic construction. As such, the occurrence of this kind of variants is likely to trigger certain perlocutionary effects in the interlocutor. Although these effects may intentionally sought by the speaker, as emphasized at the end of §5.1 here I will not make potentially controversial claims regarding intentionality or consciousness, limiting the focus of my attention to the illustration of the variants. These striking variants cover 8.34% of all the occurrences I analyzed. More importantly, this variation pattern is one of the most peculiar, as will be apparent in the examples illustrated below.

Consider, for instance, the occurrence of *avere un cuore d'oro* (“to have a heart of gold”) in (46), where it is possible to find variation along the syntactic dimension, since the idiom occurs in a verbless sentence, together with the insertion of the adverbial phrase *sotto la camicia verde* (“beneath the green shirt”). This example is an instance of ironic language and the understanding of the message it conveys is totally dependent on the comprehension of the context, along with the interplay between the literal and the figurative meaning. First of all, it is important to underline the political nature of the discourse topic, as hinted by the comparison with the nazis. The literal meaning of the idiom can be recognized in the connection the speaker established between the heart and the shirt. As located inside the chest, the heart is depicted as being located beneath a piece of garment which covers that part of the human body. Second, the color of the shirt is also very important: the green shirt is the uniform of *Lega Nord* (“Northern League”) militants, a political movement which is strongly

hostile to immigrants. Third, the controversial combination of anti-immigration propaganda (which intuitively has a negative connotation) and the concerns for the environment justifies the choice of a figurative attribute for the heart (which, on the contrary, is usually endowed with a positive connotation), giving rise to the a reading of the occurrence characterized by the interaction between the literal and figurative meaning of the idiom.

- (46) Bettio ha un' anima ecologista. Si é sempre  
 Bettio have:PRES.3SG a.FSG soul.SG eco-friendly.SG REFL.3 be:PRES.3SG always  
 interessato a-i problemi legati a-llo smog.  
 involve:PSTPART.MSG to-the.MPL problem.PL bind:PSTPART.MPL to-the.MSG smog.SG.  
 Forse proprio come i nazisti, comincia a vedere la  
 Perhaps just like the.MPL nazi.PL begin:PRES.3SG to see:INF the.FSG  
 possibilità di smaltimento de-i mefitici gas di scarico. Ecco il  
 chance.SG of disposal.SG of-the.MPL sewer.PL gas.PL of exhaust.SG Here the.MSG  
 vero obiettivo di Bettio, eliminare i gas di scarico e  
 true.SG goal.SG of Bettio eliminate:INF the.MPL gas.PL of exhaust.SG and  
 gli immigrati molesti. *Un cuore d' oro sotto la*  
 the.MPL immigrant.PL annoying.PL a.MSG heart.SG of gold.SG beneath the.FSG  
*camicia verde.*  
 shirt.SG green.SG

“Bettio has an eco-friendly soul. He has always been interested in problems related to smog. Perhaps just like the nazis, he is beginning to see the chance of disposal of sewer gasses. This is Bettio's true goal: eliminate the exhaust gasses and the annoying immigrants. A heart of gold beneath the green shirt.”

In the following excerpt instead, the speaker is criticizing the Pope, after bitterly attacking the President of the United States.

- (47) Un “semidio” mantenuto ne-l lusso sibaritico da un  
 a.MSG demigod.SG maintain:PSTPART.MSG in-the.MSG luxury.SG sybaritic.SG by a.MSG  
 sistema di finanziamento statale truffaldino e iniquo. Un “semidio”  
 system.SG of funding.SG public.SG fraudulent.SG and unfair.SG a.MSG demigod.SG  
 corresponsabile di avere coperto preti pedofili per decenni  
 complicit.SG of have:INF cover:PSTPART priest.PL pedophilic.PL for decade.PL  
 mentre scriveva libelli contro chiunque non rientri  
 while write:IMPF.3SG libel.PL against anybody NEG fall-within:PRES.SUBJ.3SG  
 ne-i suoi precetti di “morale”. *Due sepolcri imbiancati che*  
 in-the.MPL his.MPL precept.PL of morality.SG two sepulcher.PL whitewashed.PL that  
*dovrebbero essere solo sepolti* da-lle loro bugie e  
 must:PRES.COND.3PL be:INF only bury:PSTPART.MPL by-the.FPL their lie.PL and  
 ipocrisie.  
 hypocrisy.PL

“A demigod maintained in the sybaritic luxury by a fraudulent and unfair public funding system. A demigod complicit of protecting pedophilic priests for decades while writing libels

against anybody does not conform to his precepts of morality. Two whitewashed sepulchres who should only be buried by their lies and hypocrisies.”

The example above is characterized by a modification along all the three formal dimensions: morphosyntactic, with the pluralization of the noun phrase; syntactic, with the occurrence of the lemma-group at the beginning of the sentence, functioning as antecedent for the relative pronoun which is the subject of the sentence, which features the periphrasis constituted by the semiauxiliary verb *dovere* (“must”), which takes a finite form, and the infinitive of the auxiliary *essere* (“to be”); and lexical, with the insertion of the numeral *due* (“two”).

As in the case of the previous example, in order to fully understand of the interplay between the literal and the figurative meaning of the idiomatic construction it is necessary to take multiple aspects into consideration. Actually, this case is even more complex. First of all, it is important to consider the previous lines about the Pope, in order to understand what the accusations the speaker is charging him of are about<sup>21</sup>. Second, it is important to underline the fact that this idiom is rooted in the Catholic tradition: therefore, the accusation to the Pope represents a first link between the figurative and the literal meaning of the construction. There are another couple of points which make the interaction between the literal and figurative meaning of the idiom in this occurrence particularly complex. First of all, the scenario of sepulchres as being buried is rather controversial: sepulchres are not buried; rather, dead people are buried into sepulchres. Second, the burial of alive people “under lies and hypocrisy” is not experientially realistic, given that lies and hypocrisies are not material objects. The meaning of this variant involves different levels and emerges as a simultaneous burst of blending different scenarios, not completely consistent with each other.

Consider now the occurrence illustrated in (48) below, where the idiom can be found in an adversative construction and, especially, is followed by an adverbial phrase which blatantly denotes an impossible situation:

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21 It should also be noticed that knowing the nature of the specific criticism directed at the President of the USA is not as important as that directed to the Pope, because the idiom under consideration is rooted in the Gospel. This fact underlines the *intertextuality* of the metaphor (see Zinken 2003).

- (48) mi hai tolto le parole di bocca. Oh,  
 1SG.DAT have:PRES.2SG rob:PSTPART the.FPL word.PL of bocca.SG hey  
 sia chiaro, io sto digitando da un Mac  
 be:PRES.SUBJ.3SG clear.SG 1SG.SBJ be:PRES.1SG type:GER from a.MSG Mac.SG  
 e come telefono ho un iPhone. Ma una scrivania  
 and as telephone.SG have:PRES.1SG a.MSG iPhone But a.FSG desk.SG  
 come quella mi *fa* venire la pelle d'oca  
 like that.F 1SG.DAT make:PRES.3SG come:INF the.SG skin.SG of goose.FSG  
*su-lle* *gengive*.  
 on-the.FPL gum.PL

“...you stole the words from my mouth (i.e., I was just going to say the same thing). Let it be clear, I myself am typing with a Mac and my telephone is an iPhone. But a desk like that one gives me goosebumps on my gums.”

The example above displays an instance of an idiomatic construction modified in order to intensify its figurative meaning. The addition of the NP *sulle gengive* (“on the gums”) denotes a situation which is paradoxical, since there is no skin on the gums. Therefore, even if we ignored the fact that having goosebumps (or the skin of a goose) is a metaphor from metonymy used to denote the effect of a particularly scary or disgusting emotion, the meaning is still experientially implausible. In this case, the addition of a noun phrase allows the speaker to use an idiomatic construction as a hyperbole.

After this brief outline of the most frequent patterns of occurrence of the idioms under investigation, it is now time to turn to less frequent patterns: namely *Usual Variants* and *Erroneous Variants*, which will be briefly illustrated in turn.

### Usual Variants

*Usual variants* represents lexicalized alternative versions of an idiom. In my set of idioms, there seems to be a very limited number of constructions which can be found in two slightly different guises in real language use. In the present study it is possible to observe only 9 occurrences of this pattern, which represent 0.19% of the total<sup>22</sup>. Both versions are conventional (although they are likely to differ in frequency) and alternate without any particular prompt. Consider the instance reported in (49), where

<sup>22</sup> The label “usual variant” listed under “less frequent” patterns may sound odd. Nevertheless, as specified in §5.1.2 above, in my framework, the adjective “usual” is only used in regard to the fact that this pattern includes lexicalized alterations of the idiom, avoiding any claim about their frequency.

the variation occurs along the morphosyntactic dimension, with the noun *corda* occurring in the singular number, while conventionally it is used in the plural<sup>23</sup>.

- (49) Oggi, forse, diranno che la trasmissione era di parte, di  
 today, perhaps, say:FUT.3PL that the.FSG broadcast.SG be:IMPF.3SG of part.SG of  
 sinistra, o addirittura comunista, e che la bell-issima ragazza  
 left. Or even communist.SG and that the.FSG beautiful-INTS.SG girl.SG  
 che conduceva, visto l' abito nero che indossava,  
 who host:IMPF.3SG see:PSTPART.MSG the.MSG dress.SG black.SG that wear:IMPF.3SG  
 faceva parte in realtà de-i Black Block. In verità  
 make:IMPF.3SG part.SG in reality.SG of-the.MPL Black Block. In truth.SG  
 sono stati messi a-lla corda da-lle  
 be:PRES.3SG be:PSTPART.MPL put:PSTPART.MPL to-the.FSG rope.SG from-the.FPL  
 testimonianze in studio di "gente comune" a-l di sopra di  
 deposition.PL in studio.SG of people.SG common.SG to-the.MSG of above of  
 sospetto che erano a Genova quel giorno(...)  
 suspect.SG who be:IMPF.3PL at Genoa that.M day.SG

“Today, perhaps, they will say that the program was biased, leftwing, or even communist, and that the beautiful girl who was hosting, given the black dress she was wearing, was part of the Black Block. Actually, they have been pushed to the rope by the depositions, in the studio, of common people above any suspect who were in Genoa on that day...”

The use of the singular rather than the plural form of the noun does not depend on the specific frame of reference and does not contribute any change in the meaning of the idiom: it is just an alternative way of “saying the same thing”.

### Erroneous variants

Finally, it is time to illustrate the last pattern remaining. Just as the pattern described above, *Erroneous Variants* are rarely found in my data (again there are only 9 occurrences of this pattern, 0.19% of the total). They represent the misuse of an idiom, either by conflating it with another one into a single construction, or adopting it in coordination with a construction which carries a meaning which is contextually inconsistent with that of the idiom. According to Langlotz (2006a), they can be considered as “idiomatic slips of the tongue”, totally unintentional. While I am not going to make any claim about their supposed (non-)intentionality, in the following few lines I will illustrate an instance of this pattern occurring with the idiomatic construction *portare il cervello all'ammasso*, glossed in (50) below.

<sup>23</sup> It is also possible to observe an element of syntactic variation, with the verb occurring in the passive voice, but this is not particularly relevant to the present discussion.



- (50) Portare il cervello a-ll' ammasso.  
take:INF the.MSG brain.SG to-the.MSG stockpile.SG.

“to add one's brain to the stockpile”, meaning to conform one's ideas to those of the majority.

The idiomatic cluster of this construction can be observed in the two tables below: in Tab. 5.14 it is possible to find the empirically-derived formal pole of the idiom, while its meaning pole is illustrated in Tab. 5.15.

Tab. 5.14: the formal pole of *portare il cervello all'ammasso*.

FORMAL POLE	
VERBAL FORM	PHRASE ORDER
No verb (19%) Portare inf (11%) Portare pres perf 3pl (7%)	[NP(Sbj)] Aux V NP(Obj) AdvP (24%) V(inf) NP(Obj) AdvP (22%) NoVerb (17%) NP(Sbj) V NP(Obj) AdvP (10%) V NP(Obj) AdvP (6%)

Tab. 5.15: the meaning pole of *portare il cervello all'ammasso*.

MEANING POLE
MEANING: to conform one's ideas to those of the majority
MOTIVATION PATTERNS conceptual metaphor: LOCUS OF COGNITIVE FACULTY AS BODY PART elaboration: LOCUS OF INTELLECT AS BRAIN conceptual metonymy: CONTAINER FOR CONTAINED resulting in: BRAIN FOR IDEAS emblematic metaphor: CONFORMITY AS PILE OF INDISTINCT MATERIAL elaboration: INDISTINCT MATERIAL AS GRAIN resulting in: CONFORMING ONE'S IDEAS TO THOSE OF THE MAJORITY AS ADDING ONE'S BRAIN TO THE STOCKPILE
CATEGORY OF THE IDIOM <u>pattern E</u> : idioms with a compositional, but experientially unrealistic literal meaning.

The occurrence illustrated in (51) below provides a paradigmatic case of the idiom used in combination with a construction which conveys an incompatible meaning. Indeed, the idiomatic expression is used in a slogan which takes a position against *both* blindly accepting the majority's opinion *and* against the respect of individual freedoms at the same time:

- (51) (...) non sai di cosa parli sia per le  
 NEG know:PRES.2SG of what speak:PRES.2SG be:PRES.SUBJ.3SG for the.FPL  
 somme erogate su-i vari terremoti, quello de-ll'  
 amount.PL supply:PSTPART.FPL on-the.MPL various.PL earthquake.PL that.M of-the.FSG  
 Aquila compreso, sia su-lla miracolosa rinascita de-l  
 Aquila included.SG be:PRES.SUBJ.3SG on-the.FSG amazing.SG rebirth.SG of-the.MSG  
 nord-est; se sei interessata posso raccontar-ti con  
 North-East if be:PRES.2SG interest:PSTPART.FSG can:PRES.1SG tell:INF-2SG.DAT with  
 dovizia di particolari, ma non credo ti farà  
 abundance.SG of detail.PL but NEG believe:PRES.1SG 2SG.DAT make:FUT.3SG  
 piacere! *Contro l' ammasso de-l cervello e il*  
 pleasure.SG Against the.MSG stockpile.SG of-the.MSG brain.SG and the.MSG  
*rispetto de-lle libertà individuali.*  
 respect.SG of-the.FPL freedom.PL individual.PL

“...you don't know what you are speaking about, either with regard to the amounts of money supplied for the various earthquakes including the one in L'Aquila, or with regard to the amazing recover of the North-East; if you are interested, I can tell you in detail, but I do not think you would like it! Against the stockpiling of the brain and the respect of individual freedoms!”

In this excerpt, it is easily observable that the idiom occurs in an internally inconsistent sentence. Indeed, the meaning of the noun phrase which is coordinated with the one containing the lemma-group of the idiomatic construction is clearly incompatible with the meaning of idiom itself: intuitively, an invitation to think independently is in line with the respect of individual freedoms, not against it. The context does not suggest an ironic reading of the slogan; rather, it seems more plausible that the speaker involuntarily omitted the preposition *per* (“for”), which would make the statement perfectly sensible (*contro l'ammasso del cervello e per il rispetto delle libertà individuali!* - “against the stockpiling of the brain and for the respect of individual freedoms!”).

### Concluding remarks

In the present subsection, I have provided an overview of the patterns of occurrence observed in the sample of occurrences downloaded from the corpus. Even though a detailed discussion of the results of the analysis will be provided in §5.3 and is therefore beyond the purpose of the present section, it is now relevant to return to the data shown in Tab. 5.13 above. It is indeed possible to make two important observations about the prevalence of the *Systematic Variants* and *No Variation* patterns and the relation which holds between them.

First of all, the *No Variation* pattern only covers the 30.46% of the total occurrences. As outlined above, although this percentage is surely substantial, it shows that the instances where the idiomatic construction appears without any variation from the idiomatic clusters are by no means the majority, and this despite the low threshold for being included in the idiomatic cluster. This kind of evidence strongly argues against the view of idiomatic constructions as “long words” or fixed items of non-literal language. Instead, it shows two important features of idioms: on the one hand, it is possible to observe a cluster of forms and a general meaning which constitute a sort of “standard properties” of the idiomatic construction; on the other hand, it is also unavoidable to observe that the actual occurrences of idiomatic constructions display a remarkable plurality of formal and/or meaning variants, and that the patterns which are part of their idiomatic clusters should be (whenever it is possible) empirically derived from the data of actual usage-events by distilling the common properties shared by (a certain amount of) the occurrences, rather than being imposed from above following dictionary conventions.

The second important observation triggered by looking at Tab. 5.13 concerns the fact that, while the patterns which include some kind of variation cover almost 70% of the total occurrences, the fact that the “systematic variant” pattern scores more than 40% (exceeding the *No Variation* pattern by about 10%) shows that the vast majority of the occurrences do not deviate from the idiomatic cluster in a particularly striking way: most of them include formal variants which do affect the meaning of the idiom, but whose effects are not drastic. A complementary reading of Tab. 5.13 is the following: about 40% of the total occurrences involve grammatical variants which only slightly modify the meaning of the idioms (if at all), whereas the remaining 60% can be split into two halves: one includes occurrences which conform to the idiomatic clusters, while the other one includes occurrences which involve more significant deviations from them. These numbers show that the use of idioms displays a remarkable balance between stability and variation.

### 5.2.3. Statistical associations

In §5.2.2 above, I provided an illustration of the different patterns of variation (and non-variation) which can be found in the sample of occurrences analyzed in the present study, supplying a few concrete examples for each pattern; then, I concluded with a preliminary observation of the complementarity between stability and variation, which keeps the system in balance. This point will be one of the main topics of the §5.3 below; as mentioned in passing above, it is now time to investigate if it is possible to find a statistical association between specific idiom categories discussed in the previous chapter (§4.2.2) and the specific patterns of occurrence illustrated in §5.2.2. The purpose of a statistical analysis is to empirically check if a correlation could be drawn between the formal and meaning properties of an idiom and the quantitative and qualitative characteristics of its variational behavior in real language data (as proposed by Langlotz in the conclusions of his book-length qualitative study). Intuitively the idioms whose relationship between the literal and the figurative meaning is more accessible (roughly those belonging to classes A to E) should be more open to all the patterns of occurrence ranging from *No Variation* to the most striking types of variant, whereas those for which this relationship is less transparent (F to I) should be less open to the latter. A cross-tabulation between the figures relative to each idiom class and each pattern of occurrence can be found in Tab. 5.16 below.

The table seems to suggest that the distribution of the occurrences is by no means random; nevertheless, “eye-ball statistics” does not supply any reliable information and can often be misleading. Therefore, in order to test if a statistical association between the idiom-pattern and the variation pattern can actually be detected, a Pearson's Chi-Square test was run with the aid of the free statistical package *R*, version 3.0.1 (R Core Team 2013). While running the test, column H was deleted from the contingency table, as all its values equal 0. The results of the test strongly suggest that there is an association between the two variables ( $p < 0.001$ )<sup>24</sup>. The same test was also repeated deleting the *Usual Variants* and the *Erroneous Variants* rows from the table, in order to test if the very small figures they display could lead to an overstatement of the significance of the test. The association displayed by the two

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<sup>24</sup> Chi-square = 94.3113, df = 35, p-value = 2.406e-07, i.e.  $p < 0.001$ .

variables looks to be equally strong (even a bit stronger)<sup>25</sup>, ruling out this possibility. In terms of the type/token distinction often used in linguistic studies, it seems therefore reasonable to suggest that the distribution of the variation patterns displayed by the tokens is strongly dependent on the type. Nevertheless, the Chi-Square test does not provide any information about the nature of this association. Therefore, I proceeded to apply the *Correspondence Analysis* method to the data displayed in Tab. 5.16, making use of the specific software package *ca* (see Nenadić and Greenacre 2007). Correspondence Analysis is a multivariate statistical method of dimension reduction which applies to categorical data, and it is routinely applied to summarize a set of data in two-dimension graphical maps (see Greenacre 2010a, 2010b). Below, it is possible to find a brief description of this method, provided by the statisticians Hervé Abdi and Lynne Williams:

The goal of correspondence analysis is to transform a data table into two sets of *factor scores*: One for the rows and one for the columns. The factor scores give the best representation of the similarity structure of the rows and the columns of the table. In addition, the factor scores can be plotted as maps, which display the essential information of the original table. In these maps, rows and columns are displayed as points whose coordinates are the factor scores and where the dimensions are called factors. Interestingly, the factor scores of the rows and the columns have the same variance and, therefore, both rows and columns can be conveniently represented in one single map.

(Abdi and Williams 2010: 267, italics original)

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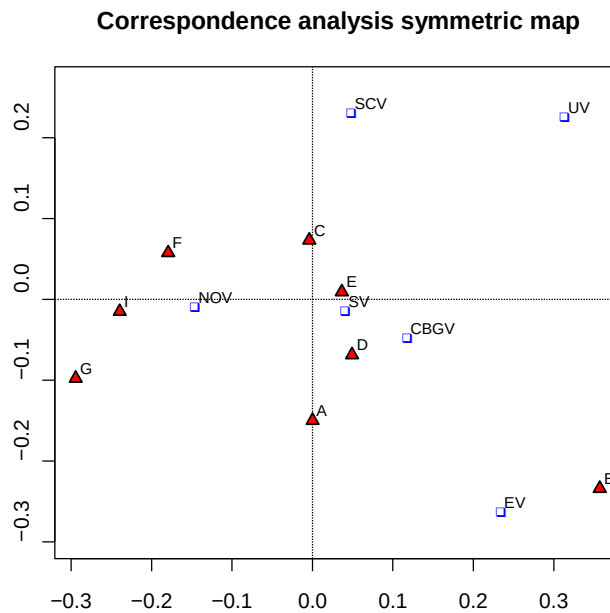
25 Chi-square = 84.0446, df = 21, p-value = 1.684e-09, i.e.  $p < 0.001$ .

Tab. 5.16: a cross-tabulation between idiom categories and patterns of variation.

	<b>A</b> (literally compositional, isomorphic, and globally motivated idioms)	<b>B</b> (literally compositional, isomorphic, and both globally and constitutently motivated idioms)	<b>C</b> (literally compositional and globally motivated idioms)	<b>D</b> (literally compositional but neither isomorphic nor motivated idioms)	<b>E</b> (literally compositional idioms with experientially unrealistic meaning)	<b>F</b> (partially compositional idioms)	<b>G</b> (literally non- compositional, formally idiosyncratic idioms)	<b>H</b> (literally non- compositional idioms with cranberry morphs)	<b>I</b> (literally non- compositional idioms due to the presence of highly specialized word- meanings and garden-path constituents)	<b>Total</b>
<b>UV</b> (Usual Variant)	0	0	1	0	8	0	0	0	0	9
<b>SV</b> (Systematic Variant)	151	54	510	51	1,015	32	116	0	37	1,966
<b>CBGV</b> (Context- Bound Grammatical Variant)	98	29	253	17	499	7	41	0	15	959
<b>SCV</b> (Striking Creation of a Variant)	20	3	135	6	211	6	13	0	7	401
<b>EV</b> (Erroneous Variant)	2	0	1	0	6	0	0	0	0	9
<b>NOV</b> (No Variation)	129	14	392	26	708	25	130	0	41	1,465
<b>Total</b>	400	100	1,292	100	2,447	70	300	0	100	4,809

The bi-plot illustrated in Fig. 5.1 below shows that the application of the Correspondence Analysis technique seems to reveal different patterns of grouping both within and across the two variables (see Tab. 5.16 above for the acronyms).

Fig. 5.1: The Correspondence Analysis symmetric map.



With regard to idiom-patterns, it seems that groups F, G, and I show an analogous behavior. A similar observation can be made with regard to patterns A, C, D, and E. On the other hand, pattern B seems to display more peculiar properties. As for patterns of occurrence, Systematic Variants (SV) and Context-Bound Grammatical Variants (CBGV) seem to show a similarity, with No Variation (NOV) possibly also showing homologous behavior, whereas all the other patterns seem to diverge substantially. Focusing on the relations across the variables, the most frequent pattern of occurrence, SV, is particularly related with the idiom categories E and D, closely followed by C and A; on the other hand, the NOV pattern is more tightly bound to the categories F, G, and I. CBGV displays very similar connections as SV, but it is slightly closer to D than to E, and to A than to C. Striking Creation of a Variant (SCV) does not show any particularly strong association, although the closer pattern is C. As expected from the scarcity of the data available (cf. Tab. 5.16 above), the Usual Variant (UV) does not

seem to be associated with any idiomatic category. The same observation holds with regard to the Erroneous Variant (EV) pattern: in the case of this pattern, looking at the bi-plot could be misleading, suggesting a strong relationship between the Erroneous Variant (EV) pattern and the idiom class B; nevertheless, it is important to underline that when the data are so scarce the mutual proximity of the points on the table is actually impossible to interpret.

These results to some extent confirm the supposition put forward at the beginning of the chapter, but also show some more “surprising” tendencies. Following Langlotz (2006a), it was expected that the categories which denote lesser degrees of compositionality, isomorphism, and motivation (F, G, and I) would prove to be closely related to the NOV pattern, while showing much looser connections with SV and CBGV, in this order. Indeed, it is intuitively sensible that the levels of variability of an idiom resonate with the accessibility of its meaning. It was also expected, on the contrary, that patterns like SV and CBGV were strongly associated to classes of compositional idioms like A, C, D, and E. In particular, SV shows a very strong connection with these patterns. However, while intuitively the pattern NOV should be closer to D and E than to A and C, this turns out not to be the case. In the latter case, the association of NOV is even tighter than that of CBGV. The results about the idiom category B are quite striking: according to the initial supposition, associations with patterns like SV, CBGV, and SCV would be expected; instead, the results of the Correspondence Analysis test suggest otherwise.

The situation outlined above provides some food for thought, in the context of providing an answer to Research Question 3, which aims to account for the variational behavior of Italian idiomatic in attested occurrences of actual usage. As already emphasized, the expectations put forward at the beginning of the subsection have been partially met, especially with regard to the categories which include the less accessible idioms; nevertheless, with regard to the other idiom classes these have been met to a much lesser extent. As a consequence, I would not say that the speculation is either confirmed or disproved altogether; on the contrary, I will make a substantially weaker claim, which basically retains the association between accessibility of meaning and conspicuousness of the variation, but also takes into account the fact that the behavior



of idiomatic constructions in use is not as straightforward as may be supposed a priori. This is a rather controversial point, but Tab. 5.17 below may be helpful to make it clearer. The table suggests that the correlation between the conspicuousness of the pattern of occurrence and the accessibility of the idiom category is respected with regard to their strongest association(s).

Tab. 5.17: idiom categories and patterns of occurrence (the darker the color, the stronger the association)<sup>26</sup>.

	NOV	SV	CBGV	SCV
B				
A				
C				
D				
E				
F				
G				
I				

The least accessible categories are primarily associated with the NOV pattern. Patterns C, D, and E are primarily related to the SV pattern, and pattern A also to CBGV. However, there are at least two very important aspects along which the expectations triggered by the initial supposition are not fully met. As remarked above, the more accessible a pattern is, the more open it is expected to be to all patterns of occurrences, with which it is supposed to show an association. This is not exactly the case. As can be seen in Tab. 5.17, the idiom class B only shows a weak association with CBGV, but (very surprisingly) no associations to SV. Also, no category shows any strong association with the pattern SCV. And then we get to the second rather controversial aspect denoted by the results of the Correspondence Analysis, i.e. the lack of consistency in the associations between categories A, C, D, and E and the patterns of occurrence.

Let us consider each idiom category at a time. Pattern A shows a very strong

<sup>26</sup> Since idiomatic categories are listed according to a decreasing level of accessibility, pattern B in this table precedes pattern A. On a different note, because the low figures relative to the EV and UV patterns do not allow me to interpret their tendencies, their columns are omitted from the table.

association with SV and CBGV, as expected; beside those, it shows weak bounds to NOV. Interestingly enough, no association is displayed with regard to SCV. Pattern C shows a strong association with SV, a mild one with NOV, and a weak one with both CBGV and SCV. Pattern D is primarily associated with SV, with less strength to CBGV and weakly with NOV. Finally, pattern E is primarily associated with SV, and also shows a mild association with NOV and CBGV. As for the least accessible categories, along with their strong primary association with NOV, they only show weak associations with SV and CBGV, (and, in the case of category F, SCV). Focusing on categories A, C, D, and E, one would expect A to show stronger associations with more variation patterns, with the other three classes being progressively more “conservative”. The situation described above depicts a slightly different scenario. For instance, we can consider the fact that A has no association at all with SCV, or the fact that C has the same level of association with NOV as E, which is stronger than the one displayed by D. Also, C has stronger associations with CBGV than D has.

Drawing conclusions from this situation is definitely less than straightforward, but it seems now possible to propose an answer to Research Question 3, describing the behavior of Italian idioms in context of real usage events. Indeed, a close look at the results of the analysis illustrated above reveals that, while the supposition put forward at the very beginning of the present chapter is to some extent confirmed, it is better to be cautious about the correlation between idiom categories and patterns of occurrence, which cannot be established with certainty. Instead, what really emerges from the application of advanced statistical methods is a two-fold situation. On the one hand, it is possible to observe the following tendencies: in general, categories which include idiomatic constructions whose meaning is more accessible will tend to be associated with patterns of occurrence which suggest some kind of variation, often more than one, and it is likely that the most striking variation patterns will be associated with the most transparent categories; conversely, categories which include idiomatic constructions whose meaning is less directly accessible will tend to be more tightly associated to the No Variation pattern and to non-striking patterns of variation. At the same time, the results of the application of Correspondence Analysis suggest that it is

possible to observe the behavior of some idiom categories which at least to some extent contrast with the general tendencies; therefore, the relationship between idiomatic categories and patterns of occurrence is more controversial than suggested a priori.

I will now provide a characterization of the situation in the light of the attractor-based perspective adopted in the present study. As specified in §5.1, the category of each idiom is part of the meaning pole of its idiomatic cluster, which represents the attractor state. According to the initial prediction, the distinct categories could be seen as analog attractive forces which differ in their degree of strength: on this view, the category denoting idioms whose meaning is least accessible would have the strongest attractive forces, limiting the quantity and quality of variation allowed to occur in the occurrences of its idioms, while categories including progressively more accessible idiomatic constructions would have progressively weaker attractive strength, thus allowing more variation (and more striking variants). As discussed above, this is not accurate, and the results of the statistical analysis seems to require an alternative, less straightforward view. First of all, the difference in strength between the distinct categories does not seem to be exactly gradual: rather, each specific category seems to have its specific force. F, G, and I have an attractive force which strongly constrains the variation patterns of idioms which are part of these categories, while the other categories seem to exert a much weaker attractive force, thus allowing for more variation. Nevertheless, it does not seem possible to say that there is a linear ordering according to which the most accessible category has the weakest attractive strength, the second has a bit stronger one, and so on. Actually, observing Fig. 5.1. and Tab. 5.17, it is also difficult to put the categories A to E into any kind of order. It seems therefore more plausible to state that the category is part of the idiomatic cluster of an idiom and as such exerts a certain amount of force, but the actual behavior of the idiom does not necessarily reflect what the categorization would intuitively suggest.

As will be discussed more in detail in the next section, this consideration is in harmony with what was observed in the previous chapter about the self-organization of the linguistic system regulated by a principle of causal circularity. As illustrated in the examples in §5.2.1, for each idiomatic construction it is possible to observe the

existence of a bundle of formal and meaning properties (the idiomatic cluster) toward which the occurrences of the idiom in real language events tend to converge. Depending on the specific idiom, this cluster can be composed of just a few items or a plurality of elements, which constrain the actual occurrences of the construction in real usage-events. At the same time, the occurrence of an idiom is subject to the situational uniqueness of the context of use. The persistent tension between conventionality and context-specificity gives rise to idiom variation which, as illustrated in §5.2.2, can take several different shapes. Since this phenomenon can be observed at different time-scales and levels of granularity, at the end of the previous chapters I mentioned the possibility to propose a fractal architecture for language. The time is now ripe to return to all these topics, which will be discussed in the following sections.

### 5.3. Discussion

In the previous section, I outlined the results of my analysis of a sample of idiomatic constructions, addressing Research Question 3: first, I provided information about their idiomatic clusters (both with regard to their formal and meaning poles); then, I discussed the several patterns of occurrence which could be observed in the occurrences downloaded from the *itTenTen* corpus; finally, I statistically tested the association between the idiom categories outlined in ch. 4 and the variation patterns introduced in §5.1.2 above. In the present section, I will supply an interpretation of the results of my analysis in the light of the theoretical framework adopted in the present study, drawing some conclusions about the emergent nature of the structure of Italian idioms, tying in the observations made in this chapter and those proposed in the previous one. By so doing, I will provide an answer to Research Question 4, which aims to verify if a dynamic-system approach is adequate to provide a unified model for the phenomena observed in the two phases of the study. I will argue that this is indeed the case, explaining how this approach is able to integrate static and dynamic elements in a single framework. In §5.3.1, I will illustrate how the results of the analysis of stability and variation in the data support a dynamic-systems approach to

the behavior of idiomatic constructions in use, as regulated by the joint action of four mechanisms: self-organization, nonlinearity, causal circularity, and metastability. In §5.3.2, I will then discuss how these four principles can be used to explain phenomena at several different time-scales and levels of granularity.

### 5.3.1. *Self-organization, non-linearity, causal circularity, and metastability*

As outlined more than once, each idiomatic construction displays an idiomatic cluster which functions as the attractor state of a dynamic system, and is made up of a formal pole and a meaning pole. The formal pole includes a (smaller or larger, depending on the specific case) set of morphosyntactic, syntactic, and lexical properties which typically co-occur with the construction. The meaning pole instead comprises a certain conceptual load which is to some extent observable in the majority of the occurrences, and includes a specific semantic content (which lies on one or more - often interacting - motivation patterns) together with a variable range of pragmatic, cognitive, affective, and socio-cultural values usually associated with it. Throughout the present study, I have portrayed the emergence of this idiomatic cluster as the result of a process of soft-assembly: situated communicative events give rise to conventional patterns of usage that emerge through the interplay of linguistic, cognitive, social, and ecological factors. When these patterns, which spontaneously arise from interpersonal interaction, are successfully reiterated during the conversation and in future linguistic events, they are selected to be part of the idiomatic cluster (cf. Rączaszek-Leonardi and Kelso 2008; Rączaszek-Leonardi 2013).

The tendencies displayed by the data analyzed in the present study and illustrated in the previous section clarify that the use of idioms is characterized by a persistent state of metastability. The occurrences collected in my sample of idiomatic constructions simultaneously display two opposite inclinations, due to the tension between the conventionality of their form and meaning and the uniqueness of each situated usage-event. On the one hand, language users tend to stick to the bundle of properties included in the idiomatic clusters. The results of the statistical analysis

exposed in §5.2.3 shows that this is in particular the case for those idioms whose figurativity is more difficult to reactivate. On the other hand, according to the characteristics of the specific discursive and situational context, speakers can manipulate the form and/or meaning of idioms. This happens more often with idiomatic constructions whose figurativity is easier to be reactivated. Each usage-event of an idiomatic construction is characterized by a tension between these two tendencies: the attractive force of the idiomatic cluster and the exposure to the influence of the communicative situation, and each particular occurrence can be seen as the result of this contrast. This scenario can be seen as the result of the action of the principle of causal circularity which, as specified in the previous chapters, regulates the “life-dynamics” of both single idiomatic constructions and the whole set of idioms of the Italian language.

In §5.2.3, I made an observation about the quantitative dimension of the 4,809 occurrences included in my sample which is remarkable. I observed that approximately 40% of the tokens belong to a pattern of occurrence which includes inconspicuous variants, i.e. variations in the formal structure of the idiom which do not particularly affect its meaning. Then, I could observe that the remaining 60% is almost fairly shared by the other patterns of occurrence which display some level of variation on the one hand and the one which does not describe any variation at all (NOV) on the other hand. Interestingly, there are two possible readings of this situation, according to the aspect which is meant to be stressed. On the one hand, it may be possible to conclude that about 70% (40% Systematic Variants + 30% No Variation) of the total occurrences either strictly adhere to the idiomatic cluster or show variation patterns which are not particularly striking; consequently, it might be said that idioms are a rather conservative class of linguistic units. On the other hand, it is possible to claim that about 70% (40% Systematic Variants + 30% the rest of variation patterns) of the occurrences denotes some degree of deviation from the idiomatic cluster; therefore, it may be said that overall, idiomatic constructions show quite a large level of variability and so are quite open to innovation. I would say that both conclusions are legitimate, and only capture a part of the story: choosing an interpretation over the other would make little sense. Indeed, I would argue that the

two conditions are complementary rather than mutually exclusive, and their simultaneous realization is indeed an example of metastability, in that it captures the state of the system brought about by the contrast between two opposite tendencies<sup>27</sup>.

At the level of the total amount of occurrences analyzed in the present study, it is possible to observe a situation of substantial balance between stability and variation. Focusing on the data sample at a more specific level, this situation seems to be mirrored, to a considerable extent, by the tendencies displayed by the tokens of the various single types, where the relationship between stability and variation again seems to show a complementary nature. In 35 cases out of 50 (70%) SV is the prevalent pattern of occurrence. In 19 cases out of 35, it is followed by another variation pattern (either CBGV or SCV) and then by NOV, while in 16 cases it is followed by NOV and then by other variation patterns. In the remaining 15 types (30%), NOV is the predominant pattern, followed by SV in 13 cases (26%), and by another variation pattern in the couple of cases left (4%). These data are summarized in Tab. 5.18 below.

Tab. 5.18: the prevailing patterns of occurrence in the data.

Pattern	Number of types	Percentage
<b>Prevalence of SV</b>	<b>35</b>	<b>70%</b>
SV – other - NOV	19	38%
SV – NOV - other	16	32%
<b>Prevalence of NOV</b>	<b>15</b>	<b>30%</b>
NOV – SV – other	13	26%
NOV – other – SV	2	4%
<b>GRAND TOTAL</b>	<b>50</b>	<b>100%</b>

It is also possible to observe that in 31 cases (62%) the sum of the occurrences of SV and NOV accounts for a number of tokens included in a range between 60% and 80%, while in 12 cases (24%) this value is greater than 80%, whereas in the remaining 7 cases (14%) this value is inferior to 60%. Similarly, in 21 types (42%), the sum of the occurrences of all variation patterns (i.e. all patterns excluding NOV) assumes a value

<sup>27</sup> It can be noticed once more that either reading argues against the longstanding view of idioms as “non-decomposable items of non-literal language”.

between 60% and 80%, while in 15 cases this value is superior to 80%, and in 14 cases it is smaller than 60%. A summary of these data can be found in Tab. 5.19 below.

Tab. 5.19: stability and variation in the occurrences of every type.

Pattern combination	Number of types	Percentage
<b>SV + NOV</b>	<b>50</b>	<b>100%</b>
Percentage of tokens: <60%	7	14%
Percentage of tokens: $60 \leq x \leq 80$	31	62%
Percentage of tokens: >80%	12	24%
<b>SV + CGBV + SCV + EV + UV</b>	<b>50</b>	<b>100%</b>
Percentage of tokens: <60%	14	28%
Percentage of tokens: $60 \leq x \leq 80$	21	42%
Percentage of tokens: >80%	15	30%

While providing detailed information about the tendencies displayed by the tokens of each type would be beyond the scope of the present study, these tables seem to illustrate quite well the behavior of language users with reference to the use of idiomatic constructions, which simultaneously realizes the opposite tendencies toward stability and variation. Of course, a comparison between the two pattern combinations shows the figures not to be symmetric, as they are not expected to be, indeed. Although above I just outlined the fact that they embody the two different, complementary inclinations, their relationship is not linear. Rather, they are both resulting from the actual behavior of the language users in each specific usage-events, which tends to reflect the balance between the two tendencies, but at the same time provides its own small contribution to either reinforce or redefine it<sup>28</sup>.

Though perhaps somewhat less than obvious, in a dynamic-systems perspective this kind of metastability is to be expected<sup>29</sup>: it is normal to find variation in actual usage-events, since it is inherent (though possibly to different extents) in any process characterized by the interplay between an indefinite number of factors; furthermore, it

28 Actually, a weighted average of the figures related to the two patterns illustrated in Tab. 5.19 (omitted here for clarity's sake) would give more similar results, speaking in favor of the simultaneously deterministic and non-linear behavior of the idiomatic constructions in actual usage-events (see below).

29 This result is also expected within the cognitive-linguistic tradition (see. e.g. Croft 2000, 2009).



is hardly surprising that this interactivity over time causes the emergence of systematicities, reflected in the conventional patterns included in the idiomatic clusters. The whole process is regulated by the mechanisms of self-organization, often mentioned in the previous chapters, whereby a form of global order arises out of the local interaction between the components of an initially disordered system. This process is spontaneous: although sensitive to the initial conditions, it is neither directed nor controlled by any agent or subsystem inside or outside the system. The resulting organization is distributed all over the components of the system. As such, it is robust and able to survive and self-repair substantial damage or perturbations.

In dynamic-systems terms, it can be said that the trajectory of usage-events spontaneously “digs” an attractor state (conforming to the metaphor of attractors as wells in a landscape), represented by the idiomatic cluster, which includes all the formal and meaning properties quantitatively detected in the occurrences of the linguistic units under consideration. Over time, the new occurrences of an idiom will tend to converge toward the attractor, which thus constrains the use of these constructions. At the same time each usage-event contributes to draw a trajectory of usage which in turn can contribute to re-shape the attractor state, in harmony with the principle of causal circularity. While the general equilibrium of the system is preserved in case of slight, everyday perturbation (e.g. the occasional use of a construction in a strikingly non-conventional way), it is nonetheless important to underline that, in exceptional cases, specific circumstances can cause the gradual emergence of another attractor which can compete with the pre-existing one: the system can thus be said to be at a bifurcation point. As pointed out in §2.3, one of the two structures will eventually die out, or both will be retained. In the latter case one of the two will probably undergo a process of specialization (e.g. Smith 1996). It is important to underline that, while this process is usually gradual, a particularly strong perturbation may cause an abrupt phase shift, causing the system to abandon the old attractor, switching to the new one. This is for instance the case when a specific construction is used in a specific, non-conventional way by somebody in the public eye and then rapidly spread through the media, with the new usage quickly replacing the traditional one as the standard. In this case, the system undergoes a catastrophic

change, but the distributed nature of the system and principle of self-organization allow it to reach a new balance in a reasonably quick time. Now, the tension between stability and variation will have the new attractor as a reference point.

As observed in §5.2.3, and emphasized at the beginning of the present subsection, there is a statistical association between the category an idiomatic construction belongs to and its pattern of variation which, while overall confirming the expectations, also proves to be less linear than supposed a priori. It seems convenient to deal with these two issues in order. First of all, it is possible to observe that the association between a category and a pattern of occurrence is related to the level of motivation of the different idiomatic constructions, i.e. the possibility to understand why an idiom has the figurative meaning it has given its literal meaning. On the one hand, the categories which include the idioms whose meaning is more opaque are those which are strictly associated with the NOV pattern of occurrence; on the other hand, the other categories show stronger associations to patterns which denote some levels of variation. This point suggests that the occurrences of the idioms included in categories F, G, and I adhere more strongly to their idiomatic cluster, and therefore show a stronger attractive force. In these idioms, stability overcomes variation. Conversely, the occurrences of the idioms belonging to other categories display more variation, showing that the influence exerted by the idiomatic clusters on their occurrences is not as strong. This observation is in accordance with the conclusion drawn by Langlotz's (2006a) about the correlation between the two variables. In the perspective of the dynamic construction-network outlined in §4.3.1, this means that the idiomatic constructions belonging to categories F, G, and I are characterized by stricter restrictions with regard to the abstract grammatical patterns they can reflect, and on the specific words which can fill a particular position in a given construction; the other categories, instead, display looser restrictions and allow for more variation.

Nevertheless, as already underlined at the end of §5.2.3, a closer look at the less rigid patterns (from A to E) shows some results which are not strictly in line with the original supposition: the behavior of category C seems to allow for less (and less striking) deviations from the idiomatic cluster than pattern D. Moreover, it has been observed that, while it would be expected that progressively more accessible idiomatic

categories would be *progressively* more open to a wider range of variation patterns, this is not exactly the case. This has been again attributed to the fact that, while dynamic systems denote some global tendencies, these are not to be expected to work linearly. Throughout the present study I have been mentioning the fact that the nature of language is self-organizing and non-linear. The fact that the status of a variable in both a single idiom and the whole set of idiomatic expressions (which are related to one another) in a language in a certain moment is a function of their status in the preceding moment, seem able to be expressed mathematically adopting a variant of the logistic map illustrated in (52) below (cf. Van Geert 2003):

$$(52) \quad L_{t+\Delta t} = L_t + L_t * \text{rate}_{\Delta t} * (1 - L_t / K_t)$$

In §3.1, I introduced Giunti's description of dynamic systems which follow a deterministic path of evolution. However, throughout the present study I have repeatedly emphasized the non-linear nature of the evolution of linguistic constructions, as well as of sets of linguistic units (both of which are systems, intertwined), whose behavior in real usage-events is hardly predictable. The logistic model illustrated in (52) embodies the notion of *deterministic chaos*, whose ability to reconcile the dichotomy between the two apparently incompatible phenomena of determinism and nonlinearity has been increasingly appreciated, during the last decades (e.g. Schuster and Just 2005)<sup>30</sup>. The logistic map is indeed able to provide a description of systems which, despite being initially described by deterministic equations, show irregular behavior and strong sensitivity to the initial conditions, like linguistic phenomena. The multiplicity of interdependent variants which take part in the evolution of linguistic units (at different levels, simultaneously) does not allow one to know the exact state of the system at a specific point in the future, but only to probabilistically predict the behavior of the system, on the basis of trends which can be repeatedly observed at different levels in the very long term.

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30 While an illustration of the deterministic chaos would be beyond the scope of the present study, the reader is referred to Vulpiani (2007) for a brief introduction (non-Italian speakers can see Ward 2002: chs. 23-24).

### 5.3.2. *Multiple time-scales and levels of granularity*

Throughout the present study, I have been repeatedly underlining the fact that the basic principles of the dynamic-systems approach can be observed at work at different time-scales and levels of granularity. Now that these mechanisms have been introduced in detail and applied to the phenomena under consideration, it is time to provide a more inclusive illustration of this multi-scalar and multi-level functioning. First of all, we can go back to the distinction between the *single-type* and the *inventory-of-types* levels. It has already been specified that the former refers to the state of single specific idiomatic constructions, while the latter concerns the state of the whole set of idioms which are part of the construction of a language. As observed in §3.5 and §4.2.3, each of these levels can be considered from an intrapersonal or an interpersonal perspective.

In the former case, they respectively represent the status of an idiomatic expression and of the whole set of idioms for a specific language user. Intuitively, from the intersubjective point of view, a specular situation would be observable; nevertheless, the interpersonal level is much more fragmented than the individual level: unlike the individual dimension, the collectivity can be fractioned in a number of ways according to a wide range of criteria. While in §4.3.3 I conflated all the possibilities into one level for ease of exposition, thus adopting a four-way distinction, it is crucial to recognize the existence of a multiplicity of social groups (of different kinds and sizes) and take them into consideration, in order to provide a more plausible account of the interaction between the single-type and the inventory-of-types levels (see §5.4.2 below).

The plurality of social groups should give an idea of the complexity of the phenomenon, since each individual is normally engaged in an indefinite amount of interactions with an indefinite number of people, with an indefinite number of purposes, in an indefinite number of contexts, and so on. Each interaction is characterized by different degrees of overlap between the values each construction has for the interactants, and can thus be said to be the center of a negotiation process between the interlocutors. The degree of shared values between the participants will be normally more than enough for the conversation to take place without the speakers

even noticing the negotiation process. This is due to the attractive force of the shared values, which makes the occurrences of the expression converge toward a limited number of form and meaning properties. At the same time, in every interaction, each speaker contributes to shape this bundle of values shared by the members of the group; in turn, each interaction contributes to shape the value of the constructions for each speaker.

The mutual influence between these multiple levels of linguistic interactivity described above already hints at the need to take into account the different time-scales of human activity. The basic dynamic-systems principles which govern the (at least to some extent coupled) evolution of the single-type level and the inventory-of-types levels can be considered at multiple distinct spans of time. Let us consider the finest level of granularity: a face-to-face interaction between two single interlocutors. The use of a specific idiomatic construction or all the idiomatic constructions which are used during the interaction will display a certain trajectory, which will plausibly adhere to the attractor state, to a certain extent, while at the same time will tend to re-shape it on the basis of the variables which intervene during the communicative event (cf. Cameron 2007; Gibbs and Cameron 2008). While the evolution of the conversation affects the shared values attributed to the constructions by the interactants, it will also have consequences for the value of the constructions for each speaker, both with regard to a specific construction and to the whole set of constructions.

From the present perspective, the same phenomenon will be observed taking into consideration progressively longer time-scales, i.e. the use of the idiomatic constructions by the two interactants over series of distinct face-to-face conversations. For instance, in the case of two people who meet very often, it would be possible to take into consideration their interaction within days, weeks, months, and years. Of course, since these phenomena are nonlinear, they are open to different kinds of perturbations. It is important to keep in mind that different scales are to be taken into consideration for all the different possible interactions between an indefinite number of groups of people, as specified above. Obviously, not all levels of granularity will be coupled with the same time-scales. For instance, in the case of a dual interaction, it

will only make sense to consider spans of times which fit within the life of a single human being, since (even in the best case scenario) the interactions will unavoidably end with the demise of one of the participants. By considering progressively bigger groups of people, it could be possible to take into consideration progressively longer scales, which may fall within the socio-cultural and even the historical range, like in the case of the whole population of a country<sup>31</sup>.

It should be clear, on the basis of the discussion presented in the present subsection so far, that idiomatic constructions are extremely complex phenomena and their study is a challenging enterprise; nevertheless, a dynamic-systems approach allows the analyst to explore them at multiple different time-scales and levels of granularity. Indeed, at all the distinct time-scales and levels of granularity it is easy to see that the evolution of a the system is a self-organizing process: at all possible scales and levels there is an indefinite number of variables which can “enter the field” and engage in a continuous interplay, and it is the interaction itself which bears all the possible paths of evolution of the system, without the need for any internal blueprint or external intervention (cf. Gibbs 2011)<sup>32</sup>. The interaction between all the variables is governed by the principle of causal circularity, which determines the balance between stability and variation, keeping the system in a metastable state.

As I have already mentioned in the previous chapters, the adoption of a dynamic model does not clash with the static nature of my data. It is important that to keep in mind that the use of a construction depends on both the immediate situated context and historically established socio-cultural practices. While it is useful to describe each distinct time-scales and levels of granularity as separate from each other, in the real world shorter scales are encapsulated into longer ones, and finer levels of granularity are nested within coarser ones; furthermore, as mentioned in §4.2.3, they are constantly integrated. From the present perspective, it is possible to capture the tension between stability and variation at a precise point in time by making use of dynamic-systems tools<sup>33</sup>.

31 Given that I am focusing on idiomatic constructions in a specific language, it would probably make little sense to mention evolutionary scales.

32 The sensitivity of the system to each factor is not exactly the same through the different spans of time and granularity levels.

33 Paraphrasing Thibault (2014), it is the total dynamics all over these scales which determines the normally perceived scales of linguistic events. The continuous interplay all over these scales

One of the leitmotifs of the present study is the fact that idiomatic constructions are a part of the constructicon, the network-shaped inventory of constructions of a language. In particular, this topic has been explored in detail in §4.3. Each idiomatic construction is supposed to have its own “network”, including those other idiomatic constructions with which it shared some form and/or meaning properties; these connections vary in terms of strength and quality. Along with having its own network, an idiom will then also be part of the networks of other idiomatic expressions, to which it will be related by lexicogrammatical and/or conceptual links. It has been argued that there will be a constant interaction between constructions within and across networks, and that each idiom will also be interplaying with other, non-idiomatic linguistic constructions, of distinct levels of abstraction/concreteness and generality/specificity. It has also been argued that networks also include links to non-linguistic aspects of life in the extended ecology people dwell in. In the next section, I will first recap the main points highlighted in the present section, summarizing the answers to Research Questions 3 and 4; then, I will propose an outline of the ontological status of language.

#### **5.4. Concluding remarks**

The concluding section of this chapter will be divided into three subsections. In the first two, I will outline the answers the previous subsections allows me to provide to Research Question 3 and Research Question 4, which were the object of the present chapter. In §5.4.1, I will first briefly outline the variational behavior of Italian idioms in occurrences of real language events in the light of a dynamic-systems framework; then, I will summarize the association between idiom categories and variation patterns. In §5.4.2, I will concisely review the efficiency of a DST approach to provide a unified model of the phenomena observed in the two stages of the present analysis (namely the classifying task carried out in the previous chapter, and the analysis of the occurrences performed in the present one). Finally, in §5.4.3, I will

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constrains the quantities to oscillate around the average level that can be mapped as a trajectory that defines a limit cycle.

sketch the picture of the ontological nature of language which emerges from the observations made throughout the chapter, providing a sort of “bridge” between the present chapter and the next one.

#### *5.4.1. Addressing Research Question 3*

One of the aims of the present chapter was to provide an answer to Research Question 3, which had the goal to observe the behavior of Italian idioms in terms of their levels of systematicity and variation, empirically observed in a sample of data of real usage-events, and to evaluate what it tells us about the nature of these constructions. The analysis of 4,809 occurrences of 50 idioms revealed that stability and variation are both inherent in the behavior of idiomatic constructions. For each of the 50 idioms it was possible to detect the idiomatic cluster including a bundle of formal properties as well as a set of characteristics related to meaning toward which the occurrences of the construction tend to converge, although the “attractive strength” of this cluster is not homogeneous, but varies according to the case. Each occurrence will display a certain behavior with reference to this idiomatic cluster, ranging from total conformity (represented by the NOV pattern) to different degrees of deviation (represented by the various patterns of variation listed and illustrated in §5.1.2). At the same time, each use of a construction represents a (small, usually hardly perceptible in the short term) contribution to re-shaping the idiomatic cluster. The process is actually governed by a principle of causal circularity, which keeps the system in a metastable state where the opposing tendencies toward stability and variation are simultaneously realized. It is important to underline that this process is not directed or controlled by any internal or external agent, but organizes itself on the basis of the constant interaction between the elements of the system.

Considering the total amount of tokens, 40% of the occurrences displayed a moderate degree of variation (i.e. the SV pattern), related to some constructional adaptation but with no major change in meaning. The remaining 60% can be almost equally divided between more conspicuous variants (i.e. CBGV, SCV, EV) and the perfect adherence to the idiomatic cluster. It has been argued in §5.3.1 that this



situation can be read in two possible, complementary ways: on the one hand, about 70% of the total occurrences show either inconspicuous variation or no variation at all, and therefore idiomatic constructions can be seen as rather conservative linguistic units; on the other hand, about 70% of the total occurrences show some level of variation, and therefore idioms are quite open to alterations. Again, two opposing tendencies are realized at once, arguing in favor of the metastability of the system.

Referring to the categories outlined in the previous chapter, the prediction that idioms whose meaning is less accessible to a speaker's reactivation of their figurativity (i.e. the ability to understand why a specific idiom has the figurative meaning it has, given its literal meaning) would be more resistant to variation, while progressively more accessible idioms would be *progressively* more open to variation was statistically tested, and to some extent confirmed. However, while the result was rather straightforward for the former kind of idioms (those who belong to categories F, G, and I), the results for the latter sort of idiomatic constructions (those belonging to categories A to E) showed a less linear behavior. In particular, the idioms belonging to category C represent a discontinuity, since they are less open to variation than category D, while category B, the one including the most accessible idioms only shows a weak association with CBGV and none at all with any other pattern. The conclusion which seems to be plausibly drawn is that the relationship between idiom categories and patterns of occurrence shows some general tendencies, but it is not as linear as could be expected a priori.

#### 5.4.2. Addressing Research Question 4

The other main purpose of this chapter was to provide an answer to Research Question 4, which concerns the adequacy of the basic principles of DST to provide a unified model for the phenomena observed in the two phases of the analysis carried out in the present study: the more static, top-down process of idiom categorization described in the previous chapter, and the more dynamic, bottom-up investigation of the occurrences of each idiomatic construction in real language occurrences. This question is due to the fact that, despite the two stages of the study being interrelated, the nature

of their interaction may be less than straightforward to notice, due to the persistence of the dichotomy between system and discourse; therefore, the use of the same mechanisms to integrate them in a single process may encounter some skepticism. Nevertheless, the use of the basic notions of DST proves able to provide a description of the two stages of the present study and show that they are actually part of a single process, overcoming the longstanding dichotomy mentioned above as well as the other traditional dichotomy in linguistic studies between synchrony and diachrony.

The possibility to overcome these dichotomies and see the continuity between the phase of my study portrayed in the previous and the present chapters is made possible by three interwoven notions: *time-scale*, *level of granularity*, and *temporary phase*. The first notion captures a span of time at which an event can be taken into consideration, the second one portrays the individual / collective dimension of a process, and the last one indicates a synchronic state of the system. Recapping what has been said throughout the present study, my focus has been on the analysis of the socio-cognitive status of both specific idiomatic constructions, which I labeled the *single-type* level, and of the whole set of Italian idioms, which I labeled the *inventory-of-types* level. Both these levels can be observed in their intrasubjective and intersubjective dimensions, which stand in a relationship of mutual influence. As underlined in §5.3.2, the collective dimension can (at least in principle) be fragmented in an indefinite number of groups of different size and nature, which corresponds to the level of granularity. Each usage-event in each different group will have an influence on the status of a construction for each individual member of the group and will have some influence on their use of the construction in the individual's subsequent interactions, both with the other members of the group and with other people.

Given the nature of my database, here I have focused on the broad community of Italian web users. The occurrences downloaded from the corpus can apparently only offer a snapshot of how this community uses the distinct constructions nowadays, but here is where the concept of time-scale enters into play. In §5.3.2, I outlined how each specific phenomenon can be observed taking into consideration different spans of time, making clear that they are not isolated, but rather continuously interact with each

other and are constantly integrated. Consequently, the situation which can be observed with regard to both the single-type level and the inventory-of-type level at a specific moment is the result of the integration of the evolution of the system at multiple distinct time-scales. It is against this background, that the term “temporary phase” is particularly appropriate to describe the state of the idioms portrayed by the data analyzed in the present chapter. This notion is crucial in capturing the continuity between the two stages of the present study: the description of the self-organizing structure of Italian idioms supplied in the previous chapter and the investigation of real-language data provided in the present one.

In the light of the dynamic-systems approach adopted in the present study and the analysis of the occurrences offered in this chapter, it is indeed possible to assert that the self-organizing nature of the linguistic system causes the emergence of an attractor state, which in the case of a single idiomatic construction is represented by the idiomatic cluster often mentioned throughout this study. While the occurrences of the construction tend to converge to the attractor, they are nevertheless sensitive to the multiplicity of variables which affect the specific context of use; as a result, an occurrence of the construction may (though it does not have to) to some extent deviate from the attractor state, and participate in a process of re-shaping the attractor, whose results are usually hardly noticeable in the short term, but can be quite dramatic in the long one. The conventional meaning of the idiomatic construction carefully described in ch. 4 emerged spontaneously as a result of this self-organizing process, and indeed represents the status of the expression at a specific moment in the ongoing flow of events; in turn, it also plays a role in constraining the future evolution of the system, in accordance with the principle of causal circularity.

#### 5.4.3. *Language ontology in a nutshell*

While a general discussion of the implications of the present study for the broader field of linguistic theory will be left for §6.2, at the very end of the present chapter I will devote a few words to a brief summary of what the application of a dynamic-system approach to the study of Italian idiomatic constructions allowed me to observe

and conclude about the ontological status of language. In §2.3, I had specified that the observation of linguistic phenomena from a distributed, ecological perspective enabled me to capture the inherently context-sensitive nature of linguistic events, and the inherently social nature of language, which is embedded in a larger ecological system including other cognitive, social, and environmental aspects. As a consequence, the conception of linguistic communication as an encoding/decoding activity based on the mental manipulation of symbolic representations typical of formal approaches (e.g. Jackendoff 1994) is untenable and needs to be replaced with a perspective which places the interactive aspect at the center of linguistic communication.

As Thibault (2014) recently underlined, linguistic activity is better conceived of as a process of becoming, rather than as a static processing of abstract forms. People use language in the extended human ecology; therefore, lexicogrammatical constructions are integrations of networks of virtual potentialities that have been stabilized on cultural-historical time-scales by habit, routine, and convention in a population of agents. From this starting point, my study on Italian idioms represents a window into the complex ecology of interactive agents, which also interplay with the physical environment. My case-study on the use of idiomatic constructions in a sample of occurrences drawn from a web-based corpus which covers distinct genres of communication inevitably touches elements which are outside the scope of a mere linguistic analysis. The analysis of a specific occurrence of a particular idiom in a certain language implies taking into consideration the following aspects: the situated discourse context, the shared knowledge between the interlocutors, the linguistic register used, the common cultural background of the speakers of the language, and the affordances offered by the digital environment. As can be noticed, all these aspects transcend the merely linguistic character, to embrace aspects which ranges from the psychological through the socio-cultural to the material<sup>34</sup>.

From this perspective, language is an example of a cognitive function which cuts

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34 As specified at the end of the introduction of the present thesis, in a corpus-informed study like the present one, this information will often be only partially available, due to the very nature of the data. As a consequence, in order to be able to fully appreciate the importance of these factors in shaping linguistic phenomena, it would be ideal to integrate corpus-data analyses with psycholinguistic, sociolinguistic, and interaction studies.

across internal and external resources to regulate the life of individuals and social groups in a specific niche. These aspects are tightly interwoven, and actually it is not always easy to tell where one exactly ends and the other begins. I would therefore suggest that they should be seen as facets of a single object – the system made up of coupled agent and environment - which progressively flow into one another. Because these “facets” can be seen as roughly displaying the same structure, I proposed that it would be worth investigating their fractal patterns, in harmony with recent trends in some branches of cognitive science. Indeed, all these facets show a self-similar structure, with the distinct aspects which characterize them resembling each other with reference to their structure and behavior, which are deeply interconnected, since they exert a constant influence on each other. In this chapter I argued that each phenomenon can be observed at different time-scales and levels of granularity, underlining the all-important fact that linguistic and cognitive processes are characterized by a strong sensitivity to the interwoven dimensions of time and population size.

With reference to language in particular, I endorsed the constructionist perspective outlined in §2.3, according to which the linguistic system can be conceived of as a network of constructions of different levels of abstraction and complexity, but it also includes cognitive, affective, socio-cultural concepts, and even material artifacts. All these elements are not crystallized into a linguistic expression but are tightly coupled to the use of certain linguistic units. I argued that this network is in turn made up of subnetworks: each linguistic unit has its own dynamic network including all the constructions, concepts, and constructs with which it is in some way associated. Since I argued that this self-similarity can be observed at different time-scales and levels of granularity, it seems sensible to consider the possibility to adopt the notion of multifractality introduced in §3.6 to provide a description of the phenomena which can be observed in the context of human interaction.

As Kelty-Stephen and colleagues point out,

Multifractality reveals the possibility that heterogeneous system behavior may reflect patterning by interactions across many scales rather than by separable components acting independently at one scale or another.

(Kelty-Stephen et al. 2013: 30)

From the point of view of the language theoretician, it may be plausible to propose that multifractality seems to be ideal to capture the principles of self-organization, causal circularity, nonlinearity, and metastability at different time-scales and levels of granularity at one glance, offering a unified framework for the study of a broad range of phenomena regarding interactivity in the human ecology. While at present this is a very big claim which is yet not supported by an adequate body of empirical evidence, it seems reasonable to argue that this perspective deserves to be taken into consideration in the field of linguistic theory, since it may help the analyst to approach linguistic phenomena as manifestations of human activity and interactivity, abandoning the die-hard conceptions of linguistic communication as an encoding/decoding of abstract symbols. In the next chapter, the value of an ecological account of language guided by the principles of DST will be outlined in more detail, together with the limitations of the present studies, and a series of open questions and possible venues for future research.

## 6. Conclusion

In the present chapter, I am going to conclude my study addressing a few points which emerged on the basis of the observations made throughout the previous chapters. First of all, in §6.1, I will explicitly revisit the research questions in the light of the adoption of the dynamic-systems approach adopted to carry out this study. Then, in §6.2, I will consider the consequences of the results of the successful application of a dynamic-systems approach for the development of a plausible theory of language. Next, in §6.3, I will address some of the limitations of the present study and suggest how they could in principle be amended in follow-up studies. Finally, in §6.4, I will proceed to some reflections concerning open questions and propose some possible future venues for research.

### 6.1. A dynamic-systems model of idiomatic constructions

Throughout the present study, I made a case for the adoption of a dynamic-systems approach to the investigation of linguistic phenomena, choosing Italian idioms as a case-study. In the previous chapters, I showed that this kind of approach enabled me to tackle the target phenomenon extending some key notions developed within the Cognitive Linguistics framework in the light of a more distributed, ecological perspective on the study of human language and cognition. The basic principles of DST proved adequate to make the most of this combination of perspectives, representing an ideal framework to describe and explain the socio-cognitive status and the variational behavior of idiomatic expressions from a constructionist, usage-based perspective. In the previous chapters, I have often underlined the fact that idiomatic constructions can be characterized as self-organizing and nonlinear dynamic systems, and their use in real language events can be seen as regulated by the principles of causal circularity, which lead the system into a state of metastability, with regard to both what I labeled the “single-type level” (which refers to one idiomatic construction only) and the “inventory-of-types” level (which makes reference to the whole set of

idioms which can be found in a linguistic system), which are highly interdependent. Moreover, I have highlighted the fact that these properties can be observed both intrasubjectively and interpersonally, at multiple time-scales and levels of granularity. It is now time to go back to the research questions and discuss the findings of the present study in the light of the dynamic-systems perspective adopted.

Research Question 1, which was addressed in ch. 4, aimed to assess the adequacy of Langlotz's (2006) classification of idiomatic constructions into different patterns to describe the status of Italian idioms. Langlotz's model actually proved sufficiently consistent and thus adequate to be applied to the analysis of Italian idiomatic constructions with no particularly remarkable revisions: the only significant modification I contributed was the avoidance of the potentially misleading distinction between “core” and “marginal” types of idioms. Each of the 150 idioms analyzed could fit into one of Langlotz's idiomatic categories (although in some cases it was not so straightforward to decide which category to allocate an idiom to). Therefore, it can be said that the original classification worked well for the purposes of building a typology of Italian idioms. This categorization process enabled me to observe the inherently complex nature of Italian idiomatic constructions, which could be characterized as quantitatively uniform (more than 70% of the idioms belong to one of two categories) but qualitatively heterogeneous (there are big differences from one idiom to another with regard to the relationship between their literal and figurative meaning, both within the same category and across distinct patterns).

Research Question 2, also addressed in ch. 4, inquired into the mutual relationship between different idiomatic constructions and between idioms and non-idiomatic constructions which are part of the grammar of Italian in terms of a constructionist approach, according to which language is a network-shaped inventory of units, which also provides the resources for production. I posited that each idiomatic construction can be seen as possessing its own “idiomatic network”, i.e. a subnetwork which includes all the other idiomatic construction to which it is connected by a formal and/or meaning links. Moreover, I also underlined that each idiom will also unavoidably be linked to other constructions of different levels of abstraction/concreteness with which it shares traits which regard its form and/or



meaning (for instance, the syntactic structure of the citation form of an idiom is inherited from a more abstract pattern). I underscored the fact that the connections between different constructions are not fixed, but they change over time: on the basis of language use, the existing links between different constructions can be tightened or loosened, and new links may emerge while old ones may die out, in a constant self-organizing process.

Research Question 3, addressed in ch. 5, focused on the tendencies displayed by Italian idiomatic constructions in attested occurrences of real linguistic events, taking Langlotz's model as a starting point, conveniently revised in order to amend some of its shortcomings. The analysis of the tokens revealed that both stability and variation are inherent in the behavior of idiomatic constructions: each occurrence displays a certain behavior with reference to an idiomatic cluster, which can range from total conformity to different degrees of divergence, showing the nature of idioms as a rather heterogeneous class. At the same time, each usage event contributes to re-shaping the idiomatic cluster (the impact of each usage event is normally hardly perceptible). It was speculated that it would be possible to find a causal correlation between the categories of idioms outlined in ch. 4 and the variation patterns introduced in ch. 5: the occurrences of idioms whose figurative meaning is less accessible to a speaker's reactivation would be more resistant to variation, while the occurrences of progressively more accessible idioms would be progressively more open to variation. At the level of general tendencies, statistical testing to a certain degree confirmed this prediction; however, while the result was rather clear for the former kind of idioms, the latter sort of idiomatic constructions showed a more discontinuous behavior, suggesting that the relationship between idiom category and pattern of occurrence is not as linear as could be expected a priori.

Research Question 4, which was also addressed in ch. 5, concerned the adequacy of a dynamic-systems approach to provide a unified explanation for the two phases of the present study. The answer to this question allows to wrap up all the observations made throughout the empirical part of the present work. Actually, the basic principles of DST did prove able to describe the two stages of the present study and show that they are actually part of a single process, thus overcoming two long-standing dichotomies:

*system vs discourse* and *synchrony vs diachrony*. This was made possible by the adoption of three interwoven notions, used in both ch. 4 and ch. 5: *time-scale*, *level of granularity*, and *temporary phase*. The first one defines an interval of time at which an event can be considered, the second one describes the individual / collective dimension of a process, and the last one indicates a moment at which it is possible to observe the system. My focus has been on the analysis of the socio-cognitive status of both specific idiomatic constructions (the *single-type* level), and of the whole set of Italian idioms (the *inventory-of-types* level) which can both be observed in their individual and collective dimension, which stand in a relationship of interdependence. The latter can be segmented in an indefinite number of groups of various types and sizes, which corresponds to the level of granularity. Given the nature of my database, here I focused on the broad community of Italian web users.

The occurrences downloaded from the corpus can obviously only offer a snapshot of how this community uses the various constructions nowadays, but this is why the notion of time-scale proves important: each specific phenomenon can be observed taking into consideration different time-spans, which are not isolated, but rather continuously interact with each other and are constantly integrated. Consequently, the situation which can be observed with regard to both the *single-type* level and the *inventory-of-type* level at a specific moment is the result of the integration of the evolution of the system at multiple distinct time-scales. Against this background, the label “temporary phase” is particularly appropriate to describe the state of the idioms portrayed by the data analyzed in ch. 5. This notion captures the connection between the two stages of the present study.

In the light of the theoretical approach adopted in the present study it seems possible to propose that the self-organizing nature of language causes the emergence of an attractor state, which in the case of a single idiomatic construction is represented by the idiomatic cluster. While the occurrences of the construction tend to converge to the idiomatic cluster, they are also sensitive to the multiplicity of variables which influence the specific frame of reference; consequently, a token of the construction may display some degree of deviation from the attractor state, contributing to re-shaping the idiomatic cluster. The conventional meaning of the idiomatic construction

carefully described in ch. 4 spontaneously emerged as a result of this soft-assembling process, and represents the status of the expression at a specific time in the ongoing stream of events; in turn, it also plays a constraining function in the future developments of the system.

In the next section, I will propose the implications of the application of a dynamic-systems approach to the study of idiomatic constructions on the development of a plausible theory of language. Such an approach, doing away with the tenets of the traditional generative paradigm (but also with the first wave of the cognitive-linguistic framework), avoids any kind of cognitive centralism; rather, it takes complexity and context-sensitivity as the starting points to unveil the mechanisms which regulate the emergence, change, development, and evolution of the linguistic system, whose dynamics are described and explained in terms of the interaction of a multiplicity of agents and variables.

## **6.2. Implications for a plausible theory of language**

The results of the study outlined in the previous chapters demonstrate the viability of a dynamic-systems approach to describe and explain linguistic phenomena, supporting the findings of other studies carried out by a few linguists working within a functional-cognitive framework (e.g. Elman 1995; Ellis and Larsen-Freeman 2010). As repeatedly underscored throughout the present study, this approach goes against the traditional view of language as a code which transfers meaning from a person to another (e.g. Sperber and Wilson 1995). While the latter provides an intuitively simple and elegant model of communication, it fails to take into account the context and the multiplicity of variables which constantly (re-)shape the linguistic system. While descriptive simplicity is normally to be praised, it cannot come at expenses of plausibility and, as plainly stated by Rączaszek-Leonardi (2014: 37): “A viable theory of language cannot possibly be simple.” As a result, although adopting the theoretical and operational machinery of DST can be a heavy and painstaking task, it can help to shed some light on the nature of language as a facet of human cognition, which is not a static entity, but it is in constant flow and its dynamics are tightly coupled to the

physical and socio-cultural environment.

This characterization of the linguistic system leads to the redefinition of the relationship between the social and the psychological dimensions of language: while neither aspect should be neglected, the primacy of the former should be recognized, since language is an institution rooted in social interaction, and as such it cannot exist outside a community of speakers (e.g. Itkonen 2008; Lamm 2014). Language is first of all a means of physical and cognitive coordination. This implies that, against the dominant approaches traditionally adopted in the language sciences, a plausible description and explanation of the linguistic system should consider first of all the natural collectivity that lies at the basis of synergy formation between individuals, and only later the personal cognitive skills which enable the individual to use language competently (e.g. Spurrett and Cowley 2004; Rączaszek-Leonardi and Cowley 2012). The distributed, ecological approach to the study of language described in §2.3 allows to amend this shortcoming which has traditionally informed both the generative and the functional-cognitive frameworks.

This point is crucial in that the adoption of such a perspective encourages the endorsement of a new perspective on the epistemological role of language in the relationship between subject and object. In §2.1, I reported Geeraerts and Cuyckens's (2007) description of the views held by cognitive and generative linguists: while the former see language as the intermediate link between subject and object, the latter focus on language as the object itself of the relationship: cognitive linguists focus on the contribution of language to people's knowledge of the world, whereas generative linguists study people's knowledge of a language and aim to explain language acquisition given a cognitive theory of learning. A more distributed, ecological approach distances itself from both these views. In the present perspective, the relationship between subject, language, and object is different. Language is a social institution which is employed by individuals and groups to *take action* in the world. The organism and its physical and socio-cultural environment constitute a single system and are constantly engaged in an interaction which affects both poles: language takes part in this interaction, and it is also affected by the interplay. From this perspective, language, cognition, society, and ecology are all coupled in a single

system.

As a result, the conception of language as a network-shaped inventory of linguistic units, typical of constructionist, usage-based approaches can be revised as suggested in §2.3. Adopting the present approach, the construction is viewed as a flexible repository of linguistic units (including both grammatical and lexical constructions, abstract schemas and concrete instantiations, and also less productive expressions), connected to other units by formal and meaning links of different levels of strength. According to the changes in the use speakers make of each construction, these links can become stronger or weaker, obsolete units can die out, and new ones can arise. It is important to underline that, from the present perspective, the network does not only include linguistic units, but it also contains cognitive, social, cultural, and affective aspects which are not necessarily captured by a linguistic construction (cf. Hollmann 2013). Also, linguistic units can be linked to external resources, like inscriptions and other material artefacts. Language is here conceived of as contiguous with other cognitive processes in its use of objects of the external world. Therefore, a single system brings together language, mental resources, embodied experience, cultural heritage, social organization, and physical environment, all of which dynamically interact at different time-scales. As a consequence, it is possible to observe a highly complex ecology, which displays a nested structure and whose behavior seems to show a multifractal architecture.

In §3.6, I have argued that an idiomatic construction and the inventory of idioms of a language resemble each other in the mechanisms which drive their evolution, interacting at multiple time-scales and levels of granularity. The simultaneity and the bi-directionality of the interaction, regulated by the principle of causal circularity, defines the similarity between a single idiom and the inventory of idioms. As underlined in the previous chapters, the notion of multifractality, which captures a process in its nonlinear interscalar contingency, can be used to describe the nature and structure of a given phenomenon emphasizing the importance of its evolution in time and the mutual influence between the processes which take place at different time-scales. Moreover, it can help to provide a comprehensive explanation of the emergence of temporary phases in a process. Given these properties, multifractality

may be able to capture the principles of self-organization, causal circularity, nonlinearity, and metastability at different time-scales and levels of granularity altogether, providing a unified framework for the study of human interactivity. Should this possibility be corroborated by an adequate amount of cross-disciplinary empirical evidence, the notion of multifractality may give a push toward the study of language as a manifestation of human activity and interactivity, rather than as an activity of encoding/decoding abstract symbolic representations.

As specified in §3.6, although the interest in the study of the fractal architecture of language is still not widespread, some work on the fractal patterns in language has been carried out especially in the fields of experimental psychology and computational modeling. From this perspective, the present study provides additional support to the points made in those studies, despite differing from them in several key aspects: field of study, data set, and methodology. My study falls within the less empirically-oriented field of linguistic theory. This implies that, while the above-mentioned studies carried out quantitative analyses of objectively measurable data regarding directly observable behavior, my study is characterized by an important qualitative dimension, which is more sensitive to the analyst's interpretation. This is arguably unavoidable when dealing with the analysis of meaning in real-language occurrences, although I did my best to minimize the possible subjective bias, as specified in ch. 4 and ch. 5. The convergence of the results of my studies with the evidence collected in other fields may represent a point of contact between different epistemological and methodological traditions.

The results of my study resonate with those obtained in some studies carried out within different fields of cognitive science (e.g. Van Orden et al. 2010; Wallot and Van Orden 2011), thus seeming to fit in the recent tendency to explore the fractal dimension of cognitive processes (e.g. Kello et al. 2008; Wijnants 2012; Blau et al. 2013). While I am still conscious that the results of a single study only provide limited evidence about the self-similar structure of the construction, they suggest that (at least in principle) it is worth making the effort to further explore fractality in linguistic phenomena from perspectives other than empirical psychology or computational simulations. The study of fractal patterns in language may represent a step toward the

development of an encompassing framework in the study of language, cognition and society in the extended human ecology, with the aim to benefit from the evidence obtained in studies carried out adopting a plurality of mutually informing theoretical and methodological approaches.

### **6.3. Limitations and methodological issues**

In the present section I will list and discuss the main shortcomings of my studies issues of my study.

With regard to methodological issues, the main possible problem of the present study regards the parameters of classifications of the occurrences of idiomatic constructions in real language use, which sometimes may not seem to be strict enough to allow an objective classification of the tokens into one variation pattern rather than another. As already specified in the previous chapter (see §5.2.2), the allocation of an occurrence to a specific pattern rather than another has often been less than straightforward, as the boundaries between the categories are fuzzy rather than clear-cut. This is due to the fact that the real occurrences of a linguistic construction are influenced by the simultaneous effect of several variables, and drawing a dividing line between variation patterns would be most often an arbitrary choice. This issue, which can be seen as directly inherited from Langlotz's (2006a) study of English idioms, is nevertheless related to the inherent complexity of language dynamics. This means that the categorization process is often a compromise between the analyst's need to allocate a given occurrence to a certain variation pattern and the awareness that the establishment of too strict boundaries between these patterns would be an idealization which does not match the flexible, fluid nature of language.

There is in principle a way which would make it possible to strengthen the reliability of the empirical analysis of the data sample: having more than one analyst performing the analysis of the occurrences. Indeed, although I believe that I employed all the possible measures to assess the conformity/divergence of each occurrence from the idiomatic cluster of each idiomatic construction along all the parameters of variation in a maximally defensible way, it is highly unlikely that the same

classification performed by two different people would ever result in a 100% agreement. As a result, having two or more scholars analyzing the occurrences and then discussing their choices (with particular reference to the discrepancies) would lead to an inter-analyst categorization, more genuine and reliable. The ideal condition would be to have analysts of different gender, age, and social background performing the classification of the same data, in order to have a broader picture of how idiomatic constructions and their occurrences are conceived of by members of the community of Italian speakers. Since this condition is hardly possible to put into practice, managing to have any two analysts analyzing the same data would already be a step forward, at least in a single study. Then, should it be possible to also have variation along at least one of the variables mentioned above, that would surely be a further asset.

Another possible issue regards the nature of the data collected and analyzed in the second phase of the present study. While both the quantity and the quality of the data investigated seems reasonable, since I gathered a sufficient amount of tokens of a reasonable number of types from a balanced corpus, there are some aspects of the choice which could be complemented by the selection and analysis of an alternative data set. The choice of a very comprehensive corpus like *itTenTen* is a double-edged sword: on the one hand, it enables the analyst to analyze occurrences of language in use in a multiplicity of contexts and registers, which is surely an asset when the target phenomenon is how the broad community of Italian speakers make use of the idiomatic constructions of their language. On the other hand, such an inclusive corpus includes irrelevant texts. For instance, the inclusion of literary texts written centuries ago forces the analyst to a rather time-consuming manual “filtering” of the data to be analyzed. Indeed, while these texts are part of the cultural heritage of the Italian-speaking community, they are not representative of the use of given constructions in the contemporary Italian language and should be excluded from the data set. The same consideration holds for literary texts or movie scripts translated from other languages into Italian, since often translation require a language of its own, which does not always reflect the tendencies observable in genuine Italian data (see e.g. Freddi and Pavesi 2009). While making use of inclusive corpora like *itTenTen* has many assets, as highlighted in §4.1.3, the risk of selecting non-representative data is higher, thus



requiring a rigorous manual checking on behalf of the analyst (possibly to be performed more than once), and the possibility of human error is always there, especially when the process of selection and analysis is carried out by only one person.

A possible solution to amend this limitation is to complement the analysis with several smaller-scale studies on data collected from less comprehensive corpora, which possibly address specific genres of contemporary Italian. For instance, a study of data collected from the *Corpus e Lessico di Frequenza dell'Italiano Scritto (CoLFiS)* may provide insights on the use of idiomatic constructions in the language of newspapers, while the analysis of data gathered from the *Lessico di Frequenza dell'Italiano Radiofonico (LIR)* may shed some light on the use of idiomatic constructions in Italian radio broadcasting. The results obtained in the present, comprehensive study of Italian idioms could then be compared with the results of these studies focusing on specific genres, in order to draw some conclusions about the correspondences in the tendencies which can be observed in both kinds of studies, the more general one and the more specific ones.

Finally, a couple of methodological issues of the present study regards the facts that the analysis of a large amount of corpus data limits the analyst's possibility to properly take the context of occurrence into account and the absence of time-depth from the data only allows for (as I mentioned at the end of ch. 1). As for the first problem, a detailed analysis of the contextual variables in a large number of tokens would be too painstaking and time-consuming. Consequently, discursive, socio-cultural, and situational factors are often only superficially dealt with. There may be two possible ways to address this problem. A possible solution may be to integrate the present study with a series of other studies, which may focus on a smaller number of idiomatic constructions going back to the source of each selected occurrence, since the *itTenTen* corpus makes the original *url* of each sample of text available. This option could allow the analyst to observe the occurrence of the idiom in context from the very beginning, providing information about genre, discourse context, situation, and sometimes at least some aspects of the identity of the language user(s) and the addressee(s) (e.g. gender, age, occupation, social and/or geographical origin, etc.); moreover, in the case

of interactive platforms (e.g. forums, blogs, social networks), some information about the relationship between the interactants may also be observed. Again, another possible set of studies which may integrate the present one may involve looking for the occurrences of idioms in other corpora, where data are divided into sections according to specific criteria. For this purpose, the *Corpora e Lessici di Italiano Parlato e Scritto* (CLIPS) project may be a helpful research tool. CLIPS was compiled in 2006 and includes 100 hours of spoken Italian, partly transcribed and annotated. The data were collected in 15 major Italian cities and divided into five subcorpora, each corresponding to a specific type of speech: dialogues, read material, phone calls, speech therapy, and radio/tv broadcasting. Each subcorpus was divided into two or more sections according to variables appropriate to the specific type. The adoption of this kind of corpus may allow the analyst to focus on the analysis of idiomatic language in a specific genre and/or social context, taking the relevant variables into consideration in the interpretation of the data, although the retrieval of occurrences of idiomatic language may be more time-consuming.

With regard to the prominence of the synchronic dimension in the empirical part of the present study it is sensible to specify that, while the analysis of synchronic data is useful to take a snapshot of the situation of Italian idioms in a given moment and to illustrate the usefulness of the theoretical tools of DST to interpret the tendencies observable in the use of idioms at a specific moment, it cannot say anything on the actual development of a specific (set of) idiomatic expression(s) over time. For the purpose of the present study, the adoption of a dynamic-systems approach served the purpose of providing a convenient (and relatively novel) way to explore and model synchronic data paying particular attention to the (perhaps a bit trivial, but not to be underestimated) fact that they are the result of diachronic processes, and to propose a theoretical framework able to handle both synchronic and diachronic studies, but it did not illustrate the history of the constructions in use. As such, the present study may represent a sort of point of departure for further studies which could shed more light on the nature of Italian idioms, including diachronic studies which could address the use of Italian idioms in different moments, applying the notions offered by DST to describe the specific evolution of a set of target constructions over time. This kind of

study may be carried out by making use of diachronic corpora; in the case of Italian, a candidate could be the *Corpus Diacronico dell'Italiano Scritto* (DiaCORIS), a corpus of 20 million words including written texts produced between 1861 and 2001. It was designed to be a representative, well-balanced sample of Italian, containing all the main events of recent Italian history such as the National Unification and the Second World War, and covers several distinct genres: press, fiction, essayistic prose, legal-administrative prose, and miscellanea. The time-span of the corpus is divided into four major periods: “After National Unification”, “The Liberal Period”, “Fascism”, and “Post-fascism”, each containing 5 million words. Although this kind of corpus is rather small (at least compared to *itTenTen*), it could enable the analyst to carry out an analysis of a few specific idiomatic expressions, considering the evolution of its use over time, taking all the relevant variables into consideration. The dynamic-systems notions adopted in the previous study could be used to explore the data and model how the use of specific constructions changed over time by making use of a coherent theoretical background.

#### 6.4. Open questions and (possible) future directions

The present study has shown the application of a dynamic-systems approach to provide a description of a specific linguistic phenomenon, namely Italian idioms, at different analytical levels. The principles which lie at the basis of this approach enabled me to account for the tendencies noticed in the analysis of the selected data set: adopting a perspective which balances rigor and flexibility proved adequate to model a phenomenon whose behavior displays trends, but is nonetheless open to different degrees of variation. As argued in §6.2 above, the positive performance of this approach seems to have interesting, far-reaching consequences for the development of a plausible theory of language and cognition. Apart from the theoretical efficiency of dynamic-systems perspectives, this approach allows the analyst to provide explanations to different kinds of phenomena (often investigated employing different types of methodologies) by using the common “language” of self-organization: dynamic-systems principles can be used in both theoretical and

experimental studies, in hard sciences and in the humanities, in longitudinal and in cross-sectional studies, in qualitative and in quantitative analyses, thus favoring the integration between findings in different scientific disciplines.

This would represent an important step forward in the ongoing process of recognition of the necessity for language scientists to combine theoretical claims with empirical considerations, based on the observation of actual language events (see e.g. González-Márquez et al. 2007) and to overcome the view of language as a mainly neural/bodily affair, recognizing its status as a process which emerges and self-organizes the constant interaction between individuals and their physical and socio-cultural surroundings (see e.g. Zlatev 2008; Sinha 2009). However, while there seem to be reasons to be optimistic, it is important to remain realistic. There are several questions which remain open, both with regard to the study of Italian idiomatic constructions, and with the more general issues regarding the nature and the architecture of language and cognition. The adoption of a distributed, ecological perspective centered on a dynamic-systems perspective is called for to address these questions, which I am going to outline in the remainder of this section, where I will also suggest a few possible research venues which may be pursued in the future to address them.

First of all, a question to be answered has to do with the integration of different methodologies to investigate idiomatic constructions as a salient cognitive phenomenon (as defined in §1.2). From the present perspective, it is important that researchers deal with the socio-cognitive status of idioms within and across languages. The study of idiomatic constructions in a specific language can be addressed in at least three different, complementary ways: cross-sectional studies, longitudinal studies, and corpus-informed studies. The first two methods would play a crucial role, as they would make it possible to detect the meaning pole of the idiomatic cluster much more empirically, minimizing the need to rely on dictionary-entries.

Cross-sectional studies would allow the analyst to record the meaning of a specific idiomatic construction for a population of subjects at a specific point in time. Choosing a set of subjects of different gender, age, and social background may be helpful to obtain a balanced result. The cross-sectional study could be repeated after a

reasonable amount of time (e.g. one or two decades), and the results may be compared in order to find the differences between the idiomatic cluster in the two distinct moments. Meanwhile, it would be possible to perform a longitudinal study on a few specific subjects (e.g. testing them every year), in order to observe an intrasubjective change in the idiomatic cluster during shorter spans of time. Performing such a study on more than one subject, chosen according to their gender, age, and social background, may allow to predict (to some extent) the tendencies that are likely to be found in the following cross-sectional study.

The results could be the starting point for corpus-informed studies aimed to detect the level of conformity and divergence from the idiomatic cluster which can be observed in the occurrences of an idiom in actual language events. As pointed out in the previous section, the corpus-informed study may be performed on both data from inclusive corpora which contain data from different genres, or they may target specific genres. The results of all these studies could be compared to each other, in order to observe the similarities and the differences in the tendencies they show.

Adopting the same research methods in the analysis of idiomatic constructions in other languages would allow to make comparisons about the socio-cognitive status of this kind of expressions in different linguistic and cultural settings, noticing similarities and discrepancies. In order to make it possible, there are some criteria which should be followed. First of all, the analysts working on each language should be native or near-native speakers of the language under investigation, and have a strong knowledge of the theoretical background these studies would be based on (i.e. DST, Ecological Psychology, Embodied Cognition, and Cognitive Linguistics). Second, the same procedures should be adopted in the different studies. This implies a strict collaboration between analysts working on the different languages. Third, the interpretation of the data should always take into consideration the distinct socio-cultural backgrounds of the speakers of these languages. If these desiderata were met, then it would be possible to speak about the birth of a common platform for the analysis of idiomatic constructions which adopts a distributed, ecological perspective, based on dynamic-systems principles. Clearly, idiomatic constructions only represent one of the linguistic phenomena which can actually be investigated. Comparing the

results of the analysis of different linguistic constructions (both within and across languages) performed adopting the same approach would also allow to draw some more general conclusions about the tendencies which can be observed in language use with regard to the stability and variation of linguistic units.

A more general question which springs from the present study regards the identification of the way in which the time-scales mentioned throughout the present study are actually integrated in a given communicative event (cf. e.g. Steels 2007). As specified in §2.3.1, the choice of specific linguistic constructions is both determined by (and embedded in) the immediate situated context and inherently grounded in historically established socio-cultural practices. Paraphrasing Fusaroli (2011), a situated occurrence of a linguistic construction takes its specific meaning as a result of the ongoing interaction between conventional usages (which exerts a sort of normative influence on the choice), and co-textual and contextual constraints and expectations.

In a recent case-study on a conflictive interaction in an Italian blog (Torre 2014), I suggested that sign-response cycles in the blogosphere involve a process of amalgamation of three different scales which underlie situated digital communications: an “enchronic” scale, wherein both interlocutors have to align their own thought and typing, producing concrete language materials (i.e. digital inscriptions); a “dialogical” scale, wherein the development of the interaction gives rise to more results; a further scale, which I referred to as “co-optative”, wherein one of the interlocutors comes to the belief that they can obtain a particular result from the interaction, and this belief constrains the further results of the interaction. The latter is a scale of projection, which pinpoints the function of inscriptions as anchor points which serve in setting future targets and taking the appropriate steps in order to reach them. While this explanation intuitively seems to have a point and looks relatively elegant, its adequacy is not to be taken for granted and, in order to shed more light on this topic, more empirical evidence is needed. At least two different kinds of empirical validation are needed. First of all, it would be relevant to repeat the study with a vast amount of data from different kinds of interactions in the blogosphere. Second, the same criteria should be applied to the analysis of different kinds of interactions, both with regard to one-to-one communications and at coarser levels of granularity.

A further, very important point regards the need for a definition of the relationship between different ways to apply dynamic-systems principles to the scientific study of language. It is possible to find several studies which apply a dynamic-systems approach to linguistic phenomena making use of a great deal of the mathematical apparatus of DST (e.g. Van Geert 1991; Elman 1995; Wallot and Van Orden 2011), while there are many which are only very loosely inspired by this framework, often limiting themselves to make use of a few notions like “attractor” and “basin of attraction” (e.g. Cameron and Deignan 2006; Gibbs and Cameron 2008; Gibbs and Colston 2012). In this landscape, my study basically falls within the latter group: here I have only made use of a couple of equations which are used in DST, without delving into the mathematical details, and while I have made use of several dynamic-systems notions, I have basically used them metaphorically to provide a description of the tendencies displayed by the data. While often this kind of approach may adequately provide a description of linguistic phenomenon, it may be beneficial if linguists could get more familiar with calculus and the mathematical apparatus of DST, in order to fully appreciate the resources which this framework makes available for the study of linguistic phenomena (in particular, the possibilities to empirically strengthen their claims).

To conclude the present study, I will outline the ultimate long-term goal which may be set in the agenda for proponents of a dynamic-systems approach to the study of language, which is directly related to the previous point: the need to work in synergy with scholars who adopt a dynamic-systems approach in other fields of cognitive science. As shown in §3.3 and §3.4, the application of dynamic-systems principles to the study of phenomena in several different fields of both linguistics and other branches of cognitive science proved successful. As a result, it would be useful if scholars working in these fields could engage in a more active exchange of ideas. At present the application of dynamic-systems approaches in the study of cognitive and social processes is increasing in popularity, but in a rather fragmented way. It would be important for academics who investigate these phenomena to build a common platform able to coordinate scholars who address different facets of human cognition and make use of distinct types of methodologies.

The adoption of a distributed, ecological approach, which has served as the general background in the present study, may represent a strong theoretical foundation for all scholars interested in the study of human cognition, action, and interaction in a complex ecology, which implies the adoption of a view of agents and environment as coupled in a single system (e.g. Chemero 2009; Cowley 2014b). The principles of self-organization, nonlinearity, causal circularity, and metastability, successfully used in the present study to provide a description and an explanation of the behavior of Italian idiomatic constructions seem to be flexible enough to be applicable to a wide range of cognitive and social phenomena (cf. Haken and Knyazeva 2000). The notion of multifractality, mentioned in the previous chapters and in §6.2 above, seems a good candidate to provide an explanation of the analog structure and behavior of phenomena which are generally seen as the objects of study of different fields, as well as the possibility to observe this behavior taking place at different time-scales and levels of granularity. While more empirical evidence is needed in order to verify if this is indeed the case, the adoption of these principles may represent the first step toward the creation of a unified framework for the study of the complexity of human interactivity, which could represent an alternative to more mainstream paradigms which defend any kind of cognitive centralism.



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