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De-constructing recipes

A constructionist comparative analysis of recipe texts

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Contents

Abstract

Recipes have been defined as goal oriented technical texts which present unique linguistic features and fulfill specific functions. Crucially, recipes describe sets of actions carried out in a specific order in time, happening in specific locations and producing specific resultant objects. The functions we will analyze are the encoding of the temporal sequence of actions, of the resultant location, and of the resultant object.

This work will firstly explore the genre of recipe as text in three different languages, i.e. English, Italian, and Chinese. Subsequently, a thorough linguistic investigation will be carried out on three original recipes selected from international blog entries, through a function-to-form framework informed by the tools of construction grammar.

Chapter 5 will focus on the issues of textual cohesion, reference tracking, and thematic progression in recipe texts.

Chapter 6 will address the comparative analysis of linguistic patterns that fulfill the above mentioned functions.

Through this research we will demonstrate that different languages produce different linguistic patterns and employ different linguistic devices to encode the same meanings. Languages also differ in the type of details that might be left unspecified and understood through inference and contextual knowledge.

We will also demonstrate that, although some languages appear to be more 'obscure' than others, the activation of world knowledge, contextual knowledge, and inferential processes are necessary to obtain full comprehension of any recipe text in any language or format.

前言

准备食物是一项涉及生活、文化、传统、记忆和健康的必不可少的人类活动。食谱是一种允许食品制备程序的储存和复制以及传播和创新的书面语言手段。因此，其值得仔细的语言研究和学术关注。食谱可以定义为面向目标的程序性文本，由无人称动词短语列表组成，这些动词短语说明了对原料执行的一系列操作，直到获得最终结果。最终结果就是食谱描述的菜肴。食谱也是技术文本，其具有广泛的专业词汇和特定语言形式以及广泛发生的上下文定义的指代删除。此外，食谱是功能性文本，因为其在语言上实现了许多特定功能。其关键地描述在特定时间序列、特定位置发生的动作，这些动作实现特定结果而执行的。

本研究将从句法、语义和语用的角度彻底研究三个食谱文本，以阐明与其所完成的功能有关的几个重要方面。构成本研究语料库的三个食谱文本描述南瓜面包卷的过程，并从国际美食博客中自由选择。这三个文本是用英语、意大利语和中文编写的，并且是由用户生成的，因此其呈现出非常口语化的语境，并且未经专业编辑或校对。此外，其是用原始语言编写的，而不是从其他语言翻译过来的。

本研究将解决两个主要问题。第一个问题涉及食谱语篇衔接、推理和主题进展的话语特征。意识到食谱文本的独特技术性质以及共同引用删除的广泛发生，我们的第一个问题涉及食谱文本实现凝聚力并向读者传达意义的方式。特别是，每种语言用来实现文本衔接的衔接手段是什么？各种语言是如何使用衔接手段的？食谱文本是如何根据信息结构和主题进展组织的，以及话语的哪些元素具有最大的交际动力作用？最后，要完全理解食谱文本需要多少语用推理和上下文或世界知识？

第二个问题涉及食谱文本所实现的功能。在比较的跨语言观点中，我们试图确定食谱文本如何表述事件的时间序列、结果位置和结果对象。具体来说，每种语言会产生什么语言模式来表

达上述每个功能，以及如何在句法、语义和语用方面解释它们？本研究的局限性包括语料库中研究的数据量有限，仅由三段文本组成，以及数据的比较分析，需要进一步探索。因此，本研究的目的是收集对该主题的初步观察，并提供一组初步数据。这些数据可以使用更广泛的语料库进行进一步调查。

本研究中的文本分析将通过由 Goldberg（1995，2006）定义的构式语法工具提供的功能-形式框架。至关重要的是，本研究的目的是以比较、跨语言的观点确定和查明食谱文本的主要功能与各种语言形式之间的关系。

该框架包括符号学、认知和功能方法在内的大量理论资源，特别适用于包含句法、语义和语用因素的多层语言分析。此外，该框架特别适用于分析结构不同的语言，如意大利语、英语和汉语，因为它允许对语言模式进行公正和准确的探索。最后，这个框架能够解释不寻常和特殊的语言模式，特别是具有类似博客的用户生成的语言内容，作为我们语料库中的食谱。这项研究包含构式语法的主要观点，即语言是形式-意义配对的集合，语言研究应该基于使用以及语言模式应该通过论证结构分析其表现形式来研究（Goldberg　2006）。此外，本研究强调了结合符号学、功能和认知方法的重要性，以解决各种语言语法之间的结构相似性和差异性，这在本质上反映了人类经验和对世界的理解的感知和概念的差异 (Biq et al. 1996)。

Chapter 1

Introduction

Food preparation is an essential human activity. It concerns aspects of life, culture, tradition, memory, health, and wellbeing. Recipes are the written linguistic means that allow the storing and reproduction, as well as the spreading and innovation of food preparation procedures. Therefore, they deserve careful linguistic study and scholarly attention. Recipes can be defined as goal oriented procedural texts, composed of agent-less lists of verb phrases that illustrate a series of actions carried out on the ingredients until a final result is achieved. The final result being the dish the recipe describes. Recipes are also technical texts, they feature a vast range of specialized vocabulary and specific linguistic forms, as well as a wide occurrence of contextually defined coreferential deletion (Norrick 1983). Moreover, recipes are functional texts, since they linguistically fulfill a number of specific functions. They crucially describe actions happening in a defined temporal sequence, in a specific location, which are carried out in order to achieve a specific result.

This research will thoroughly examine three recipe texts from the syntactic, semantic, and pragmatic point of view, in order to shed light on several important aspects concerning the functions they assolve. The three recipe texts which form the corpus of this research describe the procedure of pumpkin bread rolls and have been freely selected from international food blogs. The three texts are written in English, Italian, and Chinese and are user-generated, therefore they present a very colloquial register and have not been subjected to professional editing or proofreading. Moreover they have been written in the original language, not translated from other languages.

This study will address two main questions that we will illustrate as follows. The first question concerns discourse features of textual cohesion, inference, and thematic progression in recipes. Aware of the unique technical nature of recipes texts and of the wide occurrence of co-referential deletion, our first question concerns the way recipe texts achieve cohesion and convey meaning to the reader in the three languages featuring the corpus of this study. In particular, what are the cohesive devices each language employs to achieve textual cohesion and how does each language employ them? How is a recipe text organized in

terms of information structure and thematic progression, that is, which elements of the discourse carry the most communicative dynamism? And finally how much pragmatic inference and contextual or world knowledge is needed to fully understand recipe texts?

The second question has to do with the functions fulfilled by recipe texts. In a comparative cross-linguistic view, we seek to determine how recipe texts encode the temporal sequence of events, the resultant location, and the resultant object. Specifically, what linguistic patterns does each language produce to express each of the abovementioned functions and how to account for them in syntactic, semantic, and pragmatic terms? Limitations of this research include the quantitative amount of data researched in the corpus, which is only composed of three pieces of text and the comparative analysis of the data, which would need to be explored further. The aim of this study is therefore to gather initial observations on the topic and present a preliminary set of data which could be further investigated employing a wider corpus.

The textual analysis in this study will be carried out through a function to form framework informed by construction grammar tools defined by Goldberg (1995, 2006). Crucially, the aim of this research is to identify and pinpoint the relations between the main functions of recipe texts and the forms each language employs to fulfill them in a comparative, cross-linguistic view.

This framework draws upon a vast array of theoretical resources, including semiotic, cognitive, and functional approaches, and it is particularly suited for a multi-layered linguistic analysis encompassing syntactic, semantic, and pragmatic factors. Moreover, it is especially suited for the analysis of structurally different languages like Italian, English, and Chinese, since it enables an unbiased and accurate exploration of linguistic patterns. Finally, this framework is able to capture and account for unusual and idiosyncratic language patterns which especially feature blog-like user-generated linguistic contents, as the recipes in our corpus.

This research embraces the constructionist ideas that language is a collection of form-meaning pairings, that linguistic investigation should be usage-based, and that linguistic patterns should be inspected analyzing their surface form through argument structure constructions (Goldberg 2006). Moreover, this

study stresses the importance of combining semiotic, functional, and cognitive approaches in order to address the structural similarities and differences between the grammar of languages, which inherently reflect perceptual and conceptual differences in the human experience and understanding of the world (Biq et al. 1996).

CHAPTER 2

THE LANGUAGE OF RECIPES

In the last decades, the interest in food and food writing has dramatically grown all over the media (Floyd 2003 cit in Klenová 2010:7), and recipes are one of the main and most characteristic formats of food writing. Recipes as texts have been the subject of several linguistic studies that have investigated and described their main linguistic features and have defined them as an independent textual genre, worthy of extensive research. In this chapter, we will firstly provide a literature review on the topic of recipes as texts. Secondly, we will attempt to produce a definition of the term 'recipe' and discuss the main syntactic features of this textual genre, namely agentless imperative sentences, instrumental, locative and time adverbial clauses, and finally subject and direct object omission. Subsequently, we will briefly discuss some syntactic changes that occurred in Italian, English, and Chinese recipes throughout the centuries. Lastly, we will address the differences between recipes found in cookbooks and recipes found in food blogs, as the corpus of this research, object of analysis of chapters 5 and 6, was selected from international food blogs.

2.1 Recipes as texts: literature review

In this section, we will review the main literature about recipes as texts in the three languages we will analyze (English, Italian, and Chinese), pointing out the main contributions each study has brought to the field[1]. Subsequently, we will also briefly consider cross-linguistic studies of recipe texts and studies written in languages other than the three constituting the object of this research.

2.1.1 English recipes

English recipes and cookbooks have received quite a lot of scholarly attention starting from the seventies, both for their special linguistic features, which have been studied especially in terms of lexical and discourse

[1] Details about each study will be discussed in section 2.2, "Recipe definitions and main linguistic features".

analysis, and for their sociological and pragmatic importance. One of the first scholars who systematically discussed linguistic features and structure of recipes is Norrick (1983). In his article he covers all linguistic aspects of recipes, focusing on their lexical complexity. In his important article "*Recipes as text: technical language in the kitchen*", Norrick introduces the idea that recipes should be investigated as true technical texts, independently of other types of procedural texts, as they present special features that no other type of text displays (1983: 180). The author also conducted a pragmatic study on 'conversational recipe telling' that occurs in conversations about food, emphasizing their mixed nature of storytelling narrative texts and procedural texts, and their 'social' purpose of establishing group membership and identity (Norrick 2011).

Other linguists, like Massam and Roberge (1989), focused their linguistic analysis specifically on the phenomenon of "null objects" in English recipes, which constitutes one of the most peculiar features of these procedural texts[2]. Massam (1987) also investigated other English constructions which can be found in recipes, although not as commonly as null objects, like middle constructions. As mentioned above, though, recipes caught scholars' attention not only for their lexical and syntactic features. In 1987, Cotter conducted a socio-linguistic analysis of the language of cookbooks, coming to the conclusion that cookbooks are designed specifically for a certain audience-community, that they define and represent. The relation between food and the identity of communities is also the main focus of Lakoff's work (2006).

More recently, Wharton (2010) focused on the pragmatic aspects of recipes in cookbooks. Through a study of speech acts, context, implicature, and inferential activity, he explores the "hidden meanings" of this type of text and argues that a recipe is not just a procedural set of instructions, but a literary text that inspires the readers, "takes them to a different place, and makes life better" (Wharton 2010: 73). In the same year, Klenova (2010) carried out a comprehensive study on lexical, syntactic, and discourse features of recipe texts in three English cookbooks. She discovered that contemporary cookbooks recipes, although being written texts, contain many features typical of oral speech and that their features, especially in lexical terms, change according to the assumed cooking proficiency level of the target audience (Klenova 2010). An aspect that has caught the interest of several scholars, like Fisher (1983), Waxman (2004), and Lakoff (2006)

[2] In section 2.2 and in chapter 4 we will see how this phenomenon occurs inter-linguistically in recipe texts.

among others, is the diachronic change of the language and structure of recipes that, despite being an old literary genre, underwent great changes in modern times.[3]

Finally, most recently, the boosting popularity of internet food blogs has led to an increased interest in this genre. Diemer and Frobenius (2013) have conducted a comprehensive pragmatic analysis on a wide corpus of food blog texts, focusing on the concepts of audience address and interaction and highlighting the importance of blog-related language, in the creation of this new genre.

2.1.2 Italian recipes

The Italian literature on the topic of recipes as texts doesn't seem to be as vast as the English literature, although, in recent times, several publications have contributed to set the stage for a variegated inquiry in food culture and linguistics (Marrone 2015, Sergio 2017). In her study of Italian recipes and food blogs, Bosc (2017: 57) describes recipe texts as "procedural texts in movement"(Testo regolativo in movimento). The author claims that although denoting procedural text features, like text chunking, technical vocabulary, and subjectless sentences, contemporary recipe texts display a great deal of experimentation and innovation. In her 2017 work, Bosc carries out a linguistic analysis of recipes from Italian blogs, focusing on lexical and discourse features. She concludes that blog recipes present a specific linguistic variety of Italian, and that the text is negotiated between the "voice" of the writer and that of the readers, which heavily comment and interact with the writer and among each other.

Among the linguists interested in food linguistics, Marrone and Catricalà have carried out several researches in the field of food semiotics with a focus in lexical varieties (Marrone 2015). However, as Marrone (2015: 30) claims

> The disciplinary fields that have mostly engaged with the communicative genre of cookbooks are especially the historiographic and literary one. (translation mine)

[3] See section 2.3 for an exhaustive discussion on changes occurred in recipes over time.

A good example of diachronic work on Italian recipes is Sergio's (2017) work , which presents a fascinating discussion on the origin of Italian recipes, through their long history, focusing on lexical differences and varieties. See section 2.4 for a discussion on diachronic change of recipe texts.

2.1.3 Chinese recipes

Unfortunately, Chinese sources on the topic of recipes as texts appear to be rather scarce. Despite this tendency, a comprehensive study conducted by Chen (2016) analyzes a corpus of 15 Chinese recipes in order to identify typical linguistic features pertaining to this genre of procedural language. The study covers several levels of linguistic analysis, including the syntactic, lexical, and discourse level, and lays the linguistic foundations for the analysis of Chinese recipe texts. In this study, Chen affirms that procedural discourse is characterized by contingent temporal succession and not by agent orientation. Therefore, Chen points out that a main characteristic of recipes is the use of temporal clauses, in a context where actions need to be clearly sequenced. Another important aspect of recipes is the typical use of textual and visual metadiscourse, as a resource used to organize the text and to enhance readability. According to Chen, instances of metadiscourse used in Chinese recipes are numbered sentences, text chunking, and the presence of pictures, which make different steps of the procedure immediately visually clear, and text 'economy', i.e. the need for recipes to be short and simple. The author claims that these features, universally present in Chinese recipes, are adopted to make the text more 'acceptable' by the Chinese target reader. Analyzing the syntax of Chinese recipes, Chen points out that the two main features are subjectless sentences and 'semantically passive' sentences (*yǔyì bèidòng jù* 语义被动句). Subjectless sentences are characterized by the use of zero anaphora. Below is an example from the corpus of my study. [4](C.9) *(a)* 用南瓜去皮切块蒸熟[...]

yòng nánguā qù pí qiē kuài zhēng shú

[4] See chapter 4.

use pumpkin eliminate skin cut piece steam cook
'Peel the pumpkin, cut it in pieces and steam it [...]'

Semantically passive sentences present the patient in place of the 'subject', followed by the verb and its complement. These patient-initial sentences are a typical feature of Chinese recipes and will be discussed extensively in Chapter 6. Below is an example from the corpus of my study.

(C.10) 然后除黄油外所有材料放入厨师机内。
ránhòu chú huángyóu wài *suǒyǒu cáiliào* *fàng-rù chúshījī nèi*
then except butter out all ingredient put-insert mixer in
'Put all of the ingredients in the mixer, except the butter.'

Analyzing a corpus of 15 recipes, Chen (2016) finds out that out of 412 sentences, 277 are subjectless (67%) and 135 have a subject (33%). Around a third (32.6%) of the sentences presenting a subject are semantically passive, therefore they display the object in place of the subject. Chen claims that subjectless and semantically passive sentences are used in recipes to illustrate the procedure in a more effective and concise way, so that the reader can concentrate on the action s/he needs to carry out. Therefore, the focus of both sentences is on the action. The author also points out that object-initial sentences express the action from the point of view of the patient (usually ingredients), in order for the reader to understand the procedure more clearly (Chen 2016: 99). Besides discourse and syntactic features, Chen also discusses lexical features of recipes. The author points out that the main lexical feature of Chinese recipes is the use of an often highly specialized technical vocabulary in a context of informal colloquial language. This apparent contradiction, according to the author, can be interpreted as an attempt, on the part of the writer, to create an easily readable text that, at the same time, proves to be informative and specialized. To conclude, Chen claims that this study will work as a foundation and highlights the need to further the study of Chinese recipe texts (Chen 2016:99).

As in other countries, food blogs in China and Taiwan are gaining popularity. A recent study carried out by Hsiao (2019) investigates linguistic strategies that food bloggers use to prompt interaction with readers. The

study proves that food bloggers achieve interaction with their audience through a complex interplay of linguistic elements, like speech acts, contextualization cues, and reported speech.

2.1.4 Other languages and cross-linguistic studies on recipe text

A comprehensive study carried out by Rita Brdar-Szabó and Mario Brdar in 2009 investigates the linguistic realization of direct speech acts for instructions in recipes, offering a vast cross-linguistic perspective on the topic. The study compares recipes found in a famous Hungarian cookbook, translated in three Romance languages, three Germanic languages, seven Slavic languages, and Hungarian. The authors find out that, although imperative is the most common verbal mood chosen to express instructions, there is a fair degree of variation in several languages, especially Slavic languages and Hungarian: several languages use other constructions, in combination or instead of imperative (Brdar-Szabó and Brdar 2009). Brdar-Szabó suggests that, cross-linguistically, the most frequent construction found in recipes is second person imperative, the second most frequent is infinitive, and the third is first person plural of the present indicative. Less frequent but still present constructions are impersonal reflexives, third person plural indicatives, first person plural imperatives and first person singular present indicatives. The study also shows that Romance and Germanic languages seem to conceptualize instructions almost exclusively using impersonal constructions, like imperative and infinitive, while Slavic languages (except Polish) and Hungarian tend to use more first singular and first plural person present indicatives, making the instruction sound more cooperative, solidal, and inclusive (Brdar-Szabó and Brdar 2009: 117). According to the authors, there is a "deeper motivation" behind this choice of some languages to avoid imperative and infinitive. The authors claim that this deeper motivation might be connected to the difference in cultural models[5], specifically the cultural model for "help". Therefore, in languages like Hungarian, the underlying cultural model for help can be described as "collectivist", and instructions are preferably expressed in a cooperative way, while in Germanic and

[5] Cultural models have been defined as "presupposed, taken-for-granted models of the world that are widely shared [...]by the members of a society and that play an enormous role in their understanding of that world and behavior in it." (Holland and Quinn in Brdar-Szabó and Brdar 2009:125)

Romance languages the prevalent cultural model for help is “individualist”, and instructions are often expressed in an impersonal way. Generally, it seems that a complex interplay of cognitive, structural, and pragmatic factors defines the way languages make use of different constructions (Brdar-Szabó and Brdar 2009: 127). The data are analyzed against the background of the speech-act scenario model, and then connected to cultural models, to provide a “deeper motivation” for the cross-linguistic difference between linguistic forms[6] (Rita Brdar-Szabó and Brdar 2009).

For what concerns the study of recipe texts in other languages, another interesting work is a syntactic and semantic study on cookbooks verb patterns in French (Bramati 2017). Besides recipes in European languages, it seems that Japanese recipe texts have received quite a lot of attention in the literature. Several studies have compared recipes written in Japanese with other languages from a socio-cultural perspective (Strauss, Chang, & Matsumoto 2018). Others have analyzed the specific linguistic features of Japanese recipes (Aoyama 1987, Moriya 1993). Among the linguistic studies, Akiyama (2002) seems to be the most comprehensive, considering lexical, structural and some grammatical features of a few sample recipes. Finally, a recent study by Kaneyasu and Kuhara (2020) have investigated structural regularity and variations in Japanese recipes, comparing cookbook recipes, news reports recipes, online commercial recipes written by professionals, and online user generated recipes. The authors analyzed a number of linguistic features of each sub-register and connected them to a series of situational characteristics, to point out their functional importance. The study indicates that the four types of recipes share common features, pertaining to the genre of cooking instructions, but differ in some aspects, like lexical variation and interactive language. According to the authors, differences in textual features are motivated by several factors, including the relationship between writer and reader and the different production circumstances, more or less restricted by publishing and editing needs. Since the corpus of this research is composed of user-generated food blog entries[7], in section 2.4 we will discuss the main features of online food blogs and the main syntactic difference with cookbook recipes.

[6] More details about this study can be found in section 2.2.
[7] See chapter 4.

To sum up, from the literature review emerges that English recipe texts have been studied extensively, from a number of different perspectives, although the main focus has been on their sociological, pragmatic, and lexical features. Italian recipes, on the other hand, have been mainly studied in historical and cultural terms, with a focus on semiotics and technical vocabulary. The literature on Chinese recipes is rather scarce, and recipe texts have mainly been analyzed in cultural and historical terms. The study of Chen (2016) has laid the basis for further inquiry into the textual genre. Among studies in other languages, Japanese recipe texts have been studied quite extensively, with a focus on lexical and pragmatic aspects. Comparative and cross-linguistic studies, specifically about recipe texts, are quite rare and have mainly focused on pragmatic aspects. In the next section we will examine in depth the main features that recipe texts in English, Italian, and Chinese seem to share. We will consider the literature about English, Italian and Chinese recipes, to provide a meticulous linguistic description, which will help set the foundation for the subsequent analysis to be conducted in chapters 5 and 6.

2.2 Recipe definition and main linguistic features of English, Italian and Chinese recipes

As a well-known element of our daily life experience, recipes appear rather easy to define and describe, but actually they are complex technical texts, with unique linguistic features and a rich history. For the purpose of this research, it is useful to determine and delimit the elements that make recipes a specific text type. According to the *Cambridge Online Dictionary,* a recipe is “a set of instructions telling you how to prepare and cook food, including a list of what food is needed for this”[8]. The *Oxford Encyclopedia of food and drinks in America* defines recipes as “the ideas and the instructions for handling foods and preparing particular dishes''(Waxman 2004:347). As in dictionary definitions, several scholars who have defined the term “recipe” have focused their attention on the instructional and operational nature of such texts. Hayakawa states that recipes are “the best everyday example of operational definitions: if you follow a recipe you produce the food it defines” (Hayakawa (1972:58), cit in Norrick 1983:173). Gläser describes them as “a set

[8] https://dictionary.cambridge.org/dictionary/english/recipe

of goal oriented behavioral rules in the general class of immediately directive technical texts ”(Gläser (1979), cit. in Norrick 1983:173). Therefore, the interest in studying recipes texts lies in their special purpose, namely reaching a “goal”, and in their language “not entirely within the boundaries of the general or core language” (Norrick 1983: 173). According to Norrick, recipes are characterized by a bipartite structure composed of a schedule of items and a schedule of instructions. Instructions are presented in the form of verb-initial imperative sentences (Norrick 1983: 176).

Tim Wharton writes that recipes present features that are typical of the instructional register, namely agency neutral and time neutral imperative sentences, that do not feature an overt subject, as the verb is evidently directed at the reader, whoever s/he is (Wharton 2010: 68). Warton notices that although being usually presented in the imperative form, as directive speech acts, in which the writer requests the reader to do something, in the context of recipes, the imperative loses its directive force. Therefore, imperatives in recipes are not orders or requests, but simply the description of a stage of the process (Wharton 2010: 68). Italian and Chinese recipes also mainly feature verb-initial agentless sentences (Bosc 2017: 57;Chen 2016: 98). Below are three example sentences from the corpus of this study that show agentless verb-initial sentences:

Chinese: (C.9)(a) 用南瓜去皮切块蒸熟[...]
yòng nánguā qù pí qiē kuài zhēng shú
use pumpkin eliminate skin cut pieces steam cook
‘Peel the pumpkin, cut it in pieces and steam it [...]’

Italian: (I.9)*Preparate la purea di zucca.*
Prepare the puree of pumpkin
‘Prepare the pumpkin puree.’

English: (E.3) *Cut the pumpkins in half, top to bottom.*

However, as mentioned in section 2.1.3, Chinese recipes also often present a characteristic type of sentence, referred to as 'semantically passive sentences' by Chen (2016), that features the patient in preverbal position, followed by the verb and its complement.

(C.10) 然后除黄油外所有材料放入厨师机内。

ránhòu	*chú*	*huángyóu*	*wài*	*suǒyǒu cáiliào*	*fàng-rù*	*chúshījī*	*nèi*
then	except	butter	out	all ingredient	put-insert	mixer	in

'Put all of the ingredients in the mixer, except the butter.'

According to Cotter (1997), the imperative form creates cohesion among the discourse elements and provides the text with a clear and evident sequence of actions, sometimes made even more evident by numbered sentences. This view is shared by Chen (2016), who claims that through the use of textual and visual metadiscourse, like numbered sentences or chunking, Chinese recipes attain the expected readability (Chen 2016:98). According to Cotter, when a non-imperative clause or sentence occurs, it acts as a descriptive or evaluative marker. Descriptive clauses are usually found at the beginning or at the end of the imperative clauses and enrich them with some useful information. Descriptive clauses are generally either locative, such as *on a floured surface, roll out the dough*, which give information about the place where the action occurs, or instrumental, such as *with a pastry blender,* specifying the instruments to use to carry out that action. Cotter also mentions that recipes usually do not display temporal markers (Cotter 1997: 57), although some studies show that temporal clauses, in particular featuring the words *until* or *then*, exhibit the highest number of occurrences out of all the adverbial clauses in recipes: "Temporal clauses, as indicators of durations and time specifications, are an indispensable part of every recipe" (Klenová 2010, see also Diemer 2013:69). This concept is confirmed by Chen (2016), who highlights the importance of time adverbials to provide rhythm and sequential organization to the text (Chen 2016: 96).

Another important feature of recipes is the phenomenon called "null objects", which is so common in recipes and so uncommon in other types of text that in the extensive literature on the topic has been directly associated with this genre (Massam et al.1989 among others). Null objects in English only appear in

imperative sentences that do not present overt subjects, like recipes or other sets of instructions, and their reference appears to be contextually defined (Massam et al.1989), as in the following example

> Take the cake mix, 1 cup of water and 3 eggs. Mix__well and beat__for 5 minutes. (Massam et al.1989: 135)

Chinese and Italian, among other languages (Garzone 2017:43), also make extensive use of direct object deletion in recipe texts. As already mentioned, this feature appears to be strictly related to the textual genre of recipes. Below are three example sentences that display null object occurrence:

(C.9)(b) 然后Ø入榨汁机榨成汁，
ránhòu Ørù zhàzhījī zhà chéng zhī
then Øinsert juicer press become juice
'then put in the juicer'

(I.11)*Fate raffreddare Ø e con un cucchiaio scavare via la polpa dalla buccia.*
Let cool Ø and with a spoon excavate away the pulp of-the skin
'Let cool and with a spoon excavate the pulp off the skin'

(E.9) *Blend Ø until well-pureed, pulsing to break up any stubborn bits.*

To sum up, recipes are technical procedural texts which have the special purpose of reaching a goal, namely, combining distinct ingredients to create a final result, the dish the recipe describes. After having reviewed the literature about recipes as texts[9], we can safely assume that syntactically they present common features in most languages, including English, Italian, and Chinese. These features are subject-less

[9] See Klenová (2010), Diemer (2013), Wharton (2010), Cotter (1997), among others, for English; Bosc (2017), Sergio (2017), Marrone (2015), among others, for Italian;Chen (2016), Hsiao (2019) for Chinese; Kaneyasu (2020) for Japanese; Brdar-Szabó and Brdar (2009) for a cross-linguistic study including Germanic, Romance, Slavic languages and Hungarian.

verb initial imperative sentences[10], temporal, locative, and instrumental clauses, and direct object deletion. Chinese recipes also feature object-initial imperative sentences. In chapter 4, we will see how the three recipe texts display and make use of these particular features.

Table1: Recipe texts syntactic features and examples (from the English recipe in the corpus).

Syntactic features	**Example in English recipe**
Subject-less imperative sentence	(E.3) *Cut the pumpkins in half, top to bottom.*
Temporal clause	(E.6)*Bake at 350 for 60-90 minutes*
Locative clause	(E.5)*When they're all clean, put them face down on a baking sheet*
Instrumental clause	(E.34) *[...] line your baking sheet with parchment paper or a silicone baking mat.*
Direct object deletion	(E.71) *Let sit five minutes, until foamy*
Syntactic feature	**Example in Chinese recipe (from the corpus)**
Semantically passive sentence	(C. 10) 然后除黄油外所有材料放入厨师机内。 *ránhòu chú huángyóu wài suǒyǒu cáiliào* then except butter out all ingredient *fàng-rù chúshījī nèi* put-insert mixer in 'Put all of the ingredients in the mixer, except the butter.'

[10] With the exception of some Slavic languages and Hungarian (see Brdar-Szabó et al. 2009).

2.3 A diachronic look at recipe texts

Food is culture and food description and preparation is one of the most popular topics of discussion worldwide. Apparently, in ancient times recipes were mainly narrated in oral form, therefore originally cookbooks were simply transcriptions of oral narratives, descriptions of cultural knowledge that might have been lost otherwise (Marrone 2015: 32). Italy has a really ancient tradition of cookbooks, the most ancient ever discovered in Italy is *Liber de coquina,* dating back to the XIII century and written in Latin. According to Sergio (2017), the first cookbooks were quite concise and unspecific in their descriptions, as they were conceived for proficient readers, like cooks and servants, but starting from the 1300 they became more and more precise and procedural, and already in the second half of the XV century we see the appearance of cookbooks containing recipes in form of procedural texts (Sergio 2017: 196-197). However, one of the most important ancient cookbooks in Italy, who then set the standard for the genre, was created in Ferrara by Cristoforo Messi Sbugo, who was paying service to one of the most extravagant and powerful renaissance courts, the Estensi (Sergio 2017: 197). In his famous cookbook, he finely describes the luxurious banquets of the court and includes detailed recipes, featuring a big variety of specific lexical items, some measurements and a procedural description of actions. As Sergio maintains, the necessity to include more details and specific instructions shows that the Estensi court, in their banquets, boasted a great variety of dishes, both traditional and "foreign", that needed to be recorded and explained (Sergio 2017: 197). In her comparative study between a XV century and contemporary English beef stew recipes, Arendholz et al. (2013) interestingly note that, although largely undetailed, the old recipes presents a number of typical syntactic structures, like direct object deletion and subject-less imperative sentences, that demonstrate that the procedural format of recipes has ancient roots.

Generally, in Europe it seems that the first "modern" cookbooks, containing recipes organized in a modern bipartite structure date back to the XIX century, when the genre finally became well established (Garzone 2017: 44). In his article about recipes in America, Waxman (2004) introduces the idea that the format or recipes has changed a great deal since the first handwritten texts were introduced in the country from

European migrants. A seventeenth century Dutch cookbook retains the informal, permissive features of a handwritten recipe:

> To make meatballs. Take veal with veal-fat chopped, add it to mace, nutmeg, salt, pepper, knead it together, then you can make meatballs from it as large or as small as you please also all of it is fried in the pan as one large meatball. Many take a few of the outside peels thinly pared of oranges or lemons. Cut very fine, it gives a very good smell and flavor.
>
> (Waxman 2004: 347)

Nonetheless, as Waxman points out, this permissive touch is just apparent, since the lack of measurement and details is based on the assumption that the reader was a knowledgeable cook, who already mastered ingredients and techniques (Waxman 2004: 347). Syntactically, we can notice that the text above lacks or makes little use of several of the features we discussed earlier, as typical of recipes like null objects, locative, instrumental, and temporal clauses. Waxman assumes that recipes at the time were considered more a reminder of ingredients for busy servants or proficient housewives, than a proper instructional text. It was not until the 1850 that some changes in the syntax of recipe texts started to appear, as more and more of the household helpers started to seek job opportunities outside the family, the first cooking schools appeared and always more settlers from foreign countries brought their culinary tradition with them to America. In the twentieth century, more women started to find work outside the family and the interest for foreign food started to grow, so details of food preparation stopped being self-apparent and a great deal of precision was required to prepare any dish (Waxman 2004: 348-349). A 1924 recipe exhibits almost the same syntactic structure and precision as current ones:

> Corn Chowder
>
> (list of ingredients)[…]

> Fry onion in fat, add flour, stirring often, so that the onion may not burn; add two cups water and potatoes. Cook until the potatoes are soft; add corn and milk, and cook for five minutes. Season with salt and pepper, and serve. (Waxman 2004: 349)

As we have seen for European and American cookbooks, ancient Chinese cookbooks also display a lack of detailed information about time, location, instrument, and measurements in recipes. Yuan Mei's *Recipes from the Garden of Contentment* (Yuan 1792), a famous XVIII century Chinese cookbook, presents a wide variety of recipes, described in a clearly sequential and procedural fashion, although still lacking bipartite structure and details. According to Ferguson (1994 in Klenová 2010: 87), language and structure of recipes took definite form in the mid XIX century, following mass literacy and the publication of popular cookbooks. We can then surmise that the modern procedural nature of recipe texts, their syntactic structure, and richness of details lies in the necessity for the recipe to be understandable and precise, so that even an inexperienced or "foreign" reader can obtain the desired result. It also seems that contemporary recipes are a result of social and historical processes that modified their original structure, making them true technical texts.

2.4 Food blogs and cookbooks

Although, as we have seen, cookbooks have been an established genre in literary publishing for centuries, in the last decades there has been a boom in recipe production. Recipes haven't been confined to books, they have started to appear in other media, including television, magazines, cinema, and the internet (Floyd 2003 in Klenová 2010: 7). In her study on food blogs, Hsiao (2019:492) affirms that as an emerging genre of discourse on food, they have received less attention in the literature than traditional cookbooks. Given that the corpus of this study will be composed of food blogs entries, in this section we will discuss some of their linguistic features, contrasting them to the typical structures found in cookbooks recipes. In their comparative analysis of recipes in different media Kaneyasu and Kuhara (2020) claims the importance of studying user-generated recipe texts on food blogs:

> Before the internet era, most publicly available recipes were written by professionals (created by cooking experts, and written, revised, and edited by publishers) in the form of cookbooks. Since the late 1990s, more and more commercial recipes have been published on the internet; moreover, online recipes are increasingly produced by amateur writers. The trend justifies and calls for inclusion of online and user-generated varieties in a register study of recipes. Online commercial and user-generated recipes share a major purpose of providing cooking instructions with the cookbook recipes, but they differ in other aspects such as specific mediums and type of writers (Kaneyasu and Kuhara 2020: 2).

The authors of this intra-linguistic comparative study discover that online user-generated contents differ greatly from edited and published recipes in cookbooks, so that they can be referred to as different sub-registers. While professional cookbooks display a uniformity in grammatical and textual features, user-generated recipes exhibit a great variation in text structure, due to the lack of editorial control. They also show a number of linguistic features related to direct interaction between the blogger and the reader. Defining the situational characteristics of recipes in cookbooks and user-generated food blogs, the authors point out the difference in communicative purpose of the two media. While the main purpose of the cookbook is to provide simple and understandable cooking instructions, the food blogger also strives to create and gather an online community s/he can directly relate to (Kaneyasu and Kuhara 2020).

In their 2013 study on English food blogs, Diemer et al. (2013: 54) define them a "written asynchronous genre of computer mediated communication, that revolves around the preparation, consumption and evaluation of food in all varieties and contexts". As a subgenre of blogs, they present their characteristic design and technical features, like pictures, videos and hyperlinks. These elements together with (often printable) recipes are embedded in a surrounding text, which narrates events related to food or food preparation, so food blogs often combine elements of printed cookbooks, diary-like texts and web specific elements (Diemer et al.2013: 54-55). For this reason they have been defined as a "hybrid genre" (Herring's et al. 2004 in Diemer et al.2013: 55).

Diemer et al. (2013: 62) notice that the texts of recipes you may find in blogs often display frequent descriptive and evaluative elements that contribute to the informal character of the text, making it more personal and more interactive. Hence, the use of modifying adjectives and adverbs like *some*, *about*, *little*, *large* make the recipe less precise, reduces its prescriptive strength and facilitates the measuring process, thus making the cooking more enjoyable. Evaluative statements marked by emotional terms like *good*, *fresh*, *favorite*, *pretty* create an emotional context, which although not necessary for the preparation of the dish, seem to facilitate emotive connection and interaction with the reader (Diemer et al.2013: 64).

> Here's what I do. Take some beautiful Delicata squash, cut each one straight in half, and scoop out off the fuzzy bits in the middle and discard (Diemer et al.2013: 64).

According to Diemer at al. (2013: 64), recipes printed in contemporary cookbooks also contain some evaluative elements, but it seems food blogs make greater use of them. According to Lackoff (2006), compared to authors of recipes online, cookbooks writers tend to assume a less intimate relationship with the reader, positioning themselves as knowledgeable authoritative specialists and the reader as amateur. This difference in attitude and mood generally causes food blogs recipes to display a much more varied syntactic structure. In addition to the patterns commonly found in cookbooks recipes, food blogs feature a higher degree of structural variation, influenced mainly by elements such as audience address and imitation of spoken discourse, considered key features of the blog genre. Therefore, in contrast to the cookbook authors, who are mostly "reserved", food bloggers frequently refer to themselves, or ask questions to the reader, making large use of the personal pronouns *I* and *you*, instead of agentless imperative sentences (Diemer at al. 2013: 69):

> presumably, the chef believes that the first person form will make viewers feel more included, or involved, and less as if they are being ordered to do something (Wharton 2010:68).

As we saw in section 2.1, according to Brdar-Szabó and Brdar (2009: 125), the use of different grammatical tenses to conceptualize instructions is due to a different degree of cooperation between the hearer and the

writer . We might therefore suppose that the structural difference the author points out at an interlinguistic level can also be spotted at an intralinguistic level if the media changes, i.e. cookbooks and food blogs. Therefore, in an attempt to create an intimate emotive bond with their reader, food bloggers might modify the classical imperative procedural form of the recipe and substitute it with a more colloquial, intimate text.[11]

As we have seen, food blogs display several colloquial linguistic features, among which is imitation of spoken discourse. To do that, bloggers might construct minor sentences or insert full stops between elements of a sentence, thus resembling a casual spoken sentence. Other interaction features are the presence of discourse markers, hedges and interjections (Diemer et al.2013: 69-71).

In her study of Italian food blogs, Franca Bosc (2017: 58) affirms that they can be considered a "low-constraint discourse type text" *testo con un discorso poco vincolante*, as the author feels free to express her/himself and provides the reader with possibilities of dialogue and comment. Therefore, the stiffness of the prescriptive text is lost in this communicative exchange between the writer and the reader, and new linguistic solutions are adopted (Prada in Bosc 2017:58). Bosc notices that typical textual features of Italian food blogs are clausal juxtaposition, cleft-sentences and colloquial elements. She also notices the common use of personal pronouns and possessive adjectives. According to Bosc, these elements contribute to the informal and colloquial touch of food blog texts and reflect the "high-democraticity" of online language. Ultimately, Bosc affirms food blogs could be considered a "mixed" type of text, i.e. an intermediate form between written and oral language (Bosc 2017: 61-62).

These interactive, colloquial features are the focus of Hsiao (2019) in her study of Taiwanese food blogs. She points out that food bloggers use specific linguistic strategies to prompt and develop interaction with their readers. She points out three main linguistic strategies: narrative orientations[12], direct and indirect

[11] Some bloggers might describe the recipe in colloquial terms in the main text and at the same time provide a printable version of it written in the traditional "cookbook-like"linguistic form. See the English recipe we have selected in *https://www.somewhatsimple.com/homemade-pumpkin-puree/*
and its description in section 3.3.1.

[12] Narrative orientations "portray settings and participants of an event"(Labov and Waletzky 1967, cit. in Hsiao 2019: 497).

speech acts[13], like inviting promising, evaluating and refuting, and finally direct reported speech. Narrative orientations present recipes as a piece of personal information, establishing an emotive bond with the reader that comments on the writer's story (Hsiao 2019: 498). As already mentioned, food bloggers make big use of personal pronouns to tell their stories and less use of subjectless imperative forms. Moreover, as Hsiao explains, "instead of using imperatives, writers of popular food blogs tend to gravitate toward speech acts, to demonstrate professional knowledge and to show politeness toward the reader"(Hsiao 2019: 499). The excerpt below displays the direct speech act of inviting. We can notice the use of personal pronouns *we,* inclusive of the writer and the final interjection particle *Yo*, used with an encouraging tone.

Excerpt 2: 'Japanese Sakura Shrimp Soft Rice Cracker' (posted on How Living)

1'Different from regular crispy rice crackers, there is another type of rice cracker which is soft and suitable for

2 seniors and young kids. This time we will use a muffin machine to make soft crackers that have a crunchy outside and are soft inside YO! '(Hsiao 2019: 499)

On the other hand, indirect speech acts, as evaluating and refuting, are used by writers to compare and contrast different ingredients, speculate, hypothesize, and generalize, thus "the readers are not given directions; they are invited to consider writers' recommendations"(Hsiao 2019: 502).

Summing up, it seems that recipes in food blogs differ from cookbooks recipes in several ways: they contain more descriptive and evaluative elements, less subject-less imperative sentences, and more use of personal pronouns for self-reference, audience address, cooperation and solidarity, more questions and more elements resembling oral speech. It also seems that food blogs around the world display very similar linguistic features and an informal, colloquial tone. As we will see in chapter 4, the three recipes we have chosen, as original user-generated blog recipes, will feature both blog-like conversational features and traditional cookbooks-like procedural features. In chapter 5 and 6, we will notice how these textual characteristics affect several aspects we will analyze, like textual cohesion.

[13] According to Austin, a direct speech act is "an expression that does things via language in a particular context" (Austin in Hsiao 2019: 499). An indirect speech act is "an expression that performs a perlocutionary act via another speech act often employed to denote politeness"(Searle 1976, cit. in Hsiao 2019: 502).

2.5 The language of recipes: a final note

To conclude, it appears that the syntactic and grammar features of a recipe text may depend on several aspects: the media it appears on, its readership, its context, and the time it was written. However, as several scholars point out (Garzone 2017: 16; Diemer et al.2013: 68), the recipe as a textual genre has proven to retain its features of “goal oriented” accuracy and precision, although “embedded” in a blog narrative text. In the next chapters we will introduce the theoretical cognitive-functional approach that shaped the function to form framework of analysis we will adopt for this research.

CHAPTER 3

METHODOLOGICAL ASSUMPTIONS AND CORPUS

In this chapter, we will define the methodological assumptions this research is based on, including a discussion of the framework we will adopt. We will also present and describe the recipes that will be the corpus of this study. This information will lay the theoretical basis and set the stage for the subsequent analysis conducted in chapter 5 and 6.

As noted in the overview in section 2.1, the existing literature has shed light on many important linguistic aspects of recipe texts, like their sociological and cultural implications, their pragmatic aspects, and their special lexical features. Nonetheless, a comprehensive research that investigates the relations between the functional-pragmatic aspects of recipes and their syntactic structures is still missing. Another aspect that apparently hasn't been covered by the existing literature is the study of characteristic cohesion devices and co-referential deletion in recipe texts. In fact, most of the studies have analyzed a single linguistic aspect, like direct object deletion. Moreover, most of the studies obtained their data from monolingual corpora and carried out their research focusing only on one language. For these reasons, and in line with our research questions, we propose to carry out a comparative, cross-linguistic research on text cohesion devices and on the relationship between forms and functions in recipe texts in English, Italian, and Chinese.

3.1 Theoretical approach and framework

In this study we will adopt a function to form framework of analysis to multi-language recipe texts, which draws upon the cognitive and the functional theoretical approaches and makes use of construction grammar models for the textual analysis.[14]

[14] See chapter 4 for a detailed discussion about the theoretical approaches that inform the framework of this study.

As we will discuss in detail in the next chapter, the cognitive-functional approach sees human cognition and perception of the world as the basic source of language production, which is then uttered to fulfill specific functions, i.e. communicate ideas. The precepts that regulate communication reflect the grammar of human languages.

> It (The cognitive-functional approach) argues that language structure, instead of being arbitrary as UG (universal grammar) claims, is cognition-based and function-driven. Moreover, different conceptualizations of the physical world by native speakers can provide an explanation for the different structures of the languages they speak (Jiang 2009).

Crucially, this approach connects general human characteristics like cognition, perception and functional communication with language production and grammar. Therefore, it allows us to appreciate and understand structural differences in languages as different conceptualisations of the world. For these reasons, it appears to be the best theoretical resource to frame this multi-layered and multi-lingual research.

The function-to-form framework we have adopted for this study naturally draws from the cognitive-functional approach, and it is informed by the tools of constructionist grammar theorized by Goldberg (1995, 2006). This framework allows for a multi-layered linguistic analysis, which encompasses syntactic, semantic, pragmatic, and discourse features (Fried 2015), thus permitting a thorough textual investigation.

The reasons why this framework is particularly suited for this type of research are multiple. Firstly, it is prone to cross-linguistic inquiry of typologically and structurally different languages such as English, Italian, and Chinese. As argued by linguists focusing on non-European languages like Chinese (Tai 1989: 190), each language needs to be analyzed through unbiased principles that can help linguists describe its real functional, pragmatic, and semantic nature. As mentioned in section 3.1.2, Haiman (1980) argues that the limits of formalist models of language analysis appeared when non Indo-European languages were taken

into account. According to Tai (1989), Chinese grammar has long been investigated through a formalist framework of analysis that imposed European linguistic categories, such as parts of speech, on non-European languages, thereby distorting their grammar principles. On the other hand, a cognitive-functional approach can appreciate differences in languages as different conceptualizations of reality, allowing a neutral, unbiased and culturally-dependent analysis of all natural languages. According to Zhan et al. (2020: 308), the constructionist framework to language analysis has thrived among Chinese linguists and brought great contribution to the study of Chinese linguistics. Recently, Zhuo Jing-Schmidt (2017), among many other eminent scholars, has adopted a usage-based constructionist framework for the study of Chinese linguistics and called for the adoption of this approach for an improvement in Chinese language pedagogy. Moreover, this framework has recently been adopted for linguistic studies in Italian morphology and syntax (Masini et al. 2018).

The following example sentences from the corpus have been annotated following the model of the *caused-motion construction* (Agent (X) causes Patient (Y) to move to Goal (Z)), introduced by Goldberg (1995). This notation system allows to compare linearization patterns easily and effectively and accounts for the relations between the syntactic (form) and the semantic level (function). In order to adapt the notation to the agentless sentences typical of recipes, it has been modified as follows: Cause Patient (Y) to move to Goal (Z)[15]

(E.49) *[…]place them on your prepared baking sheet.*

Cause Patient (Y) to move to Goal (Z)

V(place) + Obj + DP

(I.10) (c) *o metter-le in forno*[…]
or put-them in oven
'or put them in the oven[…]

Cause Patient (Y) to move to Goal (Z)

[15] See chapter 6 for more details on the Caused-motion and the Resultative constructions.

V(put) + Obj + DP

(C.10) 然后除黄油外所有材料放入厨师机内。

ránhòu chú huángyóu wài suǒyǒu cáiliào fàng-rù chúshījī nèi

then except butter out all ingredient put-insert mixer in

'Then put all of the ingredients in the mixer, except the butter.'

Cause Patient (Y) to move to Goal (Z)

Obj + V(put-insert) + DP

Comparing the three examples we can notice that, although the function these three sentences fulfill is the same (i.e expressing the idea that an agent moves a patient along a path to a final location), their word order (form) is different.

The second reason we chose this framework is that it is able to account for a vast variety of linguistic patterns, considered unusual or idiosyncratic, that might not be explainable in compositional terms (Goldberg 1995). An example from this research is the caused-motion construction instantiated by verbs which do not lexically encode motion, as the verb *place* or *put*.

(E.8)[…] *and then scoop the meat out into a blender.*

Cause Patient (Y) to move to Goal (Z)

V(scoop out) + Obj + DP

In this case, the caused-motion meaning the sentence conveys is provided by the construction and not by the verb on its own. Goldberg (1995) argues that word knowledge and pragmatic principles can explain the

validity of such patterns.[16] As mentioned in chapter 2, user-generated blog recipes contain a blend of technical cookbook-like language and colloquial language; therefore, this framework is particularly suited to appreciate this linguistic variety, which might include uncommon or idiosyncratic expressions.

Finally, this framework is consistent with Fluid Construction Grammar natural language processing (Steels 2012b), thus making this study suitable for application in several fields, such as computational linguistics. In this respect, this study will provide a contribution to the international project for the development of Human centered AI, Muhai project.[17]

3.1.1 Notation and terminology

In chapter 6, we will attempt to pinpoint and compare the syntactic forms and linguistic devices that each language employs to fulfill each of the functions we are going to analyze.[18] Constructionist terminology (Goldberg 1995, 2006) will be adopted to analyze linguistic structures encoding resultant object and location according to the following specification:

1. For each specific function one or more phrasal patterns (constructions) will be defined in each language.
2. In order to carry out the constructional analysis, two kinds of notation will be employed.

1. Semantic-syntactic structure scheme

This scheme, created by Goldberg (1995), is useful to determine what kind of semantic and syntactic structure the construction displays, and the connections between the semantic and syntactic levels. Moreover, it provides an account of the general meaning of the construction.

Example:

[16] See section 6.2.1.
[17] https://muhai.org/
[18] See section 3.2.

Caused motion construction: X causes Y to move Z

Sem	CAUSE-MOVE 〈 cause	path	theme 〉	
	↓	↓	↓	↓
Syn	V	SUBJ(X)	OBLpp(Z)	OBJ(Y)

The argument structure roles (Sem) displayed in the upper level are connected to the grammatical relations (Syn) in the lower level. This notation system is particularly suited for our analysis as it visually represents the relations between form and function.

2. Linear grammatical phrasal pattern

Throughout the textual analysis, each construction will be then annotated through a linear phrasal pattern which will specify grammatical relations and word order in each language.

Example:

Caused Motion construction (English)

(E.25) *Place the pumpkins face down on a baking sheet*

Cause (Y patient) to move to Goal (Z)

V (place) + OBJ + RP

3.2 Functions analyzed in this work

As discussed in section 2.2, recipe texts present typical textual features that make them true technical texts. Given these special features, in this study we will pinpoint and analyze a number of functions that

recipes try to fulfill. Subsequently, for each language, we will define which grammar forms contribute to encode these meanings. To do so, we will make use of construction grammar tools for linguistic analysis.

The specific aspects we will discuss are:

1. Features of textual cohesion and inferential processes
2. The encoding of temporal sequence of actions
3. The encoding of "resultant location"
4. The encoding of "resultant object"

In what follows, we will account for each of these functions relating them to the special features of recipe texts we have discussed.

3.2.1 Textual cohesion and thematic progression in recipe texts

As mentioned in chapter 2, recipe texts are traditionally and cross-linguistically characterized by subject and direct object deletion, thereby being rich in zero anaphora occurrences. This lack of reference, although being contextually defined, makes it necessary for the reader to activate a number of inferential processes. In Chapter 5, we will see how different languages achieve textual cohesion, although making large use of deletion and zero anaphora. We will also see how the textual features of food blogs colloquial recipe discussions affect textual cohesion. Discourse aspects of thematic progression, information structure, and topicality will also be considered in a cross-linguistic perspective.

3.2.2 Encoding temporal sequence of actions

As mentioned in chapter 2, one of the most characteristic features of recipe texts from ancient times is their procedural format. Essentially, recipes are a sequence of actions that have to be carried out in a specific order in time thereby displaying the kind of time sequence diagrammatic iconicity Haiman (1980)

discusses. Although the sequence of subject-less imperative sentences can be considered the main device expressing time sequence, we will see that it is not the only tool languages employ to fulfill this function. For example, sentences from the corpus show how coordination conjunctions, time adverbials, and verbal agreement contribute to create a sense of sequentiality in English and Italian.

(E.29) *Let the pumpkin cool and then scoop the meat out into a blender*

(E.43) *Once the dough comes together and is slightly sticky to the touch, you'll know it's ready.*

(I.16) *Quando sarà incordato aggiungete a filo l' olio di soia*
when be3SN.FUT blended add at thread the oil of soy
'When the dough will be blended, add some soy oil slowly'

(I.10) (b) *tagliar-la a grosse fette e cuocer-le in una pentola con un dito d' acqua*
cut-it in big slices and cook-them in a pan with a finger of water
'cut it in large slices and cook them in pan with a little water'

Chinese, on the other hand, iconically lists verb phrases often introduced by time adverbials, but does not make use of verbal agreement or coordinating conjunctions to express sequentiality.

(C.9) (a) 南瓜泥，用南瓜去皮切块蒸熟，
nánguā ní yòng nánguā qù pí qiē kuài zhēng shú,
pumpkin puree TOP use pumpkin eliminate skin cut piece steam cook
'As for the pumpkin puree, peel the pumpkin, cut it in pieces and steam it'

3.2.3 Encoding resultant location

As mentioned in chapter 2, differently to ancient recipes that did not include many details about the location where the action should take place, locative clauses represent one of the most important features of contemporary recipes. Therefore, we will discuss how each language conceptualizes the physical location where ingredients should be placed or where the action should be carried out. Below are listed some examples of locative clauses in the three languages.

(E.5) *When they're all clean, put them face down on a baking sheet* [...]

(I.10)(c) *o metter-le in forno (avvolta in un pezzo di stagnola) per 30 minuti.*
or put-them in oven wrapped in a piece of tinfoil for 30 minutes
'or put them in the oven (wrapped in a piece of tinfoil) for 30 minutes.'

(C.9)(b) 然后入榨汁机榨成汁[...]
ránhòu rù zhàzhījī zhà-chéng zhī
then insert juicer press-become juice
' then put it in the juicer and juice it [...]'

The model we will adopt to discuss the occurrence of locative clauses cross-linguistically is the *caused-motion construction* defined by Goldberg (1995), which in English presents the following semantic and syntactic structure:

Agent (X) causes Patient (Y) to move to Goal (Z)

Sbj + V + Obj + DP

The location which is considered the final point of the path of movement or *'goal'* will be designated as '*resultant location',* and the phrase that syntactically introduces it will be referred to as *'directional phrase'* (DP). Since recipes are characterized by agentless imperative sentences, the caused-motion construction will be adapted and annotated as follows:

Cause Patient (Y) to move to Goal (Z)

V + Obj + DP

Below are listed three example sentences from the corpus annotated through the *caused-motion* constructionist notation. As discussed in the previous section, this notation system allows us to compare word order patterns easily and effectively.

(E.49) [...]*place them on your prepared baking sheet.*

Cause Patient (Y) to move to Goal (Z)

V(place) + Obj + DP

(I.10) (c) *o metter-le in forno* [...]
or put-them in oven
'or put them in the oven[...]'

Cause Patient (Y) to move to Goal (Z)

V(put) + Obj + DP

(C.10) 然后除黄油外所有材料放入厨师机内。
ránhòu chú huángyóu wài suǒyǒu cáiliào fàng rù chúshījī nèi
then except butter out all ingredient put insert mixer in.
'Then put all of the ingredients in the mixer, except the butter.'

Cause Patient (Y) to move to Goal (Z)

Obj + V(put-insert) + DP

3.2.4 Encoding the resultant object

As 'goal oriented' technical-descriptive texts, recipes mainly describe the modification or combination of ingredients to create new objects, which may be combined again until the final object, i.e. the final dish, has been created. We can therefore assume that the creation of a resultant object is to be considered the most important function recipe texts have always had. Below are listed some examples of sentences encoding the creation of a new object from the corpus.

(E.48) *Roll each piece out <u>into a circle</u> and cut each circle <u>into twelve wedges.</u>*

(I.10)(b)*tagliar-la a grosse fette*[...]
cut-it in big slices '

'cut it in large slices[...]'

(C.15) 然后 **Ø**整理成面团[...]

ránhòu **Ø** *zhěnglǐ-chéng* *miàn tuán*
then **Ø** arrange-become dough
'Then knead the mixture until it becomes dough[...]'

Ingredients are transformed through direct actions carried out by the subject, like cutting, rolling or kneading, or through 'indirect' processes like raising, cooling, or baking, which modify their shape, taste, and other inner properties. In any case, the result of these actions or processes is the creation of a new object. Therefore, we will refer to '*resultant object*'' as something that is created as a result of one or a series of actions or processes carried out in the recipes of the corpus.

The model employed to account for the occurrence of resultant object will be the resultative construction, identified by Goldberg (1995), according to the following semantic and syntactic patterns.

(X agent)causes (Y patient) to become (Z Result-goal)

Sbj + V + Obj + RP

The phrase expressing the resultant object will be referred to as '*resultative phrase*' (RP). As mentioned previously, for our analysis of recipe texts, the semantic and syntactic patterns will be adapted as follows:

Cause (Y patient) to become (Z Result-goal)

V + Obj + RP

Below is an example of three sentences from the corpus annotated through the resultative construction pattern.

(E.48) *Roll each piece out into a circle* [...]

Cause (Y patient) to become (Z Result-goal)

V(roll) + Obj + RP

(I.10)(b)*tagliar-la a grosse fette*[...]
cut-it in big slices '
'cut it in large slices[...]'

Causes (Y patient) to become (Z Result-goal)

V(cut) + Obj + RP

(C.15) 然后 **Ø**整理成面团[...]

ránhòu **Ø** *zhěnglǐ-chéng miàn tuán*
then **Ø** arrange-become dough
'Then knead the mixture until it becomes dough[...]'

Cause (Y patient) to become (Z Result-goal)

Obj + V1(arrange)V2(become) + RP

3.3 The corpus of this research

As already mentioned, we selected the three recipes that form the corpus of this research from international food blogs, whose incommensurable variety of available texts allowed me to find almost identical original recipes written in different languages. Therefore, the three recipes we will present in this section and analyze in chapters 5 and 6 describe the preparation of the same dish, pumpkin bread rolls, in three different languages: English, Mandarin Chinese, and Italian. We decided to select recipes from food blogs and avoid adopting translated versions of the same recipe, because translations may be linguistically biased and reflect the structure of the original text. Instead, we wanted to be able to analyze and compare authentic texts in their original version. The three recipes have been compiled by blog users and have not been edited by professionals, therefore they might contain some grammar or lexical imprecisions. As discussed in section 2.4, the texts display a number of colloquial features. We decided to study user-generated recipes instead of professionally written recipes because, as Kaneyasu and Kuhara (2020) affirm, nowadays a huge amount of contents are freely produced by amateurs online; this trend has not

been studied extensively and calls for more attention. Moreover, as pointed out in section 2.4, food blog texts display an interesting variety in textual forms that cookbooks and professionally compiled recipes do not show. We chose recipes featuring pumpkin bread rolls because the complexity and variety of steps and actions described in the recipe texts (including steaming, mashing, mixing, kneading, etc.) increase the chances of finding and comparing interesting structures in different languages.

The recipes in Chinese and Italian have been glossed in English according to the conventional Leipzig glossing rules[19] and numbered according to a code made up of a combination of a letter and a number. Therefore, entries (C.1) to (C.39) correspond to the Chinese recipe, (I.1) to (I.25) to the Italian recipe, and (E.1) to (E.85) to the English recipe. Normally, each entry corresponds to a full sentence, although some long sentences have been segmented in different clauses and signaled by letters, as e.g.(I.23)(a), (I.23)(b).

3.3.1 The English Recipe: Pumpkin dinner rolls

Recipe n.1[20] is written in English, it was selected from "Somewhat simple"[21] an American blog that gathers a few bloggers posting articles about food, daily life or travel. The recipe webpage is quite varied and resourceful and it displays all of the typical blog elements discussed by Diemer (2013), Bosc (2017), and Hsiao (2019). Below the title and a big picture, we find a long paragraph that presents and describes the food, followed by a blog-like discussion about the procedure and a few pictures showing the cooking steps. Below, we see a section discussing tips and storage and a section including more recipes featuring pumpkin. Scrolling below, we finally find the printable recipe complete with bipartite structure of ingredients and procedure. At the bottom and on the right side of the page, we find more similar recipes and the readers' comments. As already mentioned, the three recipes will feature the preparation of pumpkin bread rolls. However, the American recipe doesn't include the instructions for the preparation of the pumpkin puree in

[19] https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf
[20] https://www.somewhatsimple.com/pumpkin-roll-recipe/
See Appendix 1 for the glossed version
[21] https://www.somewhatsimple.com/

the rolls recipe, as the others do. This might be due to the fact that American recipes featuring pumpkin puree usually refer to canned puree, while in Italy and China canned puree is usually not available for sale.

Therefore, in order to be able to compare the three texts, we have decided to include the homemade pumpkin puree recipe[22] from the same author on the top (sentences (E.1) to (E.30)), with the rolls recipe following (sentences (E.31) to (E.85)). As mentioned above, the bread rolls recipe features a colloquial discussion about the cooking process at the top and the printable recipe at the bottom.[23] The pumpkin puree recipe is structured in the same way.[24] Evidently, the conversational discussion of both the puree and the rolls recipes features typical linguistic elements of blogs, as audience address. The printable instructional recipes display more features of traditional cookbooks, like imperative sentences and null objects. Below is an example of the same sentence expressed in a conversational blog-like fashion (E.37) and in a procedural cookbook-like fashion (E.71).

(E.37) *Allow the yeast to sit for about 5 minutes until it's foamy.*

(E.71) *Let sit five minutes, until foamy.*

For the purpose of this research and being aware of their linguistic difference, we have decided to take into consideration both versions as parts of the original text. In chapter 5, we will see how the different linguistic features will affect textual aspects like cohesion and inferential processes.

3.3.2 The Italian Recipe: Brioches alla zucca con pasta madre 'sourdough pumpkin croissants'

[22] https://www.somewhatsimple.com/homemade-pumpkin-puree/

[23] For the pumpkin puree, sentences (E.2) to (E.15) feature the blog-like discussion, and (E.21) to (E.29) correspond to the printable cookbook-like recipe.

[24] For the pumpkin bread rolls, sentences (E.32) to (E.62) feature the blog-like discussion, and (E.69) to (E.84) correspond to the printable cookbook-like recipe.

Recipe n.2[25] is written in Italian, it was selected from "Pan di pane"[26] (Bread of bread), a small independent blog specialized in different varieties of bread and baking with sourdough. The recipe webpage is typical of food blogs. At the top it displays a short narrative paragraph describing and celebrating the dish, followed by a big picture. Below is a detailed list of ingredients discussing some possible variations and a main text describing the procedure, enriched by some smaller pictures, displaying the final result. On the right side, the page presents some links to the social network pages and to some other recipes of the blogger. At the bottom, the page hosts comments and discussions. The recipe has been glossed in English and ordered in 25 entries. Sentences (I.1) to (I.7) include the description of the dish and the list of ingredients. The text describing the procedures is quite conversational and, as in typical food blogs, it displays some use of personal pronouns for self-reference, which creates audience involvement and interactions. Moreover, it is rich in descriptive and evaluative elements. Despite showing blog-like features, the procedure text also displays all of the traditional recipe elements, like subject-less imperative sentences and direct object deletion. Differently to the English and Chinese recipes, the Italian one doesn't display numbered sentences or chunking in its original texts.

3.3.3 The Chinese Recipe: *Nánguā yē róng miànbāo* 南瓜椰蓉面包 'Pumpkin coconut shreds bread rolls'

Recipe n.3[27] is written in Mandarin Chinese, it was selected from the blog platform "Meishi China"[28] (Good food China), where different authors post their recipes, upload food pictures and write about food. The recipe webpage is very simply and clearly organized. Below the title and a big picture, we find the list of ingredients, a very short narrative passage and the numbered steps of the dish preparation, each enriched with a picture. At the bottom of the page, we find the section "small tricks", which provides suggestions

[25] http://pandipane.blogspot.com/2013/11/brioches-alla-zucca-con-pasta-madre.html
See Appendix 1 for the glossed version.
[26] http://pandipane.blogspot.com/
[27] https://home.meishichina.com/recipe-566207.html
See Appendix 1 for the glossed version.
[28] https://www.meishichina.com/

about the cooking process, and other information like the name of the blogger and useful utensils. At the bottom, the page presents comments from the readers. The recipe, which has been glossed in English and provided with *pinyin*[29] and English translation, has been subdivided into 39 entries. Entries (C.1) to (C.8) present the title, list of ingredients, and the short narrative which briefly introduces the dish and promotes it. At the end of the recipe, part of sentence (C.32) and sentence (C.33) retrieve the initial narrative, to strengthen its point, while sentences (C.34) to (C.40) present small tricks and final information. At a general linguistic level, the recipe presents all of the main characters of traditional recipes we have covered in chapter 2. Moreover, it displays a few features typical of food blogs, like narratives orientations, interjections, self-reference, imitation of spoken discourse and direct audience address.

[29] The official romanization system for Mandarin Chinese.

CHAPTER 4

THEORETICAL APPROACH AND FRAMEWORK OF ANALYSIS

The purpose of this research is to provide a multi-language function to form mapping of recipe texts. In order to do so we will embrace a functional-cognitive theoretical approach which will be practically realized through the constructionist grammar framework. In this chapter we will firstly discuss the theoretical basis that shapes the framework adopted for this research, secondly we will provide reasons for the adoption of this framework for this research.

4. 1 Cognitive-functional theoretical approach

In the Eighties and Nineties of the last century, several linguists, among which Haiman (1980-1985) Lakoff (1987), Langaker (1987) and Givón (1995), have developed and pursued the Whorf's thesis (1940) that views language as an inherently symbolic system that depicts reality.

> To understand what grammar is and how and why it comes to be this way, one must refer to the natural parameters that shape language and grammar: cognition and communication, the brain and language processing, social interaction and culture, change and variation, acquisition and evolution" (Givón, 1995: XV preface).

In the next sections we will discuss three of the main conceptual resources that have shaped this theoretical approach: Haiman's semiotic approach to iconicity, Langaker's cognitive approach, and Hopper and Thompson's functional approach. Subsequently we will also discuss Goldberg's construction grammar, that draws from the cognitive-functional tradition and will constitute the main tool for the text analysis in this work.

4.1.1 The semiotic approach to iconicity

The semiotic approach investigates processes of iconicity of the linguistic sign and attempts a scientific review of the Whorf hypothesis of symbolism and relativism of language. In doing so, this approach brings forward the idea that human language is neither innate nor universal, but inherently symbolic and related to the human experience in the physical world.

Drawing upon Peirce's taxonomy of signs, Haiman focuses on 'diagrammatic iconicity', i.e 'systematic arrangements of signs, none of which resemble its referent, but whose relationship to other signs reflect the relationship of their referents' (1980: 515). As claimed by linguists, although linguistic signs in isolation (except onomatopoeic words) appear arbitrary and unmotivated, the combination of these signs in the grammar of natural languages displays almost universal aspects of diagrammatic iconicity.

Haiman (1985) proposes an analogy between language and symbolic diagrams like musical scores or maps. While maps depict geographical features and musical scores depict melodies, language depicts different construals of reality. Haiman distinguishes between two types of diagrammatic iconicity: *'isomorphism'* and '*motivation*'. The term '*isomorphism*' refers to the universally acknowledged one-to-one correspondence between linguistic sign and meaning, which recognises each linguistic sign as a symbol of an element of reality, expressed through a phonological or graphic interface. The principle of isomorphism implies two different aspects:

1. A difference in linguistic form (syntax) implies a difference in meaning (semantic) or in contextual use (pragmatic).
2. Conversely, a difference in meaning or use leads to a difference in form.

The term 'motivation' refers to the idea that a grammatical pattern, similarly to an onomatopoeic word, might reflect concepts or events happening in the physical reality. For example, it was noted that often the order of events encoded in speech parallels the order of events happening in reality (Greenberg 1966 in Haiman 1980:528). According to Haiman, encoding of sequence of events is in fact the clearest example of iconic motivation. The linearity of the linguistic signs is therefore exploited by speakers to express the

meaning of time sequence. Another aspect displaying this kind of iconicity is markedness, since categories that are marked phonologically are also marked semantically (1980: 516).

Although being universally present, examples of iconic motivation in grammar appear in different forms cross-linguistically and might correlate to some extent with world view (1980: 534). Haiman argues therefore that, not only languages reflect the structure of thought, but thought in its turn might to some extent reflect the structure of reality (1980: 537). Lakoff (1987) provides a precise account of the concept of motivation in grammar arguing that a given linguistic unit is motivated (and easier to learn) to the degree it inherits properties or features from other units already known. The new linguistic unit is therefore fitted in a perfectly systematized network that represents our whole knowledge of language. A discussion on psychological aspects of language organization that involve iconic principles will be provided in section 3.2, whilst discussing Goldberg's constructionist approach. Moreover, as discussed in chapter 5 and 6, several iconic principles account for some of the main linguistic features of recipe texts.

4.1.2 The functional approach

In their 1984 article on lexical categories in universal grammar, Hopper and Thompson argue that 'parts of speech' categories, like nouns and verbs, that are recognised as universal, cannot be solely determined by morphological or syntactic aspects and that purely semantic or 'notional' approaches are not fully consistent. This problem became apparent and the universality of categories was questioned when, in the West, a wider number of non-Indo-European languages were taken into account. The authors thus argue that the notional, semantic side of categories, should be integrated with the pragmatic function of language in use (1984: 703-704). The notion of discourse, or words in context, becomes essential for linguistic inquiry. Analyzing them in context, words that are aprioristically considered nouns or verbs do not always display typical semantic features of these categories, making a purely morphological or syntactic based categorization insufficient. This implies that linguistic forms should in principle be considered as lacking categoriality completely, unless discourse functions force verbhood or nounhood on them. Therefore the

realization of a form as an entity or as an action is imposed principally by discourse, not necessarily by its morphology. Although some forms might feature a predisposition for nounhood or verbhood, they still can be seen as 'acategorial' outside their discourse context, thus their classification becomes irrelevant. Moreover, the less a linguistic form is required by discourse to express an event or to define an entity, the less it will be marked as a true member of the categories which universally carry these functions, whatever form that is. This leads to confirmation of the type of diagrammatic iconicity that Haiman argues for, i.e. language systems reflect reality as perceived by human thought.

> This type of iconicity between language form and function is as strong an indication of the perceptual basis of the cognitive strategies underlying language system as we can expect to find (Hopper and Thompson 1984:747).

The functional approach thus focuses on the function of each linguistic form and structure, independently of its formal morphological or syntactic specification, and argues that the relationship between language and the mind can only be investigated if languages are considered in their natural context of use (1984: 748). Talmy Givón, one of the main exponents of functionalism, in the foreword of his functional based introduction to English grammar (1993), argues that grammar is everybody's business and that firstly and most importantly must make sense. Syntax cannot be accounted for unless it is contextualized in communication. Grammar is truly composed of a set of rules, that must be followed by speakers and must be described by linguists, but these rules are not universal and arbitrary, they are related to the conceptualization of people's experience in the world and their function is to provide the speaker with an economical, concise and straightforward tool to deliver and comprehend complex clusters of meaning.

4.1.3 The cognitive approach

Cognitive linguistics is to be considered a new paradigm in the study of language that naturally grew from the imposing amount of research in cognitive science and functionalism starting from the seventies of the nineteenth century. This approach draws upon the functional tradition and entails a new view of the

relation between language and the human mind, challenging previous formal approaches. Nonetheless, it shares with formalism the objective of providing a precise and detailed structural description of language, which, Langacker (2008) argues, functionalist approaches can hardly provide. Cognitive grammar fully acknowledges that language is grounded in social interaction, but it focuses on the conceptualization of language as a symbolic system. In fact, the main concept that cognitive linguists support is that language is an integrated part of human cognition, and it operates on the basis and in strict interaction with other cognitive domains. In fact, cognitive linguistics is mainly concerned with the way the human mind makes sense of the world and studies language in relation with other mental and bodily faculties, image-schemas, categorization, memory, perception, emotions, inferencing, etc. (Dirven 2008:17). According to Dirven (2008:18), five main strands of research were carried out in the CL paradigm: a gestalt-psychology-based strand, a phenomenology-based strand, a cognitive discourse, a cognitive sociolinguistics and a cognitive psycholinguistic strands. Among these lines of research, for the purpose of this work, we will discuss the gestalt-psychology based studies firstly explored by Talmy and worked out in great detail by Langaker. In the next section we will also focus on a different specification of the gestalt principle that is realized in construction grammar by Goldberg.

Talmy's (1975) major breakthrough lies in having connected the highly abstract system of grammar to the gestalt principles of perception, among which the principle of ground/figure alignment. Talmy argued that speakers perceive and talk about reality distinguishing between a background, which is described using subordinate clauses, and a foreground, which is expressed through main clauses. Grammar is then considered as a structuring and scaffolding system and the lexicon, content words, as bricks to be inserted in the grammatical structure, in order to express coherent and complex meanings (Talmy in Dirven 2005:19). Langacker's (1987, 2008) unique contribution lies in having worked out in great detail linguistic gestalt psychology aspects, approached by Talmy, and having systematized them into a new grammar model: cognitive grammar(Dirven 2008: 18). Langacker (1987) expands the gestalt principle into a more systematic view of grammar, in which all linguistic units are conceptual in nature. Speakers describe events and situations making different choices. They must determine the scope of their description, that is which

aspects need to be included and the perspective to adopt. Through these perceptual choices, speakers make use of linguistic patterns that allow them to distinguish between a grounding context and the figure acting in it. In these linguistic patterns, lexicon and grammar, in the form of entities and relations, are compositionally joined, to create meaning the hearer will process and understand. In his guiding methodological assumptions, Langacker refuses contemporary linguistic theories that see language as being organized into separate components. Conversely, cognitive grammar argues that lexicon, morphology, and syntax form a continuum of symbolic units that speakers combine to encode their thoughts into a linear linguistic pattern. For this reason it is impossible to consider grammar isolated from meaning and segmented into separate parts (Langacker 1987: 35). Grammar incorporates semantics, to the extent that elements of grammatical description are not abstract primitives but form-meaning pairings (Langaker 2008). Those aspects of language, like idiomatic or figurative expressions, that were previously considered idiosyncratic and peripheral, as not fitting either into the category of lexicon or the category of syntax, are finally considered central to language analysis. Langacker sees those expressions as an important part of a speaker's linguistic knowledge, since the grammar of a natural language is a set of linguistic units, being them conventional or idiomatic. Cognitive grammar therefore considers language as a continuous system and makes no distinctions between figurative and literal language, idiomatic and conventional expressions, or between lexical and grammatical structure (Langacker 1987).

In his article concerning the relations between cognitive and functional linguistics, Nuyts (2008) points out that although being both usage based and being both concerned with cognition, these two resources focus on slightly different aspects of communication. Functional linguistics is more concerned with the pragmatic aspect of how language works in communication, the speaker’s knowledge and his intentions. On the other hand cognitive linguistics focuses more on the relation between conceptualization, semantics and language forms. According to the author, in order to carry out a comprehensive inquiry of human language, these two important theoretical and practical resources must be complemented in a coherent way.

4.2 Goldberg's construction grammar

Adele Goldberg (1995, 2006) contributes a great deal to the functional-cognitive tradition, proposing the breakthrough idea that basic sentences and other linguistic units are instances of constructions, learned form-meaning pairs that should be recognized as independent theoretical entities, as they carry meaning independently of the lexical elements they occur with. In this section we will first discuss the view of human language the constructionist approach proposes and then we will dig into the definition of constructions and the relation between constructions and meaning. We will then conclude with a discussion on how the constructionist function-to-form framework will benefit the present work of textual analysis.

4.2.1 Constructionist approach and human language

According to Goldberg, human language consists of a systematic collection of pairings of form-function that are learned through natural linguistic input in context. Language knowledge, like general knowledge, forms a motivated and integrated network of information that humans employ to make sense of the world around them and communicate effectively (2006: 227-8). Basic phrasal constructions are shown to be associated with dynamic scenes pertaining to basic human experience, understood through experiential gestalt perception (1995: 5). Constructions are stored in memory, comprehended and employed through semantic and pragmatic abilities to help guide interpretation and comprehension. Constructions appear in a great variety in any given language. This variety enables speakers to package information in economical and contextually accurate ways. Therefore, the constructionist approach emphasizes the individual functions constructions serve (2006: 229).

Goldberg points out the existence of different levels of linguistic organization, a construction level and a lexical level. However, meaning is not created by the sum of the two layers, but by the semantic relations between the parts, in a gestalt-like perception system, where the whole is more than the sum of its parts. Goldberg defines her approach as 'constructionist', evoking both the notion of 'construction' and the fact that knowledge of grammar is constructed on the basis of the input together with general cognitive,

pragmatic, and processing constraints. (Goldberg 2006). The Constructionist approach proposes a usage-based analysis of language that considers each surface pattern on its own terms, avoiding alternations, transformations and derivations, focusing instead on the surface argument structure of each pattern (2006:19).

4.2.2 A definition of construction

Goldberg (2006) defines constructions as "stored pairings of form and function, including partially or fully filled words, idioms, and general linguistic patterns". However, not all linguistic patterns can be recognised as constructions, only if some aspect of the pattern's form or function is not strictly predictable from its component parts or from other constructions recognised to exist. Moreover, patterns are stored as constructions even if they are fully predictable, if they occur with sufficient frequency (Goldberg 2006:5).

Table2: Example of constructions (Goldberg 2008: 94)

Word	e.g., *tentacle, gangster, the*
Word (partially filled)	e.g., *post-N, V-ing*
Complex word	e.g., *textbook, drive-in*
Idiom (filled)	e.g., *like a bat out of hell*
Idiom (partially filled)	e.g., *believe* ⟨one's⟩ *ears/eyes*
Covariational	The Xer the Yer
Conditional	(e.g., *The more you watch the less you know*)
Ditransitive	Subj V Obj1 Obj2
	(e.g., *She gave him a kiss; He fixed her some fish tacos.*)
Passive	Subj aux VPpp (PP_{by})
	(e.g., *The cell phone tower was struck by lightening.*)

4.2.3 Relevant psychological principles of language organization

According to Goldberg (1995: 67), the network of constructions that forms our knowledge of language is not an unstructured set. It is possible to trace a number of psychological principles that help us address the problem of organizing linguistic knowledge in light of cognitive, functional and iconic principles.

I. The principle of Maximized Motivation: If constructions are related syntactically, then they could be related also semantically. Constructions are iconically motivated to the degree they are related semantically.

II. The principle of No Synonymy: If two constructions are syntactically distinct, then they must be semantically or pragmatically distinct. Therefore if two constructions are semantically synonymous, then they must not be pragmatically synonymous. If two constructions are syntactically distinct and pragmatically synonymous, then they must not be semantically synonymous.

III. The principle of maximized expressive power: The inventory of constructions humans might employ is maximized for pragmatic, communicative purposes.

IV. The principle of Maximized Economy: Given principle III, the repertoire of constructions is minimized as much as possible for reasons of memory and convenience. Therefore principle III and principle IV constrain each other.

According to Goldberg (1995:68) the theory of diagrammatic iconicity of language proposed by Haiman[30] theoretically supports these principles, both through the concept of Isomorphism (Principles II, III, and IV) and through the concept of Motivation (Principle I).

4.2.4 Constructions and meaning: argument structure

As can be noted, both words and phrases can be stored as constructions, since they have basic features in common: both are learned as pairings of form and function, both may be partially or completely filled or compositional. It is this compositional and creative feature of language that Goldberg mainly focuses on. For example, in the sentence below the word *buzz*, which is normally stored as a noun, is used creatively as a verb. Readers understand *buzzed* as a verb since it is embedded in a verbal construction and they work out the general meaning of the sentence through a comprehension of the argument structure of the verb.

[30] See section 3.1.1.

(1) *The fly buzzed into the room.* (Goldberg 2006:73)

Therefore, Goldberg points out that subjects rely entirely on constructional meaning when nouns are used as verbs in novel ways and the constructional pattern, i.e. argument structure, provides the key to comprehension. Even when words are used in familiar ways, like the verb *to cook* in most of the examples below (Goldberg 2008 : 95), it is the argument structure, and not only the lexical compositional meaning of the verb, that provides the reader with a link between surface form and semantic interpretation.

(2) *a. The chicken cooked all night.* (intransitive inchoative)

b. Pat cooked the steaks. (transitive)

c. Pat cooked the steaks well-done. (resultative)

d. Pat cooks. (deprofiled object)

e. Pat cooked Chris some dinner. (ditransitive)

f. Pat cooked her way into the Illinois State bake-off. (*way* construction)

Therefore, although the general meaning of *cook* remains the same, i.e. preparing food using a heat source, each sentence above can be interpreted differently: a) something changing its state; b) someone acting on something; c) someone causing something to change state; d) someone acting generically; e) someone acting on something that someone else will receive; f) Someone moving metaphorically somewhere despite difficulties. Therefore, we can understand aspects of the final interpretation involving caused motion, caused result or transfer uniquely through the skeletal constructional pattern. This means constructions are capable of contributing arguments (Goldberg 1995:10).

Table 3: Form to meaning associations (Goldberg et al. 2004: 291)

Form	Meaning	Construction label
1. Subj V $Obl_{path/loc}$	X moves $Y_{path/loc}$	Intransitive motion (VL)
Example: *The fly buzzed into the room.*		
2. Subj V Obj $Obl_{path/loc}$	X causes Y to move $Z_{path/loc}$	Caused motion (VOL)
Example: *Pat sneezed the foam off the cappuccino.*		
4. Subj V Obj Obj2	X causes Y to receive Z	Ditransitive (VOO)
Example: *She faxed him a letter.*		
3. Subj V Obj RP	X causes Y to become Z_{state}	Resultative (VOR)
Example: *She kissed him unconscious.*		

The author develops the idea of constructional meaning by introducing the concept of low-cue validity verbs. She points out that verbs like *get*, which are semantically less obvious than verbs like *cook*, for example, have low-cue validity as predictors of sentence meaning. Therefore, when a pattern includes *get*, or other low-cue validity verbs, the construction acts as a cue to sentence meaning more than the verb, and the semantic contribution of the construction is essential to codification (Goldberg 2008: 106). This leads to the idea that some grammar patterns may carry more meaning than some lexical items. The overall interpretation of the sentence is obtained integrating the constructional meaning with the meaning of the various arguments and the lexical meaning of the verb, in light of the pragmatic context the sentence is uttered (2006:43).

4.2.5 Learning generalizations

It appears that subjects easily learn correlations between form and meaning, at the level of argument structure, through frequent input and general categorization strategies. This demonstrates that grammar is not innate and that repeated input is the essential factor that leads to learning generalizations. An important factor that contributes to learning and using argument structure constructions is 'constructional priming'. Researchers have proven that constructions are commonly primed and structural priming occurs also in natural and unmonitored speech, since it is a form of unconscious and long lasting implicit learning. Goldberg argues that repetition mechanisms are not only typical of language learning, but of any kind of

learning. As a result, speakers need to learn structures, not simply the meaning of new words, in order to make use of them in communicative contexts (Goldberg 2008: 107).

4.2.6 Cross-linguistic and pragmatic aspects

Goldberg notices how English constructions often underspecify word order, and, depending on the pragmatic effect speakers want to attribute to the sentence, the order of the words will be different, not preventing the well-formedness of the sentence. In the examples below (Godberg 2008: 96), caused-motion constructions can be formed alternating the order of the constituents (subject, direct object, verb, oblique). Goldberg points out that constructions usually co-occur in sentences, for example a also displays Wh-question construction. The creative potential of languages lies in the free combination of constructions and filling of their open slots with uncommon or novelty lexical items (2008: 97).

(3) *a. What did she give to the old folks?*

b. Into the pail she tossed her books.

c. I gave to him everything he wanted.

d. I handed it quickly to Allen.

As mentioned, the Constructionist approach, as other cognitive approaches, is usage-based. This allows researchers to analyze not only broad generalizations, but also idiosyncratic and idiomatic expressions that pervade daily life and represent a big part of our knowledge of languages.

The author suggests that information structure, i.e the way information is distributed in a text so as to convey more or less relevant information, referential givenness/newness, topicality, and quantifier scope are important aspects to tackle the nature of constructional meaning. Therefore, the choice of a particular

construction is due to pragmatic reasons and often determines the information structure of a sentence (Goldberg 2006: 129). This brings to light functional and pragmatic factors that seem to be valid cross linguistically, to the extent that follow from general evidence about human cognitive processes of attention and perception.

1. Less salient, predictable or recoverable information tend to be reduced or omitted, in order to make the sentence more economical and understandable.

2. More salient information, like actors and undergoers, often encoded syntactically as subjects and objects, tend to appear in prominent syntactic position. It seems that actors, that display features of volition, movement, and sentience, naturally draw human's attention even in non linguistic tasks. Undergoers, on the other hand, represent the endpoint of some sort of force that can somehow modify their state or properties. Goldberg points out that actors and undergoers are placed in prominent slots even if only one of them is present in the sentence.

3. Fixed word order and case marking is developed in languages in order to avoid ambiguity.

4. The meaning of transfer is naturally expressed with a ditransitive form due to the semantic relations between recipients and patients (objects), on the one side, and possessor (subject), on the other side.

According to Goldberg, these general aspects are not related to some hard wired, universal knowledge characteristic of grammar, but rather to general conceptual, perceptual features of the human brain, together with people's experience of the world (2008: 114-117).

Pragmatic issues of textual cohesion, topicality, and information structure will be discussed in chapter 5 and 6, in relation to the textual analysis of recipe texts.

CHAPTER 5

TEXTUAL COHESION AND THEMATIC PROGRESSION IN RECIPE TEXTS

5.1 Textual cohesion

In this section, we will firstly provide a definition of text and textual cohesion, then we will discuss cohesive devices employed in recipes, with a focus on co-referential deletion (zero anaphora), one of the main features of recipe texts. Finally, a reference tracking account of each of the recipe texts in the corpus will be presented, in order to assess and compare the occurrence of different cohesive means and co-referential deletion in the three languages.

5.1.1 Text and textual cohesion

Before referring to textual cohesion, it is important to point out the properties and features that a text is expected to have to be considered such. Halliday and Hasan (1976) refer to text as a "basic unit of meaning in a language, a unit of situational and semantic organization") that needs to display "texture" (1976:25. This term refers to the potential of the text of being coherent with respect to the semantic and situational contents and to be structurally cohesive. Cohesion is one of the two main aspects that define a piece of discourse as a text, and it concerns how the meanings expressed by the content are referred to one another. Cohesion is the property of the text to create semantic relations between different items in it, since it can only be codified when elements are interpreted by reference to other elements. These relations are not always restricted by sentence boundaries, they also act at a discourse level.

Halliday and Hasan (1976) make an important distinction between two main types of reference relations occurring in texts: *exophora* and *endophora*. Exophora is also referred to as "situational reference", that occurs especially in texts where non-linguistic factors, like the situational context, dominate in semantic terms and language is "ancillary". According to the authors, cooking recipes can be considered an example

of such texts, as their language is rich in contextual reference (1976: 24). This type of text, which contains what is referred to as "language in action", might appear ungrammatical at times and might occur in combination with some visual reference, like photos in recipes, for the reader to be able to codify it optimally (1976:34).

Conversely, endophora refers to textual reference relations, like anaphora, cataphora, or ellipsis (zero anaphora).[31] Anaphoric or cataphoric relations can be realized through grammar or through the lexicon (1976:5). Most commonly, grammatical cohesion can be realized through connectives, prepositions, pronouns, and adverbs. Lexical cohesion devices include repetition and substitution with hyponyms, hypernyms, or synonyms.[32] As we will see each language differs in the range of possibilities that exist to create semantic relations between items in texts, although as mentioned, the textual genre of recipe is characterized by a vast use of zero anaphora cross-linguistically. Given the importance of this phenomenon, a discussion of the features and logic of zero anaphora occurrence will follow.

5.1.2 Zero anaphora

The functional linguist Givón describes zero anaphora as "one of the most natural, universal, ancient and functionally-coherent grammatical devices in the tool-kit of natural language" (1983:1). Zero anaphora is referred to as "an empty grammatical slot in a sentence standing for a previously mentioned nominal referent without any grammatical marking in the expression to specify the missing referent" (Tao, Healy 2005:101). Scholars studying the occurrence of zero anaphora argue that the choice of different kinds of referential devices is not completely arbitrary, conversely, it is clearly functional and related to aspects of information structure and status of the referents in discourse processing (Li 2005:44). The logic of zero anaphora, according to Givón, lies in communicative principles of information predictability and importance, i.e. predictable and unimportant information need not to be mentioned. Givon argues that the

[31] Anaphora refers to a relation between two linguistic elements in which the interpretation of one, called anaphor, is determined by the interpretation of another element found in an antecedent position. A cataphoric relation, instead, sees the anaphor positioned at the front, and the element to which it relates follows it (Halliday and Hasan 1976).
[32] See Halliday and Hasan (1986: 324) for a complete review of cohesive devices.

choices, made by speakers, of using zero anaphora or other referential devices depend on the degree of referential continuity or topic continuity, i.e. the possibility to identify the referent, as just mentioned or contextually accessible. Therefore the more continuous or predictable the referent is, the less overt device needs to be used. The author defines a hierarchy of cohesive means ranked in terms of their degree of referential continuity (1983:3).

Figure 1. Referent coding devices and referential continuity

Lowest referential continuity

a. indefinite full NPs
b. definite full NPs
c. stressed independent pronouns
d. unstressed anaphoric pronouns
e. zero anaphora

Highest referential continuity

Psycholinguistic research has confirmed this theory, by relating the use of referential devices to the cognitive aspects of memory and attention. Memory activations are categorized into three states: active, semi-active, and inactive. If an NP has just been mentioned or it is inferable from the context, the memory of that NP will still be active, and speakers won't need repeating it. Conversely, if an NP hasn't been mentioned yet or was talked about some time before, the memory of the hearer won't be active on that element and the speaker will need to repeat the full NP (Li 2005: 45). Therefore, as we can notice in the figure below, it is expected that the closer the anaphoric distance, the higher the referential continuity (Givón 1983:8).

Figure 2. Expected anaphoric distance of referent-coding devices

Continuity	Devices	Anaphoric distance

highest ---------- zero ----------1 clause (chain-medial)

unstressed pronouns

pronominal agreement

intermediate ----------stressed pronouns----------2-3 clauses (chain-medial)

lowest---------- full NPs---------- > 3 clauses

English, a rigid SVO language, employs four main referential devices, i.e. zero anaphora, unstressed pronouns, stressed pronouns, and full definite NPs, perfectly conforming to the expected values (Givón 1983:9). Spanish, a language typologically similar to Italian, also conforms to the expected values, although featuring obligatory pronominal agreement and unstressed object pronouns cliticized to the verb, instead of zero anaphora (1983: 11). Mandarin, on the other hand, is found to make a much larger use of zero anaphora, employed over a higher anaphoric distance and an almost null use of pronominal devices (1983: 13). Li Wendan (2005: 45) argues that the phenomenon of zero anaphora occurrence in Chinese has attracted a lot of attention among linguists, both due to the pervasive use Chinese makes of zero NPs and to the huge difference that English and Chinese display in this sense. In the next section, we will take the recipe texts from the corpus as examples to show how zero anaphora and other referencial devices act in recipes cross-linguistically.

5.1.4 Cohesion in recipes

As discussed in chapter 2, recipes are a procedural type of text that syntactically displays a wide occurrence of co-referential deletion, especially in subject and direct object. However it was mentioned that user-generated recipe texts in food blogs tend to avoid co-referential deletion of subjects and direct objects for reasons of clarity and audience involvement. It was also noted that cohesion in procedural texts is achieved not only through endophoric devices but also through contextual reference (exophora). In the next sections we will track the reference of the three recipes present in the corpus and subsequently we will compare how the three different languages achieve text cohesion. We will signal each new referent with a

subscript letter besides it the first time it is mentioned. The same letter will be applied to the deictics or zero anaphora referring to it. Referents and referential devices will be signaled in bold.

5.1.5 English recipe reference tracking

As mentioned in chapter 2, for reasons of consistency, we selected two recipes written in English: pumpkin puree and bread rolls. Both recipes present two different versions of the cooking procedure: a blog-like colloquial discussion and a cookbook-like printable sheet. Hereafter the blog discussion version will be referred to as 'text 1' and the printable recipe version as 'text 2'. In this section we will compare the two versions, to discuss the difference in features like choice of cohesive devices and zero anaphora occurrence. The two versions can be seen compared in the table below. Both columns display the pumpkin puree recipe at the top and the rolls following.

Text 1: Blog discussion	Text 2: Printable recipe

Pumpkin puree (E.2) *Start by lopping the tops off your* ***pumpkins***$_j$*. It helps to have a sharp knife.* (E.3) *Cut the pumpkins in half, top to bottom.* (E.4) *Scoop out the insides (and save your seeds to make roasted pumpkin seeds!). I used a cookie scoop for most of the insides and some kitchen shears for the tough stringy bits.* (E.5) *When* ***they***$_j$*'re all clean, put* ***them***$_j$ *face down on a baking sheet, and add about 1/4 inch of water around* ***them***$_j$ *(it doesn't need to be too precise).* (E.6) *Bake* ***Ø***$_j$ *at 350 for 60-90 minutes, checking* ***Ø***$_j$ *periodically after 60 minutes.* (E.7) ***They***$_j$ *are finished when a fork slides in easily.* ***Mine***$_j$ *were perfect after 70 minutes.* (E.8) *Let the* ***pumpkin*** *cool (this is important, as my burned fingers can attest!) and then scoop the* ***meat***$_k$ *out into a blender.* (E.9) *Blend* ***Ø***$_k$ *until well-pureed, pulsing to break up any stubborn bits.* (E.10) *If* ***it***$_k$*'s too thick and hard to puree, add a little water to get things moving.* (E.11)*Depending on how watery your* ***pumpkins*** *were, you may have a lot or a little water to drain off.* (E.12) *If you're happy with the consistency of your* ***puree***$_l$*, by all means leave* ***it***$_l$ *as is!* (E.13) *If you want* ***it***$_l$ *to be more like what you get out of the can, you can drain* ***it***$_l$ *in a colander set over a pot.* (E.14)*I found that paper towels worked great for lining the colander.*	*Pumpkin puree* (E.22) *Cut the tops off your* ***pumpkins***$_j$ (E.23) *Cut the* ***pumpkins*** *in half, from top to bottom* (E.24) *Scoop out the insides of the* ***pumpkins*** (E.25)*Place the* ***pumpkins*** *face down on a baking sheet* (E.26) *Add about 1/4 inch of water around* ***them***$_j$ (E.27) *Bake* ***Ø***$_j$ *at 350 for 60-90 minutes, checking* ***Ø***$_j$ *periodically after 60 minutes* (E.28) ***They***$_j$ *are finished when a fork slides in easily* (E.29)*Let the* ***pumpkin*** *cool and then scoop the* ***meat***$_k$ *out into a blender.* (E.30)*Notes: If you want the* ***puree***$_h$ *to be more like what you get out of the can, drain the* ***puree*** *in a colander set over a pot. I found that paper towels worked great for lining the colander.*

(E.15) *I let* ***it***$_{I}$ *drain for about 30 minutes and got about 1 1/2 cups of water out.*	

Bread rolls *(E.36) Start by dissolving the **yeast in warm water and a pinch of sugar**$_m$ in your mixing bowl.* *(E.37) Allow the **yeast**$_m$ to sit for about 5 minutes until **it**$_m$'s foamy.* *(E.38) Other Ingredients* *(E.39) Next, you'll want to add **the remaining brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter**$_n$ to the bowl.* *(E.40) Mix **everything**$_n$ together until **it**$_n$ has fully blended.* *(E.41) Slowly Add **Flour** – You will only want to stir in 2 cups of flour to start.* *(E.42) Once **that**$_n$ has mixed together, add 1/4 cup of additional flour at a time.* *(E.43) Once the **dough**$_o$ comes together and is slightly sticky to the touch, you'll know **it**$_o$'s ready.* *(E.44) Keep in mind you could potentially add up to 4 1/2 total cups of flour.* *(E.45) Knead **it**$_o$– When **the dough** is ready, knead **it**$_o$ for about 8 minutes until **it**$_o$'s nice and smooth.* *(E.46) Rise Up **Ø**$_o$– When **Ø**$_o$ smooth, place **the dough** into a greased bowl and let **it**$_o$ rise for an hour.* *(E.47) Punch & Separate – After **the dough** rises, punch **it**$_o$ down and then you'll divide **it**$_o$ into two **pieces**$_p$.* *(E.48) Roll each **piece** out into a **circle**$_q$ and cut each **circle** into twelve **wedges**$_r$.*	*Bread rolls* *(E.69) In a large bowl or the bowl of a stand mixer, dissolve the **yeast in the warm water with a pinch of brown sugar**$_m$.* *(E.70) Let **Ø**$_m$ sit five minutes, until **Ø**$_m$ foamy.* *(E.71) Add the remaining **brown sugar, salt, pumpkin pie spice, egg, egg yolk, pumpkin puree, and 1/4 cup butter**$_n$, and mix **Ø**$_n$ to combine.* *(E.72) Stir in two cups of flour, and mix **Ø**$_n$ to combine.* *(E.73) Add additional flour, 1/4 cup at a time until the **dough**$_o$ comes together and **Ø**$_o$is only slightly sticky to the touch.* *(E.74) Knead **Ø**$_o$ 5-10 minutes, until **Ø**$_o$ smooth.* *(E.75) Place **Ø**$_o$ in a greased bowl and let **Ø**$_o$ rise one , or until **Ø**$_o$ doubled.* *(E.76) When the **dough** has risen, gently punch the **dough** down and divide **Ø**$_o$ into two equal sized **balls**$_p$.* *(E.77) Roll each **ball** out into a **circle**$_q$ that is approximately 18 inches in diameter and spread **Ø**$_q$ with two tablespoons of the remaining butter.* *(E.78) Using a pizza cutter, cut the **dough** into twelve equal sized **wedges**$_r$.* *(E.79) Roll up **Ø**$_r$, starting from the wide edge, into a **crescent shape**.* *(E.80) Place **Ø**$_s$ on a greased or parchment lined baking sheet, and repeat with remaining **dough**.* *(E.81) Roll the second ball of **dough** out, and repeat the process.*

*(E.49) Roll each **wedge** up into a **crescent shape** and place **them**$_s$ on your prepared baking sheet.* *(E.50) I love seeing **them**$_s$ all lined up on the baking sheet!* *(E.51)Bake **Ø**$_s$– Bake the **pumpkin crescent rolls**$_s$ for about 15 minutes.*	*(E.82) You should be able to fit all **24 rolls**$_s$ on one large baking sheet.* *(E.83) Bake **Ø**$_s$ at 375 degrees for 15-17 minutes, or until the **rolls** are just golden on top.*

Table 4: Cohesive devices employed in English recipe

Referential devices	Text 1: Blog discussion	Text 2: Printable recipe	Total
Full NPs repetition	9	12	21
Pronouns and other deictics	22	2	24
Co-referential deletion (zero NPs)	6	17	23
Word count	485	352	837

From Table 4 above, we can notice how the author makes use of full NPs repetition in both texts, supposedly to help the reader keep track of reference. As expected, co-referential deletion mainly occurs in terms of null objects, principally in text 2, although in some cases the element deleted is not the object of the clause, but its subject. As mentioned in chapter 2, English recipes are characterized by subject-less, verb initial imperative sentences; however, subject deletion doesn't only occur when it is referred to an agent, i.e. the person realizing the recipe, but also when the subject is the patient, i.e. the product being transformed. In text 2 sentence E.74, the null direct object of the first clause becomes the null subject of

the second clause, and it is not the agent, but the patient, i.e. the NP "dough". Moreover, in this case the verb *to be* is also deleted. We can notice that object and subject deletion usually occurs in clauses starting with the words *when* or *until*. This situation is clear when confronting the same sentence in text 1, where all of the elements are present, and text 2:

Text 1, (E.45) *When **the dough** is ready, knead **it**$_o$ for about 8 minutes until **it**$_o$'s nice and smooth.*

Text 2, (E.74) *Knead **Ø**$_o$ 5-10 minutes, until **Ø**$_o$ smooth.*

In text 1, direct object deletion is almost completely substituted with pronouns and other deictics, like *everything* in sentence (E.40). Moreover, as can be noticed looking at the recipes in their original web page contexts, text 1 doesn't display metatextual features typical of recipe texts, like bipartite structure, chunking, and numbered sentences, while text 2 does. We can therefore confirm that text 2, provided as a printable cookbook-like recipe, is syntactically more similar to those found in cookbooks, while text 1, as a blog-like discussion about the cooking procedure, displays more features of typical cooking blogs. Considering the small amount of zero anaphora occurrence and the big amount of pronouns and other deictics displayed, we might surmise that text 1 might be more comprehensible and easily accessible than text 2 for a non native or non proficient reader. On the other hand, we need to consider other aspects, like the nature of reference and the need to activate inferential processes. Subsequently, we will discuss some examples where, even in text 1, some inference is needed to achieve full comprehension. In general, we can notice that, in both texts, most of the reference is anaphoric, although cataphoric reference occurs at times. In text 1, a clear example of intrasentential cataphora is sentence (E.46):

(E.46) *Rise up- When **Ø**$_o$ smooth, place **the dough** into a greased bowl and let **it**$_o$ rise for an hour*

Text 1 also displays an example of cataphora acting at a discourse level: in sentence (E.49), the referent of the verb *place* are the *rolls*, which are mentioned subsequently, in sentence (E.51), and not the *wedges*, which is the last patient mentioned in the text. Although sentence (E.49) explains that *wedges* should be

rolled up in *crescent shape*, it doesn't specify the resulting product of this action, namely *pumpkin crescent rolls*.

Text 1 (E.49) *Roll each* ***wedge*** *up into a* ***crescent shape*** *and place* ***them***$_s$ *on your prepared baking sheet.*

(E.50) *I love seeing* ***them***$_s$ *all lined up on the baking sheet!*

(E.51) *Bake* ***Ø***$_s$*– Bake the* ***pumpkin crescent rolls***$_s$ *for about 15 minutes*

The same happens in text 2, sentences (E.79) to (E.82). This example confirms the claims that recipes, as other procedural texts, are contextually defined and might, to some extent, be interpreted contextually by the reader, even if they do not display a big amount of co-referential deletion, as text 1.

Another example that confirms this claim is visible in text 1, where the word *yeast* in sentence (E.36) means *yeast powder*, while the same word in the subsequent sentence (E.37) actually means 'liquid mixture of yeast powder and sugar dissolved in water'. In text 2, the NP *yeast* in sentence (E.69) is not repeated a second time, but it is substituted with a zero anaphora in sentence (E.70), which clearly refers to the liquid mixture mentioned above. Similarly, in text 1, sentence (E.42), the reader must interpret the reference of the word *that* to fully understand its meaning. This word doesn't only refer to *flour*, being the last full NP mentioned in the text but refers to the mixture obtained incorporating flour to the yeast mixture and to the ingredients listed in sentence (E.39), referred to as *everything* in sentence (E.40).

Text 1

(E.39) *Next, you'll want to add* ***the remaining brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter***$_n$ *to the bowl.*

(E.40) *Mix* ***everything***$_n$ *together until* ***it***$_n$ *has fully blended.*

(E.41) *Slowly Add* ***Flour*** *– You will only want to stir in 2 cups of flour to start.*

(E.42) *Once* ***that***$_n$ *has mixed together, add 1/4 cup of additional flour at a time.*

To sum up, text 1, the blog-like discussion of cooking procedure, achieves cohesion mainly through the use of pronouns and other deictics, while text 2, the printable recipe, achieves cohesion mainly through the use of zero anaphora. As expected, zero elements usually coincide with the patient, both as the direct object or as a subject of the clause. In these cases the verb *to be* is also omitted. Zero elements are usually recoverable from the text anaphorically, although some use of cataphora is also present. Full NPs repetition is present in both versions, although not always the same NP refers to the same object; similarly, not always deictics like *that* refer to the last full NP mentioned in the text. For these reasons contextual inference and interpretation are needed for full comprehension.

5.1.6 Italian recipe reference tracking

As mentioned in chapter 2, being a Romance fusional language, Italian usually achieves cohesion through the use of full NPs repetition, agreement, stressed pronouns and verbal clitic pronouns, while co-referential deletion is extremely rare. Nonetheless, in the context of recipes texts, direct object deletion is allowed also in Italian. However, recipes from food blogs might display more colloquial features and less use of co-referential deletion. Below, we will firstly present the reference tracking of the Italian recipe texts, then we will discuss the nature and function of the referential devices employed.

(I.9)*Preparate la purea di* ***zucca***$_j$*.*
prepare the puree of **pumpkin**$_j$
'Prepare the pumpkin puree.'

(I.10) *(a)Prendete una* ***zucca***$_j$ *non molto grande, lavate bene la buccia,*
take a **pumpkin**$_j$ not very big wash well the skin
'Take a medium size pumpkin, wash the skin very well'

*(b)tagliar-****la***$_j$ *a grosse* ***fette***$_k$ *e cuocer-****le***$_k$ *in una pentola con un dito d'acqua*
cut-**it**$_j$ in big **slices**$_k$ and cook-**them**$_k$ in a pan with a finger of water
'cut it in large slices and cook them in pan with a little water'

*(c) o metter-****le***$_k$ *in forno (avvolta in un pezzo di stagnola) per 30 minuti.*

or put-**them**$_k$ in oven wrapped in a piece of tinfoil for 30 minutes
'or put them in the oven (wrapped in a piece of tinfoil) for 30 minutes.'

(I.11) *Fate raffreddare* **Ø**$_k$ *e con un cucchiaio scavare via la polpa dalla buccia.*
let cool **Ø**$_k$ and with a spoon excavate away the pulp of-the skin
'Let cool and with a spoon, excavate the pulp off the skin.'

(I.12) *Questa è la nostra* ***purea***$_l$*, schiacciate-****la***$_l$ *ora con una forchetta e usate-****ne***$_l$ *120gr.*
this is the our **puree**$_l$ mash-**it**$_l$ now with a fork and use-**CLIT PR**$_l$ 120gr
'This is our puree, now mash it with a fork, use 120 grams.'

(I.13) *Potete impastare comodamente a mano in una ciotola o con impastatrice*
Can knead comfortably by hand in a bowl or with mixer
o planetaria.
or kneading machine
'You can knead comfortably by hand in a bowl or using a kneading machine'

(I.14) *(a)Mettete in una ciotola il quantitativo di* ***polpa di zucca***$_l$ *(120gr),*
Put in a bowl the quantity of **pulp of pumpkin**$_l$ 120 gr
'Put 120 grams of pumpkin puree in the bowl'

*(b)****la Pasta Madre (a pezzetti), lo zucchero e parte dell' acqua***$_m$ *(es. 100 gr) ,*
the sourdough in pieces the sugar and part of-the water$_m$ ex. 100 gr
'the sourdough cut in pieces, the sugar and part of the water (for example 100 grams)'

(c) ora mescolate bene il ***tutto***$_m$ *ottenendo un* ***composto cremoso***$_m$***.***
now mix well the **everything**$_m$ obtaining a **mixture creamy**$_m$
'now mix everything very well to obtain a creamy mixture'

(I.15) *(a) Aggiungete la farina e gradualmente inserite la restante* ***acqua***$_n$
add the flour and gradually insert the remaining water
'Add the flour and gradually insert the remaining water'

(b) può darsi che non serva ***tutta***$_n$
might that NEG need all
'you might not need it all'

(c) perché ci sono zucche più acquose
because there are pumpkins more watery
'because some pumpkins are more watery than others'

(d) quindi dovrete regolarvi voi
so have.to regulate you
'so you'll have to adjust the ingredients on your own'

(e)in base alla consistenza che prende ***l' impasto***$_o$
depending on-the consistency that takes the **dough**$_o$

'depending on the consistency that the dough takes'

(f)senza esagerare.
without exaggerate
'without exaggeration'

(I.16) *Quando* **Ø**$_o$ *sarà incordato aggiungete a filo l' olio di soia,*
When **Ø**$_o$ be blended add at thread the oil of soy
'When the dough will be blended, add some soy oil slowly'

(a)impastate fino a che l' ***impasto*** *non sarà omogeneo, liscio ed elastico.*
knead until the **dough** NEG be homogeneous smooth and elastic
'Knead until the dough becomes homogeneous, smooth and elastic.'

(I.17) *(a)Pirlate un po* ***l' impasto*** *a formare una bella* ***palla***$_p$ *liscia*
Spin a bit the **dough** to form a good **ball**$_p$ smooth
'Spin the dough a little bit to form a nice, smooth ball. '

(b) oleate **Ø**$_p$ *leggermente e mettete-****la***$_p$ *in una ciotola a riposare coperta*$_p$ *per 2-3 ore*
oil **Ø**$_p$ slightly and put-**it**$_p$ in a bowl to rest covered$_p$ for 2-3 hours
'Oil it slightly, put it in a bowl and cover it up. Let it rest for 2-3 hours.'

(I.18) *(a)Mettete* **Ø**$_p$ *ora in frigo per una decina di ore*
Put **Ø**$_p$ now in fridge for a ten of hours
'Now put it in the fridge for around ten hours.'

(b) (passaggio non obbligatorio ma comodo per organizzarsi con i tempi).
step NEG obligatory but convenient to organize with the time
(not mandatory, but convenient to get organized with the timing)

(I.19) *(a)Tolt****o***$_o$ *dal frigo fate tornare* **Ø**$_o$ *a temperatura ambiente per un' ora,*
Removed$_o$ from-the fridge let return **Ø**$_o$ at temperature room for one hour
'Remove the dough from the fridge and let it warm up to room temperature'

(b) stendete con il mattarello ***l' impasto*** *sgonfiando-****lo***$_o$ *bene ma delicatamente,*
spread.out with the rolling pin **the dough** deflating-**it**$_o$ well but gently
'Spread out the dough with the rolling pin deflating it gently '

(c) tirate l' ***impasto*** *all' altezza di circa 5 mm*
stretch the **dough** at-the height of about 5 mm
'stretch it until it gets around 5 mm high'

(d) e tagliate i triangoli che andrete ad arrotolare per fare le ***brioches***$_q$
and cut the triangles that go to roll.up to make the **brioches**$_q$

'and cut out the triangles you're going to roll up to make the brioches'

*(e) (**ne**$_q$ escono 12 circa).*
CLIT PR$_q$ get 12 about
'you'll get around 12 of them.'

(I.20) *Vedete come fare sul post delle **brioches** semplici.*
See how make on-the post some **brioches** simple
'Check out the post to see how to make simple brioches.'

(I.21) *Ponete **Ø**$_q$ a lievitare direttamente sulla placca da forno foderata con carta da forno.*
put **Ø**$_q$ to rise directly on-the tray of oven wrapped with paper of oven
'Put the dough to rise on the oven tray wrapped with parchment paper.'

(I.22) *Attendete il raddoppio o più del **volume Ø**$_q$ e cuocete.*
wait the doubling or more of-the **volume Ø**$_q$ and bake
'Wait until it redoubles in volume or even a bit more and bake.'

(I.23) *(a)Prima d' infornare **Ø**$_q$ io nebulizzo la superficie con acqua,*
before of bake **Ø**$_q$ 1SG spray the surface with water
'Before baking in the oven I usually spray the surface with water'

*(b) rimar**ranno**$_q$ ancor più soffici e non si svilupperà una crosta dura.*
remain$_q$ even more soft and NEG REFL develop a crust hard
'they will get softer and won't develop a hard crust.'

(I.24) *Cottura: A forno caldo, 160-170°C, mettete la placca nella parte bassa e cuocete **Ø**$_p$*
baking: at oven hot 160-170°C put the plaque in-the part low and bake**Ø**$_p$
'Baking directions: Put the tray in the lover part of the hot oven (160°-170°) and bake

per circa 20 minuti.
for about 20 minutes
for about 20 minutes.'

(I.25) *Tolt**e**$_p$ dal forno far-**le**$_p$ raffreddare su una gratella.*
removed$_p$ from-the oven let-**them**$_p$ cool on a grill
'Once you remove them from the oven, let them cool on a grill'

Table 5: Cohesive devices employed in Italian recipe

Referential devices	**Occurrence in Italian recipe**

Full NPs repetition and synonyms	6
Other deictics	2
Pronouns, verbal agreement	12
Co-referential deletion (zero NPs)	10
Word count	303

As expected, the Italian recipe text achieves cohesion mainly through the use of clitic pronouns and verbal agreement, although it also displays a high occurrence of direct object deletion. It is possible that the author, as typical of bloggers (Diemer et al.2013:68), is led to, at least partially, observe the traditional recipe syntax and structure. As in the English recipe text, the patients deleted are not only found in direct object position, but also in subject position. In sentence (I.16), the patient is the subject of the first subordinate clause which is expressed as a full NP, *impasto* 'dough', both anaphorically, in the previous sentence (I.15), and cataphorically, in the third clause. The reader is able to track reference through verbal agreement and contextual information. We can notice that differently to the English text, the verb *to be* is not deleted in the Italian sentence.

(I.16)*Quando* **Ø**$_o$ *sarà incordato aggiungete a filo l' olio di soia,*
when **Ø**$_o$ be blended add at thread the oil of soy
'When the dough will be blended, add some soy oil slowly,'

(a)impastate fino a che l' ***impasto*** *non sarà omogeneo, liscio ed elastico.*
knead until the **dough** NEG be homogeneous smooth and elastic
'Knead until the dough becomes homogeneous, smooth and elastic.'

We can in fact observe that most of the zero NPs refer to the last full NP mentioned in the text, as zero anaphora, although intrasentential zero cataphora also occurs. As observed in the English text, the Italian text also presents a number of full NPs repetitions, possibly due to its colloquial nature, which makes it clearer and more accessible. Moreover, it is interesting to notice the occurrence of the synonym *polpa di zucca* 'pumpkin pulp' to refer to *purea* 'pumpkin puree'.

Verbal agreement surely constitutes an important cohesive device of the text and specifies both number and genre. For example in sentence (I.19)(a), the reference of the masculine past participle verb *tolto* is not *palla*, which is femminine, although being the last full NP mentioned, but *impasto*, which is masculine and is mentioned cataphorically in the clause that follows.

(I.19) (a)*Tolt**o**$_o$ dal frigo fate tornare **Ø**$_o$ a temperatura ambiente per un'ora,*
removed$_o$ from-the fridge let return **Ø**$_o$ at temperature room for one hour
'Remove the dough from the fridge and let it warm up to room temperature,'

Verbal clitic pronouns also contribute greatly to text cohesion through number and genre specification. In sentence (I.10)(a) and (b) the clitic pronoun *la* in the verb *tagliarla* is singular and refers to the NP *zucca* 'pumpkin', while *le* in the verb *cuocerle* is plural and clearly refers to *fette* 'slices'. This mixed reference is due to a mistake in syntax. As mentioned in chapter 2, user-generated texts might display some grammar errors due to their colloquial nature. Sentence (I.10) is an example of this phenomenon.

(I.10) (a)*Prendete una **zucca** non molto grande, lavate bene la buccia,*
take a **pumpkin**$_j$ not very big wash well the skin
'Take a medium size pumpkin, wash the skin very well,

*(b)tagliar-**la**$_j$ a grosse **fette**$_k$ e cuocer-**le**$_k$ in una pentola con un dito d' acqua*
cut-**it**$_j$ in big **slices**$_k$ and cook-**them**$_k$ in a pan with a finger of water
'cut it in large slices and cook them in pan with a little water'

Among the clitic pronouns used in the text, particularly worth noticing is the use of the pronoun *ne*, which in this recipe displays both anaphoric and partitive properties.[33] In sentence (I.12), *ne* is used as a partitive pronoun, followed by the quantity.

*(I.12) Questa è la nostra **purea**$_I$, schiacciate-**la**$_I$ ora con una forchetta e usate-**ne**$_I$ 120gr.*
this is the our **puree**$_I$ mash-**it**$_I$ now with a fork and use-**CLIT PR**$_I$ 120gr
'This is our puree, now mash it with a fork, use 120 grams.'

In sentence (I.19)(e), *ne* is used anaphorically to indicate the full NP mentioned *brioches*.

(I.19)(e)*(**ne**$_q$ escono 12 circa).*

[33] For an account of the different uses of the clitic pronoun *ne*, see Nissim and Perboni (2008).

CLIT PR$_q$ get 12 about
'you'll get around 12 **brioches**'

From the table we can notice that the text doesn't make a big use of other deictic words. It is worth noticing however that, as in the English text, the NP *tutto* 'everything' in sentence (I.14)(c) refers anaphorically to the list of ingredients mentioned previously.

(I.14) (a)*Mettete in una ciotola il quantitativo di* ***polpa di zucca***$_l$ *(120gr),*
put in a bowl the quantity of **pulp of pumpkin**$_l$ 120 gr
'Put 120 grams of pumpkin puree in the bowl'

(b)***la Pasta Madre (a pezzetti), lo zucchero e parte dell' acqua***$_m$ *(es. 100 gr) ,*
the sourdough in pieces the sugar and part of-the water$_m$ ex 100 gr
'the sourdough cut in pieces, the sugar and part of the water (for example 100 grams)'

(c) *ora mescolate bene il* ***tutto***$_m$ *ottenendo un* ***composto cremoso***$_{m.}$
now mix well the **everything**$_m$ obtaining a **mixture creamy**$_m$
'now mix everything very well to obtain a creamy mixture.'

On the other hand, the NP *tutta*, in sentence (I.15) only refers to the word *acqua* 'water', and not to the word *farina* 'flour', both mentioned in the clause before, and the reader is able to track the reference only inferring it from the context.

(I.15)(a)*Aggiungete la farina e gradualmente inserite la restante* ***acqua***$_n$
add the flour and gradually insert the remaining water
'Add the flour and gradually insert the remaining water'

(b)*può darsi che non serva* ***tutta***$_n$
might NEG need **all**$_n$
'you might not need it **all**

(c) *perché ci sono zucche più acquose*
because there are pumpkins more watery
'because some pumpkins are more watery than others'

(d)*quindi dovrete regolarvi voi*
so have to regulate.RIFL.2PL you
'so you'll have to adjust the ingredients on your own'

(e)*in base alla consistenza che prende* ***l'impasto***$_o$**.**
depending on-the consistency that takes the **dough**$_o$

'depending on the consistency that the dough takes.'

To sum up, in general, in the Italian recipe text we can observe that reference can be tracked anaphorically. The main devices used to achieve cohesion are clitic pronouns and verbal agreement. Co-referential deletion of the patient is present, mainly as a direct object. Full NP repetition, synonyms and other deictics are used moderately.

5.1.7 Chinese recipe reference tracking

In the last two decades, the use of referential forms in Chinese language has attracted the attention of linguists due to a great difference with English (Li 2005: 45).

> While English uses pronouns extensively and zero anaphors only in syntactically constrained circumstances, Chinese, just the opposite, makes much less use of lexical pronouns, but pervasive use of zero NPs (Li 2005: 45-46).

Linguists have tried to study the phenomenon of zero NPs occurrence in syntactic, semantic, and pragmatic terms. Analyzing zero NPs in syntactic terms, Chen (1986) draws an accessibility hierarchy for Zero NPs, which shows that the most common positions for Zero NPs to occur are topic/subject and direct object:

topic/subject > direct object > indirect object > pivotal object > oblique object

According to Chen 1986, this is due to identifiability and negligibility factors affecting the choice of referential forms, i.e. identifiable and negligible information is not repeated, and a zero NP is preferred. Subjects are absent in procedural discourse, direct objects are also commonly deleted in recipe texts for reasons of economy and clarity.[34] As we will see, in the patient slot the Chinese recipe text makes abundant use of zero NPs and very limited use of other cohesive devices typical of other languages.

In what follows I will illustrate the reference tracking of the Chinese recipe text. As mentioned in section 2.1.3, Chinese recipes are characterized by semantically passive sentences, which place the patient in a preverbal position[35], therefore the zero anaphora symbol Ø will be placed in the preverbal position.

[34] See Chapter 2.
[35] See also section 5.3 and 6.2.3.

(C.9)

(a) 南瓜泥$_j$, 用南瓜$_k$去皮切块蒸熟，

nánguā ***ní***$_j$ *yòng* ***nánguā***$_k$ *qù* *pí* *qiē* *kuài* *zhēng* *shú*

pumpkin puree$_j$ TOP use **pumpkin**$_k$ eliminate skin cut pieces steam cook

'As for the pumpkin puree, peel the pumpkin, cut in pieces and steam

(b) 然后**Ø**$_k$入榨汁机**Ø**$_k$榨成汁$_l$,

ránhòu **Ø**$_k$ *rù* *zhàzhījī* **Ø**$_k$ *zhà-chéng* ***zhī***$_l$

then **Ø**$_k$ insert juicer **Ø**$_k$ press-become **juice**$_l$

'then put it in the juicer and juice it'

(c) 用175克南瓜泥$_l$。

yòng 175 kè ***nánguā*** ***ní***$_l$

use 175 grams **pumpkin puree**$_j$

'use 175 grams of pumpkin puree.'

(C.10) 然后除黄油外所有材料$_m$放入厨师机内。

ránhòu *chú* *huángyóu* *wài* *suǒyǒu* *cáiliào* *fàng-rù* *chúshījī* *nèi*

then except butter out all ingredient put-insert mixer in

'Put all of the ingredients in the mixer except the butter.'

(C.11) 启动搅拌程序然后**Ø**$_m$搅拌5分钟。

qǐdòng *jiǎobàn* *chéngxù* *ránhòu* **Ø**$_m$ *jiǎobàn 5* *fēnzhōng*

activate mixing program then **Ø**$_m$ mix 5 minutes

'Activate the mixing program and mix for 5 minutes'

(C.12) 加入黄油，在继续启动搅拌程序，**Ø**$_n$搅拌5分钟。

jiā-rù *huángyóu* *zài* *jìxù* *qǐdòng* *jiǎobàn* *chéngxù* **Ø**$_n$ *jiǎobàn 5 fēnzhōng*

add-insert butter again continue activate mixing program **Ø**$_n$ mix 5 minutes.

'Insert butter and continue mixing for 5 minutes'

(C.13) **Ø**$_n$手揉也可以。

Ø$_n$*shǒu* *róu* *yě* *kěyǐ*

Ø$_n$ hand knead also can

'You can also knead the mixture by hand'

(C.14) **Ø**$_n$能拉出膜即可。

Ø$_n$ *néng lā* *chū* *mó* *jíkě*

Ø$_n$ can pull out film sufficient

'The mixture will be ready when you'll be able to pull it out as a film without breaking it.'

(C.15) 然后**Ø**$_n$整理成面团$_o$, 入不锈钢碗$_p$里。

ránhòu **Ø**$_n$ *zhěnglǐ-chéng* ***miàntuán***$_o$ *rù* ***bùxiù*** ***gāng*** ***wǎn***$_p$ *lǐ*

then **Ø**$_n$ arrange-become **dough**$_o$ insert **stainless steel bowl**$_p$ in

'Then knead the mixture until it becomes dough and put it into a stainless steel bowl.'

(C.16) 如果没有厨师机的可以用手揉**Ø**$_n$, 时间更长一些，约10-15分钟这样。

(a)*rúguǒ méi yǒu chúshījī de*
If NEG have mixer DET
'If you don't have a mixer

(b)*kěyǐ yòng shǒu róu* **Ø**$_n$
can use hand knead **Ø**$_n$
you can use your hands to knead the dough

(c)*shíjiān gèng chǎng yī-xiē yuē 10-15 fēnzhōng zhè yàng*
time more long a-little about 10-15 minute this way
hand kneading will take you about 10-15 minutes more.'

(C.17) 这样会比较辛苦一些。
zhè yàng huì bǐjiào xīnkǔ yī-xiē
this way might quite hard a-little
'This way you might have to do some hard work.'

(C.18) 吃货辛苦一些也没事。
chīhuò xīnkǔ yī-xiē yě méi shì
foodie hard a-little also not problem
'But for a real foodie working hard in the kitchen is not a problem. '

(C.19) **Ø**$_{p/o}$盖上湿布，**Ø**$_o$发酵至两倍大，如图所示。
Ø$_{p/o}$ *gài-shàng shī bù* **Ø**$_o$ *fājiào zhì liǎng bèi dà rú tú suǒ shì*
Ø$_{p/o}$ cover-up wet cloth **Ø**$_o$ ferment until two time big as picture NOM show
'Cover up the bowl/dough with a wet cloth and let it rise until it doubles in volume, as shown in the picture.'

(C.20) 冬天需要将碗$_p$座入温水上面，也可以 **Ø**$_p$ 放入烤箱，烤箱最后一层放一盆开水，然后关上烤箱门，进行**Ø**$_o$发酵，这样约50分钟就可以**Ø**$_o$发酵至两倍大了。

(a) *dōngtiān xūyào jiāng* ***wǎn***$_p$ *zuò-rù wēn shuǐ shàngmiàn*
winter need PART **bowl**$_p$ sit-insert warm water above
'In the winter, you'll need to put the dough bowl into a bowl of warm water

(b) *yě kěyǐ* **Ø**$_o$ *fàng-rù kǎoxiāng*
also can **Ø**$_o$ put-insert oven
or inside the oven

(c) *kǎoxiāng zuìhòu yī céng fàng yī pén kāi shuǐ*
oven last one layer put one container boiling water
where you have placed a container full of boiling water

(d)*ránhòu guānshàng kǎoxiāng mén jìnxíng* **Ø**$_o$ *fājiào*
then close oven door execute **Ø**$_o$ fermentation
then close the oven door and leave the dough there to rise

(e) *zhè yàng yuē 50 fēnzhōng* **Ø**$_o$ *jiù kěyǐ fājiào zhì liǎng bèi dà le*
this way about 50 minutes **Ø**$_o$ indeed can ferment until two time big MOD
this way your dough will indeed have doubled in 50 minutes.'

5

(C.21) **Ø**$_o$ 分别分成大小一样的小面团$_q$，**Ø**$_q$ 揉成圆形，**Ø**$_q$ 盖上湿布或者保鲜膜，**Ø**$_q$ 放置好15-20分钟。

(a) **Ø**$_o$ *fēnbié fēn-chéng dàxiǎo yīyàng de* ***xiǎo miàn tuán***$_q$
Ø$_o$ separate divide-become size same DET **little dough balls**$_q$
'Separate your dough to form a few small dough balls of the same size

(b) **Ø**$_q$ *róu-chéng yuán xíng*
Ø$_q$ knead-become round shape
knead them into a round shape

(c) **Ø**$_q$ *gàishàng shī bù huòzhě bǎoxiān mó*
Ø$_q$ cover wet cloth or cling film
then cover them with a wet cloth or cling film

(d) **Ø**$_q$ *fàngzhì hǎo 15-20 fēnzhōng*
Ø$_q$ put well 15-20 minute
and let them rest for 15-20 minutes.'

6

(C.22) 取一份面团$_q$，**Ø**$_q$ 擀成长舌状，
qǔ yī fèn ***miàntuán***$_q$ **Ø**$_q$ *gǎn-chéng cháng shé zhuàng*
get one CLF dough **Ø**$_q$ roll-become long tongue shape
'Press and roll your small dough balls to make them tongue shaped.'

7

(C.23) 然后朝一边 **Ø**$_r$ 卷起来。
ránhòu zhāo yī biān **Ø**$_r$ *juǎn qǐlái*
then towards one side **Ø**$_r$ roll up
'Then roll them up on a side'

8

(C.24) **Ø**$_s$ 放入托纸
Ø$_s$ *fàng-rù tuō zhǐ*
Ø$_s$ put-insert hold paper
'Put the rolls into the paper holders.'

9

(C.25) **Ø**$_s$ 表面用刀划一下，均匀的撒一层椰蓉
Ø$_s$ *biǎomiàn yòng dāo huà yī xià jūnyún de sā yī céng yē róng*
Ø$_s$ surface TOP use knife cut a bit evenly DET sprinkle one layer coconut shred
'Make some cuts on the surface of the rolls with the knife and sprinkle the coconut shreds evenly. '

10

(C.26) **Ø**$_s$ 入烤箱，**Ø**$_s$ 发酵至40分钟。
Ø$_s$ *rù kǎoxiāng fājiào zhì 40 fēnzhōng*

$Ø_s$ insert oven ferment until 40 minutes
'put the rolls into the oven and let them rise for 40 minutes.'

(C.27) 烤箱底部放入一碗开水，这样发酵时间更快。
kǎoxiāng dǐ bù fàng rù yī wǎn kāi shuǐ zhè yàng fāxiào
oven lower part put insert one bowl boiling water this way fermentation

shíjiān gèng kuài
time more quick
'Insert a bowl of boiling water at the bottom of the oven, so that it will rise more easily.'

(C.28) 然后 $Ø_s$进行烘烤，烤箱上下火180度烘烤20分钟
ránhòu $Ø_s$ jìnxíng hōngkǎo kǎoxiāng shàng xià huǒ 180 dù hōngkǎo 20 fēnzhōng
then $Ø_s$ execute bake oven up down fire 180 degree bake 20 minutes
'Then bake it in the oven at 180 degrees for 20 minutes'

(C.29) 每家烤箱品牌大小不一样，所设置的温度和时间也不一样哦。
měi jiā kǎoxiāng pǐnpái dàxiǎo bù yīyàng suǒ shèzhì de wēndù hé shíjiān
every home oven brand size not same NOM set DET temperature and time

yě bù yīyàng ó
also not same oh

'Every oven is different! Adjust the temperature of the oven and the cooking time depending on the features of your oven.'

(C.30) 不宜温度太高也不宜温度太低。
bù yí wēndù tài gāo yě bù yí wēndù tài dī
not suitable temperature too high also not suitable temperature too low
'The temperature should not be too high or too low.'

11
(C.31) $Ø_s$取出，成品图，来一张。
$Ø_s$ qǔ-chū chéng-pǐn tú lái yī zhāng
$Ø_s$ take-out finished-product picture come one CL
'Take out of the oven and that's finished! Here's a picture of the rolls.'

(C.32) 早餐更配哦！
zǎocān gèng pèi ó
breakfast more fit oh
'For a fantastic breakfast!'

Table 6: Cohesive devices employed in Chinese recipe

Referential devices	**Occurrence in Chinese recipe**
Full NPs repetition and synonyms	3
Other deictics	1
Pronouns	0
Co-referential deletion (zero NPs)	25
Word count	433

From table 6 we can easily observe that the Chinese recipe text makes an almost total use of zero NPs and a very limited use of other devices to achieve cohesion. In particular we can notice that resultant objects are usually mentioned once and then referred to anaphorically through co-referential deletion, that is used pervasively, even at some clausal distance. For example, in (C.9)(b), the object of the verbs *rù* 'insert' and *zhà* 'press' is *kuài* 'pieces', which is mentioned once in (C.9)(a). The use of pronouns or other deictics is not necessary as the object of the action is inferred from the context.

(C.9)

(a) 南瓜泥$_j$, 用南瓜$_k$去皮切块蒸熟，
nánguā-ní$_j$ *yòng* ***nánguā***$_k$ *qù* *pí* *qiē* *kuài* *zhēng* *shú*
pumpkin-puree$_j$ TOP use **pumpkin**$_k$ eliminate skin cut pieces steam cook
'As for the pumpkin puree, peel the pumpkin, cut in pieces and steam,

(b) 然后**Ø**$_k$入榨汁机**Ø**$_k$榨成汁$_l$,
*ránhòu***Ø**$_k$ *rù* *zhàzhījī* **Ø**$_k$ *zhà* *chéng* ***zhī***$_l$
then **Ø**$_k$ insert juicer **Ø**$_k$ press become **juice**$_l$
then put it in the juicer and juice it'

In sentences (C.10) to (C.19) we can observe instances of cross reference or ambiguous reference that must be inferred contextually. We can notice that, in sentence (C.15), two full NPs are mentioned: *miàntuán* 'dough' and *bùxiù-gāng-wǎn* 'stainless steel bowl'. At a distance of five clauses, that discussed other matters, in (C.19), the zero NP referent of the verb *gàishàng* 'cover' is ambiguous as it could both refer to the dough and to the bowl.

(C.10)

然后除黄油外所有材料$_m$放入厨师机内。
ránhòu chú huángyóu wài suǒyǒu cáiliào fàng-rù chúshījī nèi
then except butter out all ingredient put-insert mixer in
'Put all of the ingredients in the mixer except the butter.'

(C.19)
Ø$_{p/o}$盖上湿布，**Ø**$_o$发酵至两倍大，如图所示。
Ø$_{p/o}$ *gài shàng shī bù* **Ø**$_o$ *fājiào zhì liǎng bèi dà rú tú suǒ shì*
Ø$_{p/o}$ cover up wet cloth **Ø**$_o$ ferment until two times big as picture NOM show
'Cover up the bowl/dough with a wet cloth and let it rise until it doubles in volume, as shown in the picture.'

Comprehension is not hampered anyway, since the two referents are semantically related, being container and contained material, and could both be covered producing a similar result. Subsequently, in the following clause, the referent of the verb *fājiào* 'ferment' is clearer as it is possible to infer it from context and world knowledge, i.e. the dough can ferment but not the bowl. It is interesting to notice that the full NP *wǎn* 'bowl' is repeated in the first clause of (C.20), where the author feels the need to clarify the referent. The same referent is then referred to through zero NP in the following clause.

(C.20)
冬天需要将碗$_p$座入温水上面，也可以 **Ø**$_p$ 放入烤箱，烤箱最后一层放一盆开水，然后关上烤箱门，进行**Ø**$_o$发酵，这样约50分钟就可以**Ø**$_o$发酵至两倍大了。

(a) *dōngtiān xūyào jiāng* ***wǎn***$_p$ *zuò-rù wēn shuǐ shàngmiàn*
winter need PART **bowl**$_p$ sit- insert warm water above
'In the winter, you'll need to put the dough bowl into a bowl of warm water

(b) *yě kěyǐ* **Ø**$_o$ *fàng-rù kǎoxiāng*
also can **Ø**$_o$ put-insert oven
or inside the oven

(c) *kǎoxiāng zuìhòu yī céng fàng yī pén kāi shuǐ*
oven last one layer put one container boiling water
where you have placed a container full of boiling water

(d)*ránhòu guānshàng kǎoxiāng mén jìnxíng* **Ø**$_o$ *fājiào*
then close oven door execute **Ø**$_o$ fermentation
then close the oven door and leave the dough there to rise

(e) *zhè yàng yuē 50 fēnzhōng* **Ø**$_o$ *jiù kěyǐ fājiào zhì liǎng bèi dà le*
this way about 50 minutes **Ø**$_o$ indeed can ferment until two time big MOD
this way your dough will indeed have doubled in 50 minutes.'

Despite this, the verbs of the last two clauses in (C.20) and the first clause of (C.21) still refer to *miàntuán* 'dough', without clarifying the reference though a full NP, but simply counting on contextual inference and world knowledge.

Finally, It is important to notice that in some cases the referent NP is not even mentioned once. For example, the verbs in sentences (C.12) to (C.15) refer to the mixture obtained by mixing all ingredients ($\mathbf{Ø}_n$), which is never mentioned as a full NP but inferred contextually. The same happens in sentences (C.24) to (C.26) and (C.28), where all of the actions refer to the final product of the recipe, the bread rolls, which are never mentioned with a full NP, but always through zero NPs ($\mathbf{Ø}_s$).

Generally, we can observe that the Chinese recipe describes the procedure for the creation of a new object through resultative VPs,[36] but often does not specify the new resultant object through an NP. The total absence of a lexical referent might seriously hinder reading comprehension for a foreign reader, although in Chinese texts, this phenomenon frequently occurs.

> [...] zero-pronouns could appear in any grammatical slot, on the basis of coreferentiality with an antecedent that itself might be in any grammatical slot, at some distance or not even present. The fundamental strategy in the interpretation of zero-pronouns in Chinese discourse, then, is inference on the basis of pragmatic information provided by the discourse and our knowledge of the world (Li and Thompson 1979: 320).

Therefore, the use of zero NPs in Chinese cannot be explained exclusively on the basis of syntactic structural factors, but in terms of *conjoinability*, i.e. the semantic and pragmatic distance between the antecedent and the zero NP. This means that, whatever the clausal distance, the more connected two clauses are perceived to be, the more likely a zero NP will occur. Conjoinability depends on several syntactic, semantic, and pragmatic factors, including the discourse context, the speaker's interpretation of events, and the knowledge shared by the speakers of the language. According to Li and Thompson, the occurrence of zero anaphora in Chinese is so widespread that it must be regarded as the normal, unmarked situation; it is therefore the occurrence of pronouns or full NPs that must be explained as marked. Moreover, according

[36] See section 6.3 concerning the encoding of resultant object.

to the authors, there is a considerable variation among native speakers in their judgments as to where pronouns should occur, which means that the decision of using a pronoun or full NP might be somehow arbitrary and not governed by strict syntactic rules (Li and Thompson 1979). Li Wendan specifies that the use of pronouns or a repetition of a full NP in Chinese might be necessary only whenever a break in continuity is created, for example when a new object, time frame, or location is introduced (Li 2005: 48). According to Morbiato (2015), referential choices in Chinese, might also be linked to specific pragmatic phenomena and to general contextual knowledge shared by the speakers, i.e. the zero NP is comprehensible because it is coherent with the reader's knowledge and consistent with the linguistic context. As a matter of fact, in sentence (C.20), probably the author feels the need to repeat the full NP *wǎn* 'bowl' because a break in the discourse continuity occurred and the reference shifted on a different object (dough), and because not repeating it could make the sentence ambiguous. This ambiguity stems from the fact that, according to common sense, both the bowl and the dough could possibly be immersed in warm water, and the author needs to be extremely clear and prevent the reader from committing a big mistake in the procedure. Therefore, we can assume that the choice of the author to repeat a full NP or to use an unmarked zero NP, originates from her personal assessment about the clarity of her text, which stems from elements of world knowledge, contextual inference and an estimation of the reader's knowledge.

As noticed previously in the English and Italian recipes, the Chinese recipe text also features lexical imprecisions that might confuse the reader or impede full comprehension. In (C.9) we can notice the occurrence of different NPs to refer to the same object: the NP *nánguāní* 'pumpkin puree' in (C.9)(a) and (c) is expressed as *zhī* 'juice' in (C.9)(b).

(C.9)
(a) 南瓜泥$_{I}$, 用南瓜去皮切块$_{k}$蒸熟,
Nánguā-ní$_{I}$ *yòng* ***nánguā***$_{j}$ *qù* *pí* *qiē* ***kuài***$_{k}$ *zhēng* *shú*
pumpkin-puree TOP use **pumpkin**$_{j}$ eliminate skin cut **piece**$_{k}$ steam cook
'As for the pumpkin puree, peel the pumpkin, cut in pieces and steam,

(b) 然后**Ø**$_{k}$入榨汁机**Ø**$_{k}$榨成汁$_{I}$,
*ránhòu***Ø**$_{k}$ *rù* *zhàzhījī* **Ø**$_{k}$ *zhà-chéng* ***zhī***$_{I}$
then **Ø**$_{k}$ insert juicer **Ø**$_{k}$ press-become **juice**$_{I}$
then put it in the juicer and juice it,

(c) 用175克南瓜泥$_{I}$。
yòng 175 kè ***nánguā-ní***$_{I}$
use 175 grams **pumpkin-puree**$_{I}$
use 175 grams of pumpkin puree.'

On the other hand we can observe that in (C.22) the NP *miàntuán* 'dough' is preceded by the numeral phrase *yī fèn* 'one portion' and refers to a small ball of dough, mentioned in (C.21), i.e. *xiǎo miàntuán* 'small dough', and not to the entire amount of dough which is the meaning of *miàntuán* in (C.15). As noticed in English and Italian texts, we can observe that in the Chinese recipe not always the same NP refers to the same object, and not always different NPs refer to different objects. This situation increases the difficulty of comprehension and makes it necessary for the reader to activate inferencing processes.

To sum up, we can observe that Chinese recipe texts make a pervasive use of direct object deletion and a very limited use of other cohesive devices. Direct object is usually mentioned once and referred to anaphorically. We can observe a very limited use of full NPs repetition and other deictics and the absence of pronoun use. We can also observe the occurrence of cross-reference or ambiguous reference and the occurrence of missing referents, only inferrable through contextual information and world knowledge. In this respect, it is anyway appropriate to mention that recipes are instances of procedural metadiscourse (Chen 2016), which usually employ textual and visual devices to enhance readability. Therefore, although the full NP describing the resultant object is missing in the text, it is likely that the reader still achieves full comprehension by observing the pictures. In lexical terms, we can notice irregularities, where the same item is referred to with different NPs and different items are referred to through the use of the same noun.

5.1.8 Textual cohesion: comparative remarks

Comparing the three recipe texts, we can notice that the cohesive structure of the Chinese text is very different to the English and Italian texts. While in English and Italian, direct object deletion is a phenomenon limited to traditional procedural discourse, i.e. cookbook recipes, for Chinese is the normal, unmarked cohesive choice. Therefore, in Italian and English blog recipes, direct object deletion is used limitately, while

in Chinese it is used ubiquitously. On the other hand, English and Italian make use of other cohesive devices, namely full NP repetition, pronouns, and other deictics. Italian also counts on clitic pronouns and verbal agreement in genre and number to track reference. Chinese doesn't make use of verbal agreement or pronouns and uses other deictics and full NP repetition very limitately, only whenever the author feels the need to clarify the reference. This leads us to discuss more in detail an important factor influencing textual readability and comprehension: pragmatic inference.

5.1.9 Linguistic structure and inferential processes

As mentioned above, the Chinese text, making a vast use of zero NPs, forces the reader to activate inferential processes for comprehension. This characteristic, that is common in South East Asian languages, is referred to as *hidden complexity* (Bisang 2009). Languages and their structures differ in the ways and means the information is articulated in the linguistic linear pattern. Some languages feature a structural complexity (referred to as *overt complexity*), which reflects explicitness, might entail the need of verbal and pronominal agreement, overt specification of verbal arguments and referent, among other devices employed for optimal comprehension. Other languages, instead, feature hidden complexity, which reflect economy and entails a vast use of non-specified arguments that need to be inferred pragmatically for comprehension. European languages can be categorized as featuring overt complexity. English, for example, being a non-pro-drop language, must have the subject and object slot always filled with an NP or pronoun (with the exception of procedural discourse). Italian, as other Romance languages, is pro-drop, but reference can be traced thanks to verbal agreement. South-East Asian languages, like Chinese, do not make use of verbal agreement and do not need overtly specified verbal arguments to function. Therefore, although the phrasal pattern, presenting fewer grammatical elements looks "economical" externally, it is actually internally complex (Bisang 2009). As noticed in the reference tracking of the Chinese recipe text, the assignment of coreference in languages featuring hidden complexity is not merely determined by

syntactic aspects, but also by pragmatic and semantic variables. Tao (2001:253) correlates the Gricean continuum of reference presentation and linguistic economy with a reference forms continuum.

Figure 3. The Gricean continuum and the Inference continuum.

A. Gricean Principle in reference presentation (the Gricean Continuum)
Clarity Switch-reference..Logophoricity..Gender/animacy..Zero Anaphora Economy
<----------->

B. Interference in reference-tracking (the Inference Continuum)
Switch-reference > Logophoricity > Gender/animacy > Zero Anaphora Inference
---------->

Romance languages, like Italian, which can count on explicit referential means, can be collocated on the left of the continuum, while languages like Chinese are placed on the opposite side. This phenomenon presents consequences in terms of cognitive strategies the speakers of the languages adopt to interpret coreference. Italian and English speakers refer especially to explicit morphological and syntactic aspects to interpret coreference, while Chinese speakers expect to rely more on pragmatic inference (Tao L. 2001: 253-265). According to psycholinguistic studies, speakers of languages which adopt zero anaphora as the main cohesive mean tend to develop superior inferential abilities (Morbiato 2015: 97). According to Morbiato, (2015), non specification of arguments in Chinese, not only represents the neutral, unmarked referential choice, but it also codifies several other functions, among which thematic continuity and progression. The next section will focus on thematic progression, observing and comparing the textual structures of the three recipe texts.

5.2 Thematic progression in recipe texts

Thematic progression is defined as the relationship and concatenation of the sentences in a text, that make it cohesive and coherent (Morbiato 2020b). Thematic progression is needed to create communicative dynamism in the text and is realized through the succession and concatenation of the topic and the comment. The topic expresses known information and is low in saliency, while the comment contains the focus of the sentence and is high in saliency and communicative dynamism. Topic and comment are both

discourse organization units, and do not necessarily appear in each sentence. Two different types of thematic progression are distinguished. In a parallel thematic progression, the topic is mentioned once at the beginning of the text and referred to throughout it using cohesive devices or zero anaphora, while the comment represents the body of the text and adds new information about the topic. In a linear thematic progression, on the other hand, the comment of one sentence becomes the topic of the next sentence, so that the new salient information of the first sentence becomes known information in the sentence that follows (Morbiato 2020b: 34-35).

We can generally notice that thematic progression in recipes can be thought of as a concatenation of subject-less verb phrases that describe a procedure transforming objects until the final result is achieved. Therefore, we propose that in each verb phrase the topic should be represented by the object that is transformed, or patient (Object 1), and the comment should be represented by the VP that describes the action transforming it (Action 1) and by the object resulting from Action 1 (Object 2). This resultant object (Object 2) becomes then the topic or patient of the second VP, as described in table 7 below. In this way the text creates a coherent chain of information and acquires cohesion. As discussed previously, easily inferrable information is not mentioned, therefore both the patient (Object 1) and result of the transformation (Object 2) are sometimes left unspecified, especially in languages which make a big use of zero NPs, like Chinese. The verb itself, on the other hand, is the most important and salient part of the text, and it is never omitted.

Below a schematic representation of thematic progression in recipe texts.

Table 7: Thematic progression in recipe texts

	TOPIC	COMMENT
VP 1: VP 2:	Object 1 Object 2	Action 1----------(Object 2) Action 2 ----------(Object 3)

VP 3:	Object 3	Action 3----------(Object 4)

In the next sections, we will see how recipe texts are organized in terms of thematic progression and information structure. Three example sentences from each of the three texts will be compared.

5.2.1 Thematic progression : English recipe text

VP1: (E.36) *Start by dissolving the yeast in warm water and a pinch of sugar in your mixing bowl.*

Patient (Object 1): Yeast/sugar/warm water

Action 1: dissolve (mix)----------Resultant object (Object 2): Yeast mixture

VP2: (E.37) *Allow the yeast to sit for about 5 minutes until it's foamy.*

Patient (Object 2): yeast mixture

Action 2: allow to sit----------Resultant object (Object 3): foamy yeast mixture

VP3: (E.39) *Next, you'll want to add the remaining brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter to the bowl.*

Patient (Object 3): foamy yeast mixture, brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter.

Action 3: add (mix)----------Resultant object (Object 4): mixture

5.2.2 Thematic progression : Italian recipe text

VP1[37]:

(I.1) (a)*Prendete una zucca non molto grande, lavate bene la buccia,*
take a pumpkin not very big wash well the skin
'Take a medium size pumpkin, wash the skin very well,

Patient (Object 1): pumpkin

Action 1: wash skin----------Resultant object (Object 2): clean pumpkin

VP2:

(b)tagliar-la a grosse fette[…]
cut-it in big slice
'cut it in large slices[…]

Patient (Object 2): clean pumpkin

Action 2: cut in large slices----------Resultant object (Object 3): big pumpkin slices

VP3:

[…]*e cuocer-le in una pentola con un dito d'acqua*
and cook-them in a pan with a finger of water
[…]and cook them in pan with a little water'

Patient (Object 3): big pumpkin slices/ water

Action 3: cook----------Resultant object (Object 4): cooked slices

5.2.3 Thematic progression : Chinese recipe text

VP1:

(C.9)(a) 南瓜泥，用南瓜去皮
Nánguā-ní yòng nánguā qù pí
pumpkin-puree TOP use pumpkin eliminate skin

[37] The first VP,*prendete una zucca non troppo grande* 'take a medium-size pumpkin' is considered null, since the ingredient has already been listed, it is only descriptive, and no real transformation occurs. Therefore, we will consider *lavate bene la buccia* 'wash the skin very well' as the first real VP describing the procedure.

‘As for the pumpkin puree, peel the pumpkin,

Patient (Object 1): pumpkin

Action 1: cut skin----------Resultant object (Object 2): peeled pumpkin

VP2:

[…]切块
[…]*qiē kuài*
cut pieces
[…]cut in pieces

Patient (Object 2): peeled pumpkin

Action 2: cut in pieces----------Resultant object (Object 3): pumpkin pieces

VP3:

[…]蒸熟
[…]*zhēng shú*
steam cook
[…]and steam

Patient (Object 3): pumpkin pieces

Action 3: steam cook----------Resultant object (Object 4): steamed pumpkin pieces

5.2.4 Recipe texts thematic progression: comparative remarks

We can notice that the information structure and thematic progression of the text is similar in all languages in semantic terms, but it is syntactically very different. While in English and Italian each action is expressed in a clause or sentence, Chinese might list several actions in the same clause through resultative VPs composed of only a couple of characters/syllables. To account for this syntactic difference, in chapter 6, a thorough discussion of VPs expressing resultant object in the three languages will be carried out. To provide a better understanding of Chinese textual features, in the next section, another important aspect of information structure in Chinese texts will be discussed: topic and topic chains.

5.3 Topic as a frame and topic chains in Chinese recipe texts

The sequence of utterances in a text that refers to the same element is named topic chain. The main referent, or discourse topic, is the head of the chain, and the information about the referent or comment represents the links (Morbiato 2020b). Chinese has been defined as a *topic prominent language* (Li and Thompson 1981 inter alia), since the topic, and not the subject, is the main element around which the sentence is organized. English, on the other hand, has been defined as a subject prominent language, as the subject slot, in the preverbal position, is always filled in, and the subject is always necessary in the sentence. Li Wendan (2005) in his study of topic and topic chains in Chinese language, affirms that the topic in Chinese represents a functional unit, more than a structural unit. Topics can cross sentential boundaries and constitute a discourse organizational unit. Therefore a topic chain in Chinese can correspond to more than one English sentence (2005: 43). A perfect example of this claim can be found in (C.9)(a) and (b), where the discourse topic *Nánguāní* (pumpkin puree) precedes a list of VPs describing the procedure for its preparation. As can be noticed, translating it in English, the sentence structure changes, the same Chinese sentence can be rendered in English with three sentences.

(C.9)

(a) 南瓜泥$_j$, 用南瓜$_k$去皮切块蒸熟，
nánguā-ní$_j$ *yòng* ***nánguā***$_k$ *qù* *pí* *qiē* *kuài* *zhēng* *shú*
pumpkin-puree$_j$ TOP use **pumpkin**$_k$ eliminate skin cut piece steam cook
'As for the pumpkin puree, peel the pumpkin, cut in pieces and steam,

(b) 然后**Ø**$_k$入榨汁机**Ø**$_k$榨成汁$_l$,
ránhòu **Ø**$_k$ *rù* *zhàzhījī* **Ø**$_k$ *zhà-chéng* ***zhī***$_l$
then **Ø**$_k$ insert juicer **Ø**$_k$ press -become **juice**$_l$
then put it in the juicer and juice it,

(c) 用175克南瓜泥$_l$。
yòng 175 kè ***nánguā-ní***$_l$
use 175 grams **pumpkin-puree**$_j$
use 175 grams of pumpkin puree.'

'As for the pumpkin puree, peel the pumpkin, cut it into pieces and steam. Then put it in the juicer and juice it. Use 175 grams of pumpkin puree.'

Discourse topic in Chinese is said to have control properties over the predication that follows it in terms of aboutness, but it has also been defined by linguists as a frame topic, i.e. a topic providing the spatial, temporal, and individual frame within which the proposition holds true. Other scholars defined this type of discourse topic as range topic, which delimits the range of a variable of which the predication is made (Morbiato 2020a: 311). Therefore, although expressed as a simple NP, the topic in this case has the function of defining the scope and meaning of all that follows. It is important to notice that in English and Italian the use of a simple NP in this position and with this function would not be considered grammatical.

In (C.9)(a) and (b) we can notice that the three VPs following the object *nánguā* 'pumpkin' and the clause that follows all refer to it without mentioning it. This is a case of *preposed patient* topic chain (Li 2005:96), which features a preverbal patient, the sentence topic, that is mentioned once at the beginning and then referred to through zero NPs, since it is considered known information. According to Li Wendan, several different topic chain structures can occur simultaneously in the same sentence and their scope and domains might overlap to create extended discourse (Li 2005: 109). We can notice this phenomenon occurring in (C.9), where we can observe two different layers of topic comment structures: a discourse topic, *nánguāní* 'pumpkin puree', that functions as a frame, containing all the discourse that follows, that is (C.9)(a), (b), and (c), and a sentential topic, *nánguā* 'pumpkin', that forms a preposed patient topic chain in (C.9)(a) and (b). This type of topic chain is extremely common in Chinese recipe texts. An example can be found in (C.10) to (C.14). The preverbal object, *suǒyǒu cáiliào* 'all the ingredients', is referred to in (C.11) through a zero NP. In (C.12) to (C.14) the reference is still linked to that object, just slightly modified by adding butter. Therefore, the sentences (C.10) to (C.14) form the same cross sentential topic chain (Li 2005: 72).

(C.10) 然后除黄油外所有材料$_m$放入厨师机内。

ránhòu	*chú*	*huángyóu*	*wài*	*suǒyǒu*	*cáiliào*	*fàng-rù*	*chúshījī*	*nèi*
then	except	butter	out	all	ingredient	put-insert	mixer	in

'Put all of the ingredients in the mixer except the butter.'

(C.11) 启动搅拌程序然后$Ø_m$搅拌5分钟。
qǐdòng jiǎobàn chéngxù ránhòu $Ø_m$ *jiǎobàn 5 fēnzhōng*
activate mixing program then $Ø_m$ mix 5 minute
'Activate the mixing program and mix for 5 minutes.'

(C.12) 加入黄油，在继续启动搅拌程序，$Ø_n$搅拌5分钟。
jiā-rù huángyóu zài jìxù qǐdòng jiǎobàn chéngxù $Ø_n$ *jiǎobàn 5 fēnzhōng*
add-insert butter again continue activate mixing program $Ø_n$ mix 5 minute
'Insert the butter and continue mixing for 5 minutes.'

(C.13)$Ø_n$手揉也可以。
$Ø_n$ *shǒu róu yě kěyǐ*
$Ø_n$ hand knead also can
'You can also knead the mixture by hand.'

(C.14) $Ø_n$能拉出膜即可。
$Ø_n$ *néng lā chū mó jíkě*
$Ø_n$ can pull out film sufficient
'The mixture will be ready when you'll be able to pull it out as a film without breaking it.'

Another topic chain pattern commonly seen in Chinese recipes is the *patient-patient topic chain* (Li 2005: 93), which features a post verbal object referred to through zero NPs in the following clauses. A good example of this pattern can be found in (C.21), where the object *xiǎo miàntuán* 'little dough balls' is mentioned post verbally as resultant object in (C.21) (a) and then referred to in a preverbal position through zero NPs in (C.21)(b), (c),and (d).

(C.21) $Ø_o$分别分成大小一样的小面团$_q$，$Ø_q$揉成圆形，$Ø_q$盖上湿布或者保鲜膜，$Ø_q$放置好15-20分钟。
(a) $Ø_o$ *fēnbié fēn-chéng dàxiǎo yīyàng de* ***xiǎo miàn tuán***$_q$
$Ø_o$ separate divide-become size same DET **little dough ball**$_q$
'Separate your dough to form a few small dough balls of the same size,

(b) $Ø_q$ *róu chéng yuán xíng,*
$Ø_q$ knead become round shape
knead them into a round shape,

(c) $Ø_q$ *gàishàng shī bù huòzhě bǎoxiān mó,*
$Ø_q$ cover wet cloth or cling film
then cover them with a wet cloth or cling film,

(d) $Ø_q$ *fàngzhì hǎo 15-20 fēnzhōng.*
put $Ø_q$ well 15-20 minutes
and let them rest for 15-20 minutes.'

As the *preposed patient* topic chain, this pattern is particularly suited to describe a set of actions that create a procedure. Different topic chains, in fact, not only differ in structure, but also in the functions they fulfill in discourse organization. Moreover, more topic chain structures can be combined for specific purposes (Li 2005: 121).

As mentioned in section 5.1.7, in Chinese recipes, not always zero NPs are referred to the last full NP mentioned in the text and the reference can be ambiguous or discontinuous. According to Li Wendan, this phenomenon is due to the properties of topic chains of being discontinuous, crossing not only sentence, but also paragraph boundaries (Li 2005:76).

Summing up, Chinese recipe texts feature a large use of topic chain structures that help the text reach cohesion and coherence. The most common patterns found in recipe texts are the *preposed patient* pattern and the *patient-patient* pattern. In chapter 6 we will see how these structures are functional to the linguistic encoding of resultant objects and location. Moreover, the topic can also act as a semantic frame that defines the scope of the following predication.

In the next chapter, the three main linguistic functions carried out by recipe texts will be discussed. The linguistic encoding of temporal sequence of actions, of resultant location and resultant object will be analyzed in each recipe text.

CHAPTER 6

ENCODING TEMPORAL SEQUENCE OF ACTIONS, RESULTANT OBJECT AND LOCATION

6.1 Encoding temporal sequence of actions

As mentioned in chapter 2, recipe texts can essentially be defined as procedural lists of subject-less, imperative verb phrases that express instructions to be carried out following their sequence, in order to reach a goal, that is, prepare a dish. As Haiman (1980) theorized, the encoding of sequence of events is the clearest example of iconic motivation in language. Therefore, we can affirm that the main device used by all languages to encode temporal sequence in recipe texts is the listing of verb phrases indicating the actions to be carried out. Nonetheless, as mentioned in section 5.2.4, there's a syntactic difference between the three languages. In Italian and English, each action is usually encoded in a different clause or sentence, unless two actions are combined in the same clause through the coordinating conjunction *and*.

(E.29) *Let the pumpkin cool and then scoop the meat out into a blender*

(I.10) (b)*tagliar-la a grosse fette e cuocer-le in una pentola con un dito d' acqua*
cut-it in big slices and cook-them in a pan with a finger of water
'cut it in large slices and cook them in pan with a little water'

In Chinese, lists of VP describing sets of actions might appear in the same clause or sentence and the use of coordinating conjunctions to express sequentiality is not required. In fact, in Chinese, whenever semantically inferrable from context, no clause connectives are used. Therefore the borderline between coordination and subordination is blurred. This is mainly due to the presence of discourse structural factors, like the use of discourse topics or topic chains[38](Li 2005: 50).

(C.9) (a) 南瓜泥，用南瓜去皮切块蒸熟，
nánguā-ní yòng nánguā qù pí qiē kuài zhēng shú,
pumpkin-puree TOP use pumpkin eliminate skin cut piece steam cook
'As for the pumpkin puree, peel the pumpkin, cut in pieces and steam,

[38] See chapter 5.

To express sequentiality of actions, Italian and English also make use of tense and mood inflection in the form of consecutio temporum. Therefore, although most of the actions are expressed in the infinitive or imperative, verbs conjugated in the indicative future simple, present perfect or past participle create a sense of time sequence in the clauses. Time adverbials or conjunctions like *then*, *once*, *when*, and *until* are often used in combination with consecutio temporum agreement to emphasize sequentiality.

(E.43) *Once the dough comes together and is slightly sticky to the touch, you'll know it's ready.*

(I.16) *Quando sarà incordato aggiungete a filo l' olio di soia,*
When be.**FUT.3SG** blended add at thread the oil of soy
'When the dough will be blended, add some soy oil slowly'

(a)impastate fino a che l' impasto non sarà omogeneo, liscio ed elastico.
knead until the dough NEG be.**FUT.3SG** homogeneous smooth and elastic
'Knead until the dough becomes homogeneous, smooth and elastic.'

Chinese as a typologically isolating language does not feature tense and mood agreement but makes use of time adverbials in combination with listing to express sequentiality.

(C.23) 然后朝一边卷起来。
ránhòu zhāo yī biān juǎn-qǐlái
then towards one side roll-up
'Then roll them up on a side'

(C.19) 盖上湿布，发酵至两倍大，如图所示。
gài-shàng shī bù fājiào zhì liǎng bèi dà rú tú suǒ shì
cover-up wet cloth ferment until two times big as picture NOM show
'Cover up the bowl with a wet cloth and let it rise until it doubles in volume, as shown in the picture.'

To sum up, to encode a sequence of actions, recipe texts in English, Italian, and Chinese (among other languages) mainly rely on iconically listing subject-less imperative VPs in sequence. English and Italian also rely on coordination and consecutio temporum tense and mood agreement in combination with time adverbials to express sequentiality. Chinese, on the other hand, doesn't make use of tense or mood agreement but uses time adverbials in combination with listing.

6.2 Encoding resultant location

As discussed in chapter 2, modern recipes feature detailed procedures of actions including details about the location, external to the patient/object, where the action or the process that causes the patient to change should take place, i.e. *resultant location.* The idea that an agent causes a theme argument to move to a new location/goal is expressed through a specific linguistic pattern, named by Goldberg (1995) *caused-motion construction*. In the next section the features and constraints of the caused-motion construction will be discussed.

6.2.1 The caused motion construction

As mentioned, the basic semantics of the caused-motion construction is that the causer argument directly causes the theme argument to move along a path reaching a goal. This path is designated by the directional phrase usually introduced by a locative preposition (Goldberg 1995: 152).

<u>Caused motion construction: X causes Y to move Z</u>

Agent (X) causes Patient (Y) to move to Goal (Z)

Sem	CAUSE-MOVE	〈 cause	goal	theme 〉
	↓	↓	↓	↓
Syn	V	SUBJ(X)	OBLpp(Z)	OBJ(Y)

Goldberg (1995) points out that the existence of the caused-motion construction as an independent construction is demonstrated by the fact that its semantics is not compositionally derived, but it is derived from the semantics of the construction itself. For convenience, in this research we will refer to the theme argument as Patient.

The word order of the construction in English can be represented as follows:

[SUBJ [V OBJ OBL]]

The verb must be non-stative and the oblique must be a directional phrase. This construction, besides sentences featuring verbs that semantically code caused-motion like *put*, is also meant to account for the following types of expressions (Goldberg 1995:152):

(4) *They laughed the poor guy out of the room*

(5) *Mary urged Bill into the house.*

(6) *They sprayed the paint onto the wall*

Observing the examples above, we can notice that neither the verbs nor the locative phrases inherently encode caused-motion semantics, yet when combined in the construction, the pattern is understood as caused-motion. For example, in (4) *the poor guy* is understood to move out of the room as a result of shame produced by the laughing. Moreover, several verbs that can be used in this construction do not take direct object, for example *laughed*. Therefore, since the caused-motion interpretation cannot be attributed to any of the elements of the expression and cannot be derived compositionally, the caused-motion interpretation is attributed to a specific construction, which combining an action and a PP coding a directional phrase, creates an original, conventionalized interpretation. To account for the directional reading of a simple locative phrase, Goldberg argues for a phenomenon of *coercion* or *accommodation* by the construction, giving the locative phrase a directional interpretation. Therefore, the location encoded by the locative phrase acquires a meaning of endpoint focus, i.e. the endpoint of the path designated by the locative phrase. The verbs, on the other hand, although not lexically coding motion, acquire a motion interpretation (Goldberg 1995: 159).

Change of state verbs, often appearing in recipes, like *slice* or *grate*, feature among the verbs acquiring motion sense if employed in a caused-motion construction (Goldberg 1995: 171) :

(7) *The butcher sliced the salami onto the wax paper*

(8) *Joey clumped his potatoes into the middle of his plate*

(9) *Joey grated the cheese onto a serving plate*

(10) *Sam shredded the papers into the garbage pail*

According to Goldberg, this interpretation is due to the fact that the action, denoted by each of the verbs above, conventionally implies a sense of predictable incidental motion, independently of the locative phrase. For example, the action of grating semantically implies that the grated part of the cheese moves away from its original location into a new location. Therefore, the locative phrase is allowed semantically because it specifies the path of this incidental motion. Moreover, the motion to an endpoint location should be caused intentionally and completely determined by the causal force. To summarize, Goldberg (1995) argues that:

> If the verb is a change-of-state verb (or a verb of effect), such that the activity causing a change of state (or effect), when performed in a conventional way, effects some incidental motion and, moreover is performed with the *intention* of causing the motion, the path of motion may be specified. The path of motion must be completely determined by the action denoted by the verb (Goldberg 1995: 174).

To sum up, caused-motion construction encodes the idea that an agent causes a theme argument to move along a path and reach a goal determined by a locative phrase that acquires a directional meaning. The construction encodes the meaning of motion even if instantiated by verbs other than motion verbs, including for example change of state verbs as found on recipe texts. The caused-motion interpretation is given in this case by the pragmatic situational knowledge of the act as incidental motion of the object, directly and intentionally caused by the agent.

In fact, to account for the nature of the constraints on direct causation, Goldberg argues that the constraints do not only rely on semantics or syntactic principles, but require access to contextual information, situational knowledge, and general world knowledge (Goldberg 1995: 175). As mentioned in

chapter 2 and 5, this is especially the case of technical, specialized texts like recipes, where inference, stemming from pragmatic world knowledge, plays a crucial part in argument structure comprehension.

In the next sections the encoding of resultant location will be discussed in the three recipes part of the corpus. Since recipes often present agent-less sentences the caused motion patterns will be noted as follows: Cause Patient (Y) to move to Goal (Z).

6.2.2 Encoding the resultant location: English

In recipes, we can notice that resultant location is encoded through the use of the caused-motion construction, instantiated both by motion verbs like *put* and by change of state verbs.

(E.5) *When they're all clean, put them face down on a baking sheet*[…]

(E.8) […]*and then scoop the meat out into a blender.*

(E.13) […]*you can drain it in a colander set over a pot.*

(E.36) *Start by dissolving the yeast in warm water and a pinch of sugar in your mixing bowl.*

(E.39) *Next, you'll want to add the remaining brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter to the bowl.*

(E.41) *Slowly Add Flour – You will only want to stir in 2 cups of flour to start.*

(E.46) *Rise Up – When smooth, place the dough into a greased bowl and let it rise for an hour.*

(E.49) […]*place them on your prepared baking sheet.*

(E.69) *In a large bowl or the bowl of a stand mixer, dissolve the yeast in the warm water with a pinch of brown sugar.*

As we can observe, the majority of sentences encoding resultant location, contain verbs that lexically encode motion as in (E.49). This agent-less sentence is composed of a verb encoding motion, an object coded through an object pronoun, and a directional phrase (DP hereinafter), introduced by the preposition *on*. The DP encodes the resultant location where the object needs to be placed.

(E.49) […]*place them on your prepared baking sheet*

Cause Patient (Y) to move to Goal (Z)

V(place) + Obj + DP

Besides verbs lexically coding motion, we can also observe that many sentences, or clauses, introducing resultant location also contain change of state verbs, as in (E.13).

(E.13)[…]*you can drain it in a colander set over a pot.*

Cause Patient (Y) to move to Goal (Z)

V(drain) + Obj + DP

As discussed in the previous section, the verb *drain*, which doesn't code cause-motion independently, in this construction acquires a perfectly understandable directional meaning, as general knowledge suggests that, when this action is carried out, part of the object is detached from its previous location. As we can observe in (11), the sentence could work perfectly even without a directional phrase, but the author prefers adding locative details for clarity and convenience.

(11) […]*you can drain it..*

The caused-motion construction, therefore, provides a change of state action the possibility to become a directional action. It is also worth noticing that sentences containing the verb *add* or *stir in* do not always contain DPs. For example (E.39) specifies the resultant location, *the bowl,* but (E.41) doesn't mention it, since probably the author feels the location is easily inferrable from the context. Although not specifying endpoint location, these sentences might still be considered directional, as they code the movement of an object along a path to an endpoint location.

(E.39) *Next, you'll want to add the remaining brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter to the bowl.*

(E.41) *Slowly Add Flour – You will only want to stir in 2 cups of flour to start.*

In (E.69) we can notice how the word order of the caused-motion construction changes as the resultant location is introduced in preverbal position.

(E.69) *In a large bowl or the bowl of a stand mixer, dissolve the yeast in the warm water with a pinch of brown sugar.*

Cause Patient (Y) to move to Goal (Z)

DP + V(dissolve) + Obj

This idiosyncrasy, similarly to null objects, might be accounted for in terms of textual genres, i.e. recipe texts allow the resultant location to be placed in preverbal position and the sentence to be considered acceptable. In (E.69), we can also notice how a seemingly 'secondary' resultant location is introduced after the verb.

[…] *in the warm water with a pinch of brown sugar.*

We propose that this post verbal PP should be considered a secondary DP, as what it specifies is the order the ingredients should be mixed, and not where they should be mixed, which is the endpoint location. We believe that this should be considered part of the patient/object, composed of a mixture which includes warm water, a pinch of sugar and finally yeast. It is still true nonetheless that the clause encodes a path of motion for one of the ingredients. Therefore, this clause might be considered a secondary DP (DP2), while the preverbal DP should be considered the primary one (DP1) as noted below.

(E.69) *In a large bowl or the bowl of a stand mixer, dissolve the yeast in the warm water with a pinch of brown sugar.*

Cause Patient (Y) to move to Goal (Z)

DP1 + V(dissolve) + Obj [yeast [DP2 warm water/sugar]]

It is important to notice how these complex sentences can be understood, relying on inference and world knowledge more than on syntax.

The fact that the DP is placed in a preverbal position might be explained in terms of pragmatics and information structure, as in that position the DP functions as a locative topic framing the following predication (Morbiato 2020b). In (E.36), however, the same sentence is expressed with a 'normal' postverbal DP, which suggests that a certain degree of arbitrariness is allowed in this context.

(E.36) *Start by dissolving the yeast in warm water and a pinch of sugar in your mixing bowl.*

To summarize, in the English recipe, resultant location is expressed through a caused motion construction presenting a V + Obj + DP word order, although the DP might occasionally be placed in a preverbal position, possibly for pragmatic reasons. Resultant object is not only coded using verbs lexically encoding motion, but also through change of state verbs that acquire a caused-motion meaning in combination with a DP in the caused-motion construction. Sentences including verbs like *add* or *stir in* might not specify resultant location but should still be considered directional sentences. Location might not be mentioned in the same predication when easily inferable from the context. Complex sentences might contain secondary DPs that semantically encode the motion of part of the patient being added to the rest of the patient and not the endpoint location. Therefore, secondary DPs should be considered part of the object and noted accordingly.

6.2.2 Encoding the resultant location: Italian

In the Italian recipe, resultant location is encoded very similarly to English, through a caused-motion construction instantiated by both verbs lexically coding motion, and by change of state verbs. Nonetheless, we can notice important differences in syntax. Below are some examples of sentences coding resultant location in the Italian recipe.

(I.10) (b)*tagliar-la a grosse fette e cuocer-le in una pentola con un dito d' acqua*
cut-it in big slices and cook-them in a pan with a finger of water
'cut it in large slices and cook them in pan with a little water'

(c) *o metter-le in forno (avvolta in un pezzo di stagnola) per 30 minuti.*
or put-them in oven wrapped in a piece of tinfoil for 30 minutes
'or put them in the oven (wrapped in a piece of tinfoil) for 30 minutes'

(I.13) *Potete impastare comodamente a mano in una ciotola o con impastatrice o*
can knead comfortably by hand in a bowl or with kneading machine or
planetaria
mixer
'You can knead comfortably by hand in a bowl, using a kneading machine or a mixer'

(I.14)(a)*Mettete in una ciotola il quantitativo di polpa di zucca (120gr),*
put in a bowl the quantity of pulp of pumpkin 120 gr
'Put 120 grams of pumpkin puree in the bowl'

(b) *la Pasta Madre (a pezzetti), lo zucchero e parte dell' acqua (es. 100 gr).*
the sourdough in pieces the sugar and part of-the water ex. 100 gr
'the sourdough cut in pieces, the sugar and part of the water (for example 100 grams)'

(I.15)(a) *Aggiungete la farina e gradualmente inserite la restante acqua*
add the flour and gradually insert the remaining water
'Add the flour and gradually insert the remaining water'

(I.19) (a)*Tolto dal frigo fate tornare a temperatura ambiente per un' ora,*
Remove from-the fridge let return at temperature room for one hour
'Remove the dough from the fridge and let it warm up to room temperature for one hour'

As in English, most commonly, directional sentences in Italian are encoded through the use of motion verbs like *mettere* 'put', as in the examples below. Nonetheless, the word order differs, since the DP can be placed either before or after the object. In (1.10) the DP is placed after the object while in (I.14) the DP is placed before the object.

(I.10) (c) *o metter-le in forno* […]
or put-them in oven
'or put them in the oven[…]

Cause Patient (Y) to move to Goal (Z)

V(put) + Obj + DP(in)

(I.14)(a)*Mettete in una ciotola il quantitativo di polpa di zucca (120gr),*
put in a bowl the quantity of pulp of pumpkin 120 grams
'Put in the bowl the pumpkin puree (120 gr)'

(b)*la Pasta Madre (a pezzetti), lo zucchero e parte dell' acqua (es. 100 gr),*
the sourdough in pieces the sugar and part of-the water ex 100 grams
'the sourdough cut in pieces, the sugar and part of the water (for example 100 grams)'

Cause Patient (Y) to move to Goal (Z)

V(put) + DP + Obj

This can be accounted for in terms of the nature of the object. As noticeable in (I.10), *short* objects composed of a clitic pronoun or of a brief NP can fit in post-verbal position, before the DP. On the other hand, long objects composed of a list of NPs, as in (I.14) are not usually placed post-verbally but after the DP.

As we have seen in the English recipe, some of the sentences encoding resultant location do not employ verbs lexically coding motion, but change of state verbs as *cook* in (I.10)

(I.10) (b)[…] *cuocer-le in una pentola con un dito d' acqua*
cook-them in a pan with a finger of water
[…]cook them in a pan with a little water'

It is interesting to notice that the verb *cook*, like other verbs of its semantic field like *fry*, differently to verbs like *slice* or *grate*, does not semantically entail that a part of the patient is detached and moves incidentally to another location (Goldberg 1995:174), but it entails that the change of state must happen through a process, allowed by a special instrument or set of instruments in a special location. Nonetheless, the author

does not feel the need to specify that the patient needs to be placed inside the instrument before the process can start, as the construction provides this added meaning and the idea is inferred through pragmatic situational knowledge.

In the Italian recipe we can also notice the appearance of clauses that code a change in location but do not mention the resultant location.

(I.19) (a)*Tolto dal frigo fate tornare a temperatura ambiente per un' ora,*
remove from-the fridge let return at temperature room for one hour
'Remove the dough from the fridge and let it warm up to room temperature for one hour,'

In (I.19)(a), for example, in the clause *tolto dal frigo,* the verb *remove* is conjugated in the past participle and followed by a PP coding movement from a location. Although clearly expresses a change in location, this clause leaves the resultant location unmentioned, since the author does not need to specify a particular location, and the reader, through contextual knowledge, can easily infer the information. As mentioned in section 6.1, Italian makes use of tense and mood inflection to express sequentiality, therefore the first clause of (I.19)(a), through the verb conjugation, doesn't only express motion, but also sequentiality.

Another common feature of the Italian recipe, when expressing resultant location, is the appearance of a time duration phrase (TP) which expresses the duration of the state resulting from the action as in (I.10)(c):

(c) *o metter-le in forno (avvolta in un pezzo di stagnola) per 30 minuti.*
or put-them in oven wrapped in a piece of tinfoil for 30 minute
'or put them in the oven (wrapped in a piece of tinfoil) for 30 minutes'.

This feature will be discussed in comparative terms in 6.3, when covering the encoding of resultant objects.

To summarize, as in English, in the Italian recipe, resultant location is encoded through the caused-motion construction, but the word order may differ as, depending on the nature and size of the object, it might be placed either before or after the DP. As in English, in the Italian recipe some sentences encoding resultant location might be instantiated by verbs not coding motion but change of state. The verb *cook*, like other

change of state verbs, might appear combined to a locative PP, possibly because it conveys the idea that the action must take place in a specific location, where it is inferred that the patient has previously been moved to. In Italian, clauses expressed by verbs in the past participle and a locative PP might express sequentiality and motion, but not necessarily express resultant location if inferable from the context.

6.2.3 Encoding the resultant location: Chinese

As discussed in section 5.3, Chinese recipe texts feature a large use of *preposed-patient* and *patient-patient* topic chains to encode procedural lists of actions. These structures place the patient in a preverbal position and, as we have seen, often leave it unmentioned as known, inferrable information. As Morbiato (2020b:54) affirms, the reason why the patient is placed in the preverbal position and not in the postverbal position, as one would expect in a SVO language, is that the postverbal slot is the focal part of the Chinese sentence, the part which holds the highest communicative dynamism. In recipes, the focus of the sentence is the object resulting from the transformation or the location where the object needs to be placed. For this reason, the element representing the resultant object or the resultant location will always be placed post verbally. The patient, on the other hand, is located preverbally with the function of *preposed topic* and very often left unmentioned in recipes.[39]

Therefore, differently to English and Italian, the word order of the Chinese *caused-motion construction* is [Obj + V + DP] as in (C.10) below. Obviously the semantic encoding of the sentence remains valid since the difference is purely syntactic.

(C.10) 然后除黄油外所有材料放入厨师机内。

ránhòu	*chú*	*huángyóu*	*wài*	*suǒyǒu*	*cáiliào*	*fàng*	*rù*	*chúshījī*	*nèi*
then	except	butter	out	all	ingredient	put	insert	mixer	in.

'Then put all of the ingredients in the mixer except the butter.'

Cause Patient (Y) to move to Goal (Z)

[39] For a complete account on the Chinese preposed object, see Paul (2002).

Obj + V(put-insert) + DP(in)

Below are listed other examples of sentences encoding resultant location. As noticeable, most of them leave the patient unmentioned, as discussed in section 5.1.7 .

(C.9)(b) 然后入榨汁机榨成汁,

ránhòu rù zhàzhījī zhà-chéng zhī

then insert juicer press-become juice

‘ then put it in the juicer and juice it’

(C.12) 加入黄油[…]

jiārù huángyóu[…]

insert butter

‘Insert butter[…]

(C.15) […]入不锈钢碗里。

rù bùxiù gāng-wǎn-lǐ

insert stainless steel-bowl-in

put it into a stainless steel bowl.’

(C.20)(a)冬天需要将碗座入温水上面

dōngtiān xūyào jiāng wǎn zuò-rù wēn shuǐ shàngmiàn

winter need JIANG bowl sit-insert warm water above

‘In the winter, you’ll need to put the dough bowl into a bowl of warm water

(b) 也可以放入烤箱

yě kěyǐ fàng-rù kǎoxiāng

also can put-insert oven

or inside the oven

(c) 烤箱最后一层放一盆开水

kǎoxiāng zuìhòu yī céng fàng yī pén kāi shuǐ

oven last one layer put one container boiling water

where you have placed a container full of boiling water

(C.21)(d) 放置好15-20分钟。

fàngzhì-hǎo 15-20 fēnzhōng

put-well 15-20 minute

and let them rest for 15-20 minutes.’

(C.24)放入托纸

fàng-rù tuō zhǐ

put-insert hold paper
'Put the rolls into the paper holders.'

However, when the patient needs to be repeated or emphasized, to mark its topicalization in preverbal position, Chinese language employs special morphemes, like *bǎ* 把 or *jiāng* 将, (Morbiato 2020b: 57) that introduce the patient, as in (C.20)(a) below:

(C.20)(a)冬天需要将碗座入温水上面
dōngtiān xūyào jiāng wǎn zuò-rù wēn shuǐ shàngmiàn
winter need JIANG bowl sit-insert warm water above
'In the winter, you'll need to put the dough bowl into a bowl of warm water

In this case, as discussed in section 5.1.7, the author feels the need to mention the patient *wǎn* 'bowl' as a full noun, for optimal comprehension.

In (C.20)(c), we can notice that the word order changes, as the DP appears in preverbal position and the object in post-verbal position.

(C.20)(c) 烤箱最后一层放一盆开水
kǎoxiāng zuìhòu yī céng fàng yī pén kāi shuǐ
oven last one layer put one container boiling water
'where you have placed a container full of boiling water'

Cause Patient (Y) to move to Goal (Z)

DP + V(put) + Obj

The reason for this change is due to a focus shift from the location to the obj. The location has just been mentioned as a resultant location, in post verbal position, in (C.20)(b), and the new information that the sentence wants to convey is what new object needs to be placed in the location, not where the object already mentioned should be placed. Nonetheless, the sentence is still to be considered directional, since it still has the function to encode the idea that an agent causes a patient to move to a location. In (C.20)(b)

and (c) we can, once again, notice that the main linguistic device used by the Chinese language to express focus is word order (Morbiato 2020b).

In terms of predicates, we can notice that all of the verbs used in the Chinese recipe encode motion. The most used is the verb *rù* 'insert', which is often combined with the verb *fàng* 'put', as in (C.20)(b) above. In (C.20)(a), the verb *rù* 'insert' is also combined with the verb *zuò* 'sit' and in (C.12) with the verb *jiā* 'add'.

(C.20)*(a)*冬天需要将碗座入温水上面
dōngtiān xūyào jiāng wǎn zuò-rù wēn shuǐ shàngmiàn
winter need JIANG bowl sit-insert warm water above
'In the winter, you'll need to put the dough bowl into a bowl of warm water

(C.12) 加入黄油[…]
Jiārù huángyóu[…]
insert butter
'Insert butter[…]'

These V1V2 compounds can be considered directional verb compounds encoding the way the action is carried out in V1 and the direction in V2 (Xu: 2008). Therefore, we can notice that, differently from English and Italian, the Chinese recipe expresses resultant location only through verbs lexically encoding motion and direction, not through change of state verbs. The directional meaning is provided by the resultative verb *rù,* which can be employed on its own or combined with other verbs to express the way the action is done.

As we can notice from the example below, the verb *rù* can take both a direct object and a locative object (DP). It is, therefore, extremely functional and convenient in the context of a recipe text.

(C.12) 加入黄油[…]
jiārù huángyóu[…]
Insert butter
'Insert butter[…]

Cause Patient (Y) to move to Goal (Z)

DP + V(add-insert) + Obj

(C.20)(a)冬天需要将碗座入温水上面

dōngtiān xūyào jiāng wǎn zuò-rù wēn shuǐ shàngmiàn

winter need JIANG bowl sit-insert warm water above

'In the winter, you'll need to put the dough bowl into a bowl of warm water'

Causes Patient (Y) to move to Goal (Z)

Obj + V(sit-insert) + DP

As mentioned above, the switch in word order is due to the focus shift from resultant location to direct object. In (C.12) the location is not mentioned as easily inferable from the context.

Finally, it is worth noticing that in (C.21) although the verb encodes motion (put), the resultant location is left unexpressed, not because it has been mentioned before, but because it is not a specific location, and the author does not feel the need to specify it.

(C.21)(d) 放置好15-20分钟。

fàngzhì-hǎo 15-20 fēnzhōng

put-well 15-20 minutes

and let them rest for 15-20 minutes.'

As mentioned earlier, the same happens in the Italian recipe, while the English recipe does not encode any motion and expresses the same meaning with the causative verbs *let* and *allow*.

The verbal compound *fàngzhì-hǎo* and its relation to the time duration phrase following it will be discussed in section 6.3.4, whilst covering resultant object.

To sum up, the Chinese recipe text encodes resultant location through a different word order than English and Italian [Obj+V+DP] due to the *preposed object* phenomenon. However, most of the time, in Chinese recipes, the object is left unmentioned. Whenever the object needs to be emphasized, it is introduced using special morphemes like *bǎ* 把 or *jiāng* 将. Whenever the resultant location is not the focal element of the

sentence, it is moved in preverbal position, to leave the postverbal position free for the new focal element, the direct object. Therefore, the word order changes to [DP+V+Obj], but the sentence remains directional, as it still encodes the idea of an agent moving a patient to a different location. In terms of word order, the DP word order in Chinese, that is [Location+Preposition], is different from English and Italian, that is [Preposition+Location]. Nonetheless, due to the fact that the verb *rù* 'insert/enter' lexically encodes a directional meaning, sentences containing this verb might not present a locative preposition. The verb *rù* is extremely functional in recipe texts, since it can take both direct objects and locative objects; therefore, we can notice a large use of it in the Chinese recipe. This verb can appear on its own or be combined to other verbs forming a V1V2 directional compound, where V1 codes the action to be carried out and V2 (*rù*) codes the direction of the action. Finally, clauses formed with verbs lexically encoding motion do not always specify a resultant location, if the information is inferable or unimportant.

6.2.4 Encoding the resultant location: comparative remarks

In the last sections we have argued that in the English recipe, resultant location is usually expressed through a *caused motion* construction presenting a V + Obj + DP word order, although the DP might occasionally be placed in a preverbal position according to the following pattern: DP + V + Obj. The Italian recipe encodes resultant location very similarly to English, although we have noticed that the word order of the caused-motion construction might change, since the DP can be placed either before or after the object according to the following patterns: V + Obj + DP / V + DP + Obj. On the other hand, the Chinese recipe presents the patient/object in preverbal position, therefore, the most common pattern encoding resultant location is Obj + V + DP, even though the order DP + V + Obj is also possible, whenever the focus of the sentence shifts from the location to the patient. We have also noticed that in Chinese, resultant location might be expressed through directional verbal compounds, that are composed of an action verb and a directional verb. These compounds can take both the direct object and the locative object, making it particularly convenient to express resultant location in recipes. Therefore, we have argued that the three

languages encode resultant location through different phrasal patterns composed syntactically of the object a verb or verbal compound and a directional phrase, even though it was noticed that both the object and the directional phrase might often be omitted if easily inferable from the context.

We have also noticed that both English and Italian code resultant location both through verbs lexically encoding motion, like *put* , and through verbs encoding change of state like *drain.* Chinese, on the other hand, only encodes resultant location through verbs or verbal compounds lexically encoding motion, like *fàng* 'put' or *rù* 'insert'. Moreover, comparing the three recipes, we can notice that often the Chinese recipe specifies less locative details than the Italian and English recipes. For example, we can notice how in the step of cooking the pumpkin, the English and Italian recipe specify the location, while the Chinese does not.

(E.5) […]*put them face down on a baking sheet*[…]

(I.10) (b)[…] *cuocerle in una pentola con un dito d' acqua*
cook-them in a pan with a finger of water
[…]cook them in a pan with a little water'

(C.9) (a) […]蒸熟,
[…]*zhēng-shú*
steam-cook
[…]steam

This confirms the claims that Chinese relies heavily on inference and world knowledge for comprehension (Li 2005), therefore, it appears that the Chinese recipe specifies less locative details than the English and Italian recipes.

The table below will summarize our findings in terms of possible word order patterns displayed in each recipe.

Table 8: Encoding the resultant location

Agent (X) causes Patient (Y) to move to Goal (Z)

Language	Patterns	Example sentences

English	V + Obj + DP DP + V + Obj	*(E.49)* […]*place them on your prepared baking sheet.* *(E.69) In a large bowl or the bowl of a stand mixer, dissolve the yeast in the warm water with a pinch of brown sugar.*
Italian	V + Obj + DP V + DP + Obj	(I.10) (c) *o metter-le in forno*[…] or put-them in oven 'or put them in the oven[…] (I.14)(a)*Mettete in una ciotola il quantitativo di polpa di zucca* […] put in a bowl the quantity of pulp of pumpkin 'Put 120 grams of pumpkin puree in the bowl[…]'
Chinese	Obj + V + DP DP + V + Obj	(C.10) 然后除黄油外所有材料放入厨师机内。 *ránhòu chú huángyóu wài suǒyǒu cáiliào fàng-rù chúshījī nèi* then except butter out all ingredient put-insert mixer in 'Then put all of the ingredients in the mixer, except the butter.' (C.20)(c) 烤箱最后一层放一盆开水 *kǎoxiāng zuìhòu yī céng fàng yī pén kāi shuǐ* oven last one layer put one container boiling water 'where you have placed a container full of boiling water'

6.3 Encoding the resultant object

As discussed in 5.2, recipe texts generally feature lists of subject-less sentences that include an object undergoing a transformation, the action that transforms it, and the object resulting from this action. It was also mentioned that the VP composed of the action to be carried out and the object resulting from this action is the part of the sentence featuring the highest level of saliency and communicative dynamism. In this chapter, the syntactic encoding of resultant objects in the three recipes will be thoroughly discussed

and compared. As mentioned in 4.1.3, we will refer to *resultant object* as the result of any transformation occurring to the ingredients following either a direct action carried out by the agent on the patient, or a gradual process derived by letting the ingredient in a certain state until the necessary change has occurred. This change might affect the object's shape, size, or inner properties. As discussed in 5.2, the resultant object in recipes is often left unmentioned or mentioned in the subsequent sentence as patient, since it is considered easily inferrable information. According to Goldberg (1995), the construction that encodes a patient argument that undergoes a change of state as a result of the action denoted by the verb is the *resultative construction*. In the next section we will briefly discuss the properties and constraints of the resultative construction.

6.3.1 The resultative construction

As mentioned previously, the resultative construction codifies the main idea that a patient potentially undergoes a change of state following an action carried out by an agent. Within a constructional approach, the term *resultative phrase* (RP hereinafter), refers to the post verbal expression that encodes the change of state of patient arguments that undergo a potential change as a result of the action expressed by the predicate. Therefore, its features and constraints can only be traced semantically and pragmatically. (Goldberg 1995: 180)

Below is the semantic-syntactic structure, or the correlation between form and meaning, of the resultative construction as appears in Goldberg 1995.

<u>Resultative-Construction: X causes Y to become Z</u>

Sem	CAUSE-BECOME	〈agt	pat	result-goal〉
	↓	↓	↓	↓
Syn	V	SUBJ(X)	OBJ(Y)	OBL/RP(Z)

A key feature of resultative constructions is that the RP can be applied to the direct object of some verbs, but not all (Goldberg 1995: 181):

(12) *You killed it stone dead*

(13)**He watched the TV broken*

In order to explain this fact, a great deal of attention has been focused on pinpointing grammatical and lexical constraints of the verbs to which the resultative pattern can or cannot apply. Some scholars claimed that resultatives in English can only occur with verbs pertaining to telic lexical classes, like accomplishments or achievements[40], but several examples proved the claim wrong, as in (15) below (Goldberg 1995: 180-188).

(14) *Terry pushed the door *in an hour /for an hour*

(15) *Terry pushed the door shut.*

Other linguists claimed that resultatives can only occur with activities, or unbounded predicates, and it is generally agreed that resultatives cannot occur with stative verbs (Goldberg 1995: 194). According to Goldberg (1995), on the other hand, the occurrence of resultatives cannot be defined in grammatical or lexical terms, but can be predicted in purely semantic terms. Therefore, it is not necessary that the predicate independently, or lexically codes for a change of state, it is only necessary that it potentially might cause a change of state. Both telic and atelic predicates can appear in combination with resultatives, therefore telicity is not a relevant parameter. According to Goldberg the relevant constraint concerns time of occurrence of action and change. In other words, the action must directly cause the change coded by the RP, therefore, the change of state must occur simultaneously with the end point of the action. In this view actions that are usually unbounded, like activities, in the resultative construction present an endpoint, constituted by the RP. Therefore, in the example below, the activity verb eating, which if used in the past intransitively (16), means that the action is complete, in the resultative construction in (17) is lexically

[40] For a complete account on lexical aspect of verbs, see Rothstein (2004).

bounded by the RP *sick* meaning "until he got sick". The action of eating extends in time until the change occurs.

(16) *He ate.* (He finished eating)

(17) *He ate himself sick.* (He ate until he got sick)

Therefore, within a constructional approach, the resultative construction is seen as having independent semantic properties and bearing arguments that integrate the verb semantic to create the final meaning. In this approach, the resultative construction is seen as existing independently of any particular verbs, and it works as soon as the participant roles associated with the verb fuse semantically with the argument roles associated with the construction(Goldberg 1995: 189).

(18) Talk (talker)

He talked himself blue in the face.

(19) Wipe (wiper- wiped)

He wiped the table clean.

According to Rothstein (2004), telicity and atelicity are not to be considered properties of verbs, but properties deriving from the interaction between the VP and the other constituents of the sentence. Therefore, the same verb can be telic or atelic depending on its interaction with the other elements composing the sentence.

Apart from the aspectual constraint which has just been discussed, other constraints are applicable to the resultative construction. (Goldberg 1995: 193)

1. The two-argument resultative must have an animate instigator argument.

   (20) **The hammer pounded the metal flat.*

2. Resultative adjectives must denote the endpoint of a scale (non gradable.)

(21) *He hammered the metal flat/*beautiful.*

3. Resultative phrases cannot be headed by deverbal adjectives (adjectives derived from present or past participle verbs).

   (22) *He painted the house red/*reddened.*

According to Goldberg, the resultative construction can be semantically related to the caused-motion construction, since the change of state it codifies is intended as a metaphorical change of location. (Goldberg 1995: 83)

(23) *The jello went from liquid to solid in a matter of minutes*

For this reason, locative prepositions and many verbs of directed motion like *go* might be used to express a change in state instead of a change in location. This implies a constraint that Goldberg defines *Unique Path constraint*, i.e. no more that a single path can be predicated within a single clause for a physical object. Therefore, locative and resultative goals cannot co-occur into the same clause.

(24) **The vegetable went from crunchy into the soup.*

As we will show in the subsequent sections, recipe texts frequently present resultative phrases, usually prepositional phrases, to encode the result of the action carried out on the patient. In the next sections, we will discuss how resultative construction appears in recipes to encode resultant objects.

6.3.2 Encoding the resultant object: English

As discussed in section 5.2, verbs and resultant objects in recipes are the elements that carry the focus and the most communicative dynamism. Nonetheless, resultant objects in recipes are often left unmentioned, as easily inferrable from the context and through world knowledge. Therefore, considering that not all of the objects resulting from the actions are mentioned, we can suppose that the ones that are openly specified are perceived as most important by the author of the recipe. For this reason we will only discuss

patterns that openly specify resultant objects. In this section, we will demonstrate that, in English recipes, the resultant object is codified through two different patterns displaying differences in syntax and semantics. We will refer to the first pattern as *Resultative pattern 1.* In this pattern, time duration of the action is not specified and the RP representing the result of the action is usually a noun phrase introduced by the prepositions *in* or *into*. The pattern is noted as follows: [V + Obj + RP (NP)].

(E.3) *Cut the pumpkins <u>in half,</u> top to bottom.*

(E.48) *Roll each piece out <u>into a circle</u> and cut each circle <u>into twelve wedges.</u>*

(E.49) *Roll each wedge up <u>into a crescent shape</u> and place them on your prepared baking sheet.*

(E.47) […]*then you'll divide it <u>into two pieces</u>.*

This pattern syntactically and semantically conforms to the resultative construction pattern discussed in section 6.2.1, except for the agent, which in recipes is not specified. Therefore the pattern is semantically noted as follows: [Cause (Y patient) to become (Z Result-goal)]

We can also notice how in this pattern, the PP introduced by *in* or *into* conveys a metaphorical idea of change of location through change of state, as mentioned in the last section.

<u>Resultative pattern 1</u>

(E.3) *Cut the pumpkins in half, top to bottom.*

Cause (Y Patient) to become (Z Result-goal)

V(cut) + Obj + RP (NP)

The second pattern encoding resultant object expresses the achievement of the result through a resultative phrase (RP) usually encoded through a VP introduced by the preposition *until* and it might specify a time duration for the action through a time phrase (TP). We will refer to this pattern as *Resultative pattern 2.* The

pattern is noted syntactically as follows: [V + Obj + TP + RP(VP)]. The semantics of this pattern is slightly different to *Resultative pattern 1* because it implies that the action must be carried out for a specific time in order to achieve the result. The pattern is semantically noted as follows: [Act on/ let (Y patient) for (T Time duration) until it becomes (Z Result-goal)]

Resultative pattern 2

(E.45) […] *knead it for about 8 minutes until it's nice and smooth.*

Act on/ let (Y patient) for (T time duration) until it becomes (Z Result-goal)

V (knead) + Obj + TP + RP(VP)

Therefore, both resultant patterns codify a change of state obtained through an action or process, but pattern 1 encodes punctual actions that start and finish immediately after, while Resultative pattern 2 encodes extended actions that lasts for a specific time and/or until the result is achieved. As mentioned above the two patterns also present a difference in syntax.

Resultative pattern 1 usually presents a RP composed by a preposition and a NP, as (E.47) below.

(E.47) […]*then you'll divide it into two pieces.*

On the other hand, in *Resultative pattern 2* the RP is composed of a preposition, (usually *until*), followed by a VP or a deverbal adjective (*well-pureed*) as in (E.9) below. Moreover, it might include a time duration phrase (TP), usually introduced by the preposition *for*, as in (E.45) above.

(E.9) *Blend until well-pureed*[…]

As mentioned in section 6.2.1, telicity can be induced in an atelic verb by the other constituents of the sentence (Rothstein 2004). In recipes, verbs presenting unbounded predicates are made telic by the resultative phrase introduced by *until*. Both the time phrase and the resultative phrase are optional, but at least one of them is usually specified, as they have the function of bounding the action. On the other hand,

in the context of recipes, accomplishment verbs with quantized objects, like *bake* in (E.27) below, are made atelic as if they were activities and bounded by a PP specifying time duration (Rothstein 2004:32).

(E.27)*Bake at 350 for 60-90 minutes, checking periodically after 60 minutes*

Resultative pattern 2 might also be constructed with the causative verbs *let* and *allow*, which do not express the idea that change is brought about by direct actions carried out by the agent, but that the agent allows the change by not acting on the patient for a specific time or until the desired result is reached.

(E.37) *Allow the yeast to sit for about 5 minutes until it's foamy.*

As discussed in chapter 5, concerning textual cohesion, recipe texts are characterized by widespread deletion. As we can notice in (E.70), the "printed recipe" cookbook-like version of sentence (E.37) expresses the resultant object, i.e. foamy yeast, solely through an adjective and introduces the time duration phrase avoiding the preposition *for*.

(E.70) *Let sit five minutes, until foamy*

Act on/ Let (Y Patient) for (T Time duration) until it becomes (Z Result-goal)

V(let) + Obj + TP + RP(adj)

This kind of sentence, typical of recipe texts, can only be acceptable and fully understood contextually.

As mentioned previously in this section, in recipes, the pattern presenting a TP introduced by the preposition *for* and not containing a RP might also appear. In this case the resultant object is not expressed but inferred.

(E.46) […]*let it rise for an hour.*

Act on/let (Y patient) for (time duration)

V (let) + Obj + TP

At times, the result of one or a set of actions might be left unexpressed in the utterance where the action is mentioned and might be expressed in the following utterance instead, introduced by a time word like *after*, *once*, or *when*.

(E.47) *Punch & Separate – After the dough rises, punch it down*[…]

(E.42) *Once that has mixed together, add 1/4 cup of additional flour at a time.*

(E.45) *Knead It – When the dough is ready*[…]

(E.28) *They are finished when a fork slides in easily*[…]

To sum up, the resultant object in English recipes is encoded by two different patterns encoding two different meanings. The first pattern is referred to as the *resultative pattern 1* and codifies punctual actions that cause immediate change in the patient. It syntactically encodes resultant object through a prepositional phrase composed by the prepositions *in* or *into* and an NP. The second pattern is referred to as *resultative pattern 2* and expresses the idea that change is caused by an extended action or process. It encodes resultant objects through a PP composed of the preposition *until* followed by a VP or an adjective. Resultative pattern 2 might also include a time phrase introduced by the preposition *for* and can employ both action verbs and causative verbs. Both the time duration phrase and the resultative phrase can be omitted but at least one should appear to bound the action. In case the resultative phrase is omitted, the resultant object is not mentioned, but inferred, or it might be specified in the subsequent sentence following a time word like *once*, *after* or *when*.

6.3.3 Encoding the resultant object: Italian

The structures encoding resultant object in Italian recipes are the same as in English, but we can notice some interesting syntactic differences:

(I.10)(b)*tagliar-la a grosse fette*[…]
cut-it in big slices '
'cut it in large slices[…]

(I.19)(d) *e tagliate i triangoli che andrete ad arrotolare per fare le brioche*
and cut the triangles that go to roll.up to make the brioches
'and cut out the triangles that you're going to roll up to make the brioches'

We can see that *resultative pattern 1* appears in the Italian recipe with the same word order as in the English recipe. The RP can be a PP introduced by the prepositions *a* or "*n* or a NP.

Resultative pattern 1

(I.10)(b)*tagliar-la a grosse fette*[…]
cut-it in big slices '
'cut it in large slices[…]

Cause (Y patient) to become (Z Result-goal)

V(cut) + Obj + RP (NP)

Nonetheless in (I.19)(d) we can observe how the word order changes as the resultative object, i.e. 'the triangles', is placed in the patient slot instead of the real patient, i.e. 'the dough'. Therefore, instead of writing 'Cut the dough into triangles', the author writes 'cut the triangles'. This VP is then connected through a relative phrase to another VP featuring the verb 'roll up' and another resultant object, 'the brioches' introduced by a PP. Therefore, we can notice how in this sentence two steps of the recipe are expressed, two VPs and the subsequent resultant objects are mentioned. In the first VP, the NP 'the

triangles' is the RP, even though it is placed in the slot of the patient, whereas in the second VP, 'the triangles' become the patient, as it is connected through the relative phrase.

(I.19)(d) *e tagliate i triangoli che andrete ad arrotolare per fare le brioche*
and cut the triangles that go to roll.up to make the brioches
'and cut out the triangles that you're going to roll up to make the brioches'

VP1 Cause to become (Z Result-goal)

V(cut) + RP (NP)

VP2 (Y Patient) that (X agent) causes to become (Z Result-goal)

Obj + V(roll up) + RP(NP)

This sentence, although not respecting the normal word order, is perfectly understandable since the reader can infer that the triangles have to be cut out of the dough even if it is not mentioned. The text also features a hyperlink that helps the reader gather more information about the procedure.

Resultative pattern 2 appears in the Italian recipe, featuring a resultative phrase (RP) usually introduced by the prepositions *fino a che* 'until' or *a* 'at' followed by a VP describing the result of the action.

<u>Resultative pattern 2</u>

(I.16)(a)*impastate fino a che l' impasto non sarà omogeneo, liscio ed elastico.*
knead until the dough NEG be homogeneous smooth and elastic
'Knead until the dough becomes homogeneous, smooth and elastic.'

Act on/ let (Y patient)until it becomes (Z Result-goal)

V(knead) + Obj + RP (VP)

As seen in the English recipe, both the time phrase and the resultative phrase are optional and can appear simultaneously, even though in this Italian recipe the author decided not to include both of them in the same sentence.

(I.10) (c)*o metterle in forno (avvolta in un pezzo di stagnola) per 30 minuti.*
or put-them in oven wrapped in a piece of tinfoil for 30 minutes
'or put them in the oven (wrapped in a piece of tinfoil) for 30 minutes'

Act on/ Let (Y patient) for (time duration)

V(put) + Obj + TP

Moreover, as in the English recipe, when the result of one or a set of actions is not directly mentioned in the same sentence as the VP that produces it, it might be expressed in the following utterance instead, introduced by a time word like *after*, *once* or *when*.

(I.16) *Quando sarà incordato aggiungete a filo l' olio di soia* [...]
when be blended add at thread the oil of soy
'When the dough will be blended, add some soy oil slowly [...]'

In (I.18), the meaning of the VP *put it in the fridge for around ten hours* is obviously *put it in the fridge and leave it for around ten hours*. The reader can easily infer the correct meaning through pragmatic situational knowledge.

(I.18)(a)*Mettete ora in frigo per una decina di ore*
put now in fridge for a ten of hour
'Now put it in the fridge for around ten hours.'

As seen in the English recipe, causative verbs like *let* or *allow* can function in this pattern.

(I.19) (a)*Tolto dal frigo fate tornare a temperatura ambiente per un' ora,*
removed from-the fridge let return at temperature room for one hour

'Remove the dough from the fridge and let it warm up to room temperature for one hour'

Although the basic resultative pattern remains the same as in English, Italian recipes present other syntactic ways to express resultant objects. For example, the gerund verb form ending in *-endo* or *-ando* is used to set a 'result frame' for the action, which has to be carried out until the result expressed with the gerund verb form is obtained. Therefore, the word order of the resultative construction is respected, but the RP is not encoded through a PP but through a VP featuring the gerund form.

(I.14)(c)*ora mescolate bene il tutto ottenendo un composto cremoso.*
now mix well the everything obtaining a mixture creamy
'now mix everything very well to obtain a creamy mixture'

Act on/ Let (Y Patient)until it becomes (Z Result-goal)

V(mix) + Obj + RP (VP)

(I.19)(b) *stendete con il mattarello l' impasto sgonfiando-lo bene ma delicatamente* [...]
spread-out with the rolling pin the dough deflating-it well but gently
'Spread out the dough with the rolling pin deflating it gently [...]'

Act on/ Let (Y patient)until it becomes (Z Result-goal)

V(spread) + Obj + RP (VP)

To sum up, Italian recipe texts encode resultant objects through structures which are very similar in word order to the English resultative patterns, although some Italian structures can present important syntactic differences. As we have seen, the resultant object related to a VP can be placed in the patient slot and connected to another VP becoming its patient without hindering comprehension. Moreover, Italian might employ the gerund verb form in place of the resultative phrase introduced by *until*.

6.3.4 Encoding the resultant object: Chinese

As mentioned in section 6.2.3, in Chinese the elements representing the focus of the action, i.e. the new information conveyed, are placed post-verbally. In recipes, often the resultant object and the resultant location are the focal elements, therefore they often appear in post-verbal position. The patient, on the other hand, is often located pre-verbally with the function of preposed topic and very often left unmentioned in recipes.

Therefore, differently to English and Italian, the word order of the basic resultative construction in Chinese recipes is [Obj + V + RP] as shown below, although semantically the resultative structure [Cause (Y patient) to become (Z Result-goal)] remains valid.

(C.21)(b)**Ø** 揉成圆形

Ø*róu -chéng yuán xíng*

knead-become round shape

‘ knead them into a round shape’

As discussed in section 6.2.3, when the patient needs to be repeated or emphasized, to mark its topicalization in preverbal position, Chinese language employs special morphemes like *bǎ* 把 or *jiāng* 将, (Morbiato 2020b: 57) that introduce the patient, as shown below:

(25) 把南瓜切成块。
Bǎ nánguā qiè-chéng kuài
BA pumpkin cut-become piece
‘Cut the pumpkin in pieces’

(26) 将南瓜切成块。
Jiāng nánguā qiè-chéng kuài
JIANG pumpkin cut-become pieces
‘Cut the pumpkin in pieces’

In (C.20)(a), the morpheme *jiāng* introduces an object moved to a different location.[41] In (C.9), nonetheless, the verb 用 *yòng* ‘to use’, is used instead to introduce the patient *nánguā* ‘pumpkin’ in preverbal position.

[41] See section 6.2.3.

This uncommon usage of the verb might be due to the colloquial nature of user generated blog recipes.[42] Following the preposed patient, the rest of the sentence displays several VPs in series that iconically, i.e. reflecting the temporal sequence, describe three steps of the procedure in the same clause, avoiding punctuation, as noted in section 6.1.

(C.9)(a) […]用南瓜去皮切块蒸熟，
[…]*yòng nánguā qù pí qiē kuài zhēng shú*
use pumpkin eliminate skin cut pieces steam cook
‘ […]peel the pumpkin, cut in pieces and steam’

(C.15) 然后 **Ø**整理成面团

ránhòu **Ø** *zhěnglǐ-chéng miàntuán* […]
then **Ø** arrange-become dough
‘Then knead the mixture until it becomes dough […]

Cause (Y patient) to become (Z Result-goal)

Obj + V + RP(NP)

Subsequently, we will discuss how the Chinese recipe encodes resultant objects, both in basic resultative structures (*resultative pattern 1*) and in structures that include a time duration phrase or a resultative verb phrase (*resultative pattern 2*). Only structures linguistically encoding resultant objects will be analyzed. Below are listed some examples of *resultative pattern 1* from the Chinese recipe:

(C.9) (a) […]切块
[…]*qiē* <u>*kuài*</u>
cut pieces
[…]cut in pieces

(b) […]榨成汁，
[…] *zhà-chéng* <u>*zhī*</u>
press-become juice
‘[…]juice it’

[42] See section 2.4.

(C.15) 然后整理成面团 […]
ránhòu zhěnglǐ-chéng *miàntuán* […]
then arrange-become dough
'then knead the mixture until it becomes dough […]'

(C.21)(a)分别分成大小一样的小面团
fēnbié *fēn-chéng* *dàxiǎo yīyàng de xiǎo miàn tuán*
separate divide-become size same DET little dough balls
'Separate your dough to form a few small dough balls of the same size'

(C.22) 取一份面团，擀成长舌状，
qǔ yī fèn miàn tuán gǎn-chéng *cháng shé zhuàng*
get one CLF dough ball roll-become long tongue shape
'Press and roll your small dough balls to make them tongue shaped.'

From the examples above we can notice that the resultant object is usually introduced by two verbs: the first expresses the action to be carried out and the second, which carries the meaning 'to become', introduces as a direct object the resultant object expressed as a NP (Abbiati 1998: 145). The structure is therefore composed of three parts: the action verb (V1), the resultative verb *chéng* 'to become'(V2) and the NP expressing the result of V1 in a compound [V *chéng* NP], as noted below.

[V1(Action) + V2(*chéng)* + RP(NP)]

Resultative pattern 1

(C.21)(b)揉成圆形
róu-chéng *yuán xíng*
knead-become round shape
knead them into a round shape

Cause (Y patient) to become (Z Result-goal)

Obj + V1(cut)V2(become) + RP(NP)

This structure, that combines an action verb and a verb introducing or directly expressing a result, is usually referred to as *resultative verb compound*[43]. As we can observe in (C.9) below, this structure can also occur as a VN compound, avoiding the use of the morpheme *chéng.* Verb-noun compounds in Chinese are left-headed as the noun is sub categorized by the verb (Basciano 2010: 48). In this case, the action verb, *qiē* 'to cut' is directly followed by its result *kuài* 'pieces', as noted below.

V1(Action) + RP(NP)

(C.9)(a)[…]切块

[…]*qiē kuài*
cut pieces '
'[…]cut in pieces

The reason why the author chooses to rely on the shortened form might be that the procedure described in this clause is perceived as extremely simple, and the author might feel that it does not need to be described using lengthy and detailed sentences. Moreover, as we have seen in section 5.3, this clause follows a discourse topic, *Nánguāní*'pumpkin puree', that semantically frames the content of the following predication. Therefore, the author might feel that using a sequence of VPs, although in their shortened form, would not hinder comprehension.

In (C.15) we can observe that differently from English and Italian, *resultative pattern 1* in Chinese might also encode extended actions, not only punctual actions. As can be noticed from the English translation, the same pattern in English cannot be rendered with a NP introduced by *in* or *into*, but needs a VP introduced by the preposition *until* to be expressed correctly.

(C.15) 然后整理成面团[…]
ránhòu zhěnglǐ-chéng miàntuán[…]
then arrange-become dough
'Then knead the mixture until it becomes dough[…]'

43

This demonstrates that the pattern [V1(Action) + V2(*chéng)* + RP(NP)] is highly productive in Chinese and can express more meanings than the English or Italian counterpart.

The Chinese recipe in the corpus also shows some examples of *resultative pattern 2*, which semantically codifies a change in the patient caused by an extended action or process. Syntactically, *resultative pattern 2* expresses the achievement of the result through a resultative verb phrase and might include a time duration for the action.

(C.9) (a) […]蒸熟,
[…]*zhēng-shú*
steam-cook
'[…]steam (until it's cooked)'

(C.19)[…]发酵至两倍大[…]
[…]*fājiào-zhì* *liǎng bèi dà*[…]
ferment-until two time big
' […]let it rise until it doubles in volume[…]'

As we can notice, in (C.9)(a), another resultative compound formed of two verbs expresses the result of the action of steaming.

(C.9)(a)[…]蒸熟,
[…]*zhēng-shú*
steam-cook
[…]steam

Act on/ Let (Y patient) until it becomes (Z Result-goal)

Obj + V1(steam) + RP/ V2(cook)

In this compound, the first verb, *zhēng* (V1), expresses the action to be carried out, the second verb, *shú* (V2), expresses the result of the action, that is, cooked, soft pumpkin pieces. Therefore, we can observe how this VP encodes its resultant object directly through a verbal compound, as noted below.

It is interesting to notice how, in the English recipe part of this corpus, the same meaning is expressed through a couple of sentences, and the resultant object is expressed through a clause following the word *when*, as discussed in 6.2.2

(E.27) *Bake at 350 for 60-90 minutes, checking periodically after 60 minutes*

(E.28) *They are finished when a fork slides in easily*

As we can observe from the examples below, in the Chinese recipe, the resultant object might also be encoded through a VP introduced by the morpheme *zhì*, which can be directly translated as *until*.

(C.19)[…]发酵至两倍大[…]
[…]*fājiào-zhì liǎng bèi dà*[…]
ferment-until two time big
[…]let it rise until it doubles in volume[…]

Act on/ Let (Y patient) until it becomes (Z Result-goal)

Obj + V(let rise) + RP(VP)

As in the other recipes, the Chinese recipe features sentences expressing the time duration of the action or state leaving the resultant object unmentioned. In (C.21) (d) we can notice that the duration of the state is expressed through the use of a time phrase that simply follows the verb or verbal compound (Abbiati 1998:135).

(C.21)(d) […]放置好15-20分钟
[…]f*àngzhì-hǎo 15-20 fēnzhōng*
put-well 15-20 minutes
[…]and let them rest for 15-20 minutes.'

In (C.21)(d), the VP *fàngzhì-hǎo* is a verbal compound formed of a disyllabic verb *fàngzhì* which means 'put', and a resultative verb *hǎo,* which carries the meaning of 'good' or 'well'. This type of resultative compound has been defined as *phase complement* (Li & Thompson 1981). Both resultative and phase

complements are constituted by a verbal compound V1V2, but they have a different function. According to Huang (2007), resultative complements directly take part in argument realization, allowing complex semantics to be realized with simple syntax. As previously mentioned, they express the result of a change in state of the object following the V1 action. Phase complements, on the other hand, do not express the result of the action, but a phase of it, therefore, they function as lexical aspect particles that bound the action and signal the completion of the same event expressed by the V1. Besides 好 *hǎo,* common phase complements include the verbs *wán* 完 'to finish', *dào* 到 'to arrive/to achieve' and *zhù* 住 'to hold on' (Huang 2007: 71). In (C.21)(d), the complement *hǎo* expresses successful completion of the action of putting/being in a certain location. Moreover, the author adds a time phrase to the verbal compound specifying how long the state should last for the result to be achieved.

(C.21) (d)[…]放置好15-20分钟
[…]f*àngzhì hǎo 15-20 fēnzhōng*
put well 15-20 minutes
[…]and let them rest for 15-20 minutes.'

Act on/ let (Y patient) for (time duration)

Obj + V(let) + TP

As discussed in the previous section, the Italian recipe features a very similar sentence.

(I.18)(a)*Mettete ora in frigo per una decina di ore*
put now in fridge for a ten of hours
'Now put it in the fridge for around ten hours.'

While the English recipe always makes use of the causative verbs *let* or *allow* to express the same meaning.

(E.46) *Rise Up – When smooth, place the dough into a greased bowl and let it rise for an hour.*

As mentioned previously, the TP in Chinese is usually composed of NPs directly following the verb or verbal compound as seen in (C.21)(d). However, in some cases noun phrases expressing time can be composed of different elements (Abbiati 1998: 137). In (C.26), the morpheme *zhì* has the function of providing a temporal boundary to the action, although its appearance in this context is neither necessary nor commonly seen.

(C.26) […]发酵至40分钟。
[…]*fājiào zhì 40 fēnzhōng*
ferment until 40 minutes
[…]and let them rise for 40 minutes'

We might surmise that the author employed this word in order to emphasize the meaning of time delimitation and accuracy of the procedure.

To sum up, resultant objects in Chinese recipes are expressed through syntactic patterns that feature the patient in preverbal position (*preposed patient*). Therefore, the basic pattern to express resultant object is not [V+O+RP] as in English and Italian, but [O+V+RP]. Moreover, very often the patient is left unmentioned and inferred from the context. When the patient needs to be emphasized for optimal comprehension, some prepositions are used to introduce it in preverbal position, like *bǎ* 把 or *jiāng* 将. In the Chinese recipe part of the corpus, the verb *yòng* 用 'to use', is used instead to introduce the patient.

To encode resultant objects, Chinese often makes use of different kinds of resultative compounds. In *resultative pattern 1*, verbs are realized usually as [V1 + V2 *chéng*] compounds, where the first verb expresses the action to be carried out and the verb *chéng* 'to become' introduces the resultant object as a NP. VN compounds avoiding the use of the morpheme *chéng* also appear in Chinese recipes. In Chinese resultative pattern 1 does not only express punctual actions, but also extended actions, due to its high productivity. *Resultative pattern 2*, which expresses the resultant object through a verb phrase, in Chinese displays the occurrence of V1V2 resultative structures, where the second verb expresses the result of the action encoded by the first verb. Alternatively, the resultative verb phrase is encoded through a RP composed by the preposition *zhì* 'until' followed by the VP. To add details of time duration, the TP is simply

placed after the verb or verbal compound. The verbal phase complement *hǎo*, is added to the action verb to express successful completion. Finally, the preposition *zhì* might be placed before TP to emphasize time duration.

3.2.5 Encoding the resultant object: comparative remarks

In the last sections, we have analyzed linguistic patterns expressing the idea that a patient argument undergoes a change of state as a result of the action denoted by the verb. To do so, we have adopted as a model the construction identified by Goldberg (1995) as *resultative construction.* This construction, which we have identified as *resultative pattern 1* syntactically features a change of state verb, direct object, and a resultative phrase (RP) in the form of a PP introducing the resultant object as a NP. The pattern is noted as follows: [V + Obj + RP (NP)]. It semantically encodes a change in state of the patient caused by a punctual action carried out by the agent and it is noted as follows: [Cause (Y Patient) to become (Z Result-goal)]

Besides, we have also identified a different resultative pattern, which we referred to as *resultative pattern 2*, semantically encoding a change in state of the patient caused by a process or an extended action carried out by the agent until the final result is achieved. The pattern is semantically noted as follows: [Act on/ let (Y Patient)for (T time duration) until it becomes (Z Result-goal). This pattern syntactically codes the resultant object through a verbal phrase introduced by the preposition *until* and possibly specifies the duration of the action through a time phrase. The pattern is syntactically noted as follows: [V + Obj + TP + RP(VP)].

Both the time duration phrase and the resultative verb phrase can be omitted but at least one should appear to bound the action. In case the resultative phrase is omitted, the resultant object is not mentioned, but inferred, or it might be specified in the subsequent sentence following a time word like *once*, *after* or *when*. We have noticed that the English and the Italian recipe encode the resultant object very similarly,

although Italian might also make use of different patterns, like the gerund verb form instead of the resultative prepositional phrase.

In the Chinese recipe, the resultative patterns present a different word order than Italian and English, due to the preverbal position of the object, noted as follows. *Resultative pattern 1:* [Obj + V + RP (NP)]; *resultative pattern 2*: [Obj + V + RP(VP)]. The predicate in *resultative pattern 1* is realized through a resultative compound [V1 + V2 *chéng*], where the first verb expresses the action to be carried out and the verb *chéng* 'to become' introduces the resultant object as a NP as noted: [Obj + V(V1+V2*chéng*) + RP(NP)]. We have noticed that this resultative compound appears extremely productive in recipes and codifies not only punctual actions but also extended actions, differently from English and Italian.

Verb-noun compounds not featuring the use of the morpheme *chéng* also appear in Chinese recipes. *Resultative pattern 2* in the Chinese recipe displays the occurrence of V1V2 resultative structures, where the second verb expresses the result of the action encoded by the first verb. Alternatively, the resultant object is encoded through a RP featuring the preposition *zhì* 'until' followed by the VP. To add details of time duration of the action, the NP expressing the time is simply placed after the verb or verbal compound. The verbal phase complement *hǎo* is added to the action verb to express successful completion and bounds the action as a lexical aspect particle.

The tables below will summarize our findings in terms of possible word order patterns that different languages display to encode the resultant object.

Table 9. Encoding the resultant object: Resultative pattern 1

Cause (Y Patient) to become (Z Result-goal)

Languages	Patterns	Example sentences
English	V + Obj + RP(NP)	(E.48) *Roll each piece out into a circle* […]

Italian	V + Obj + RP(NP)	(I.10)(b)*tagliar-la a grosse fette* […] cut-it in big slices ' 'cut it in large slices […]
Chinese	Obj + V (V1+V2 *chéng*)+ RP(NP)	(C.21)(b)揉成圆形 *róu -chéng yuán xíng* knead-become round shape knead them into a round shape

Table 10. Encoding the resultant object: Resultative pattern 2

Act on/ let (Y Patient) for (T time duration) until it becomes (Z Result-goal)

Language	Patterns	Example sentences
English	V + Obj + RP(VP) V + Obj + TP + RP(VP)	(E.40) *Mix everything together until it has fully blended.* (E.37) *Allow the yeast to sit for about 5 minutes until it's foamy.*
Italian	V + Obj + RP(VP) V + Obj + RP(VP)	(I.16)(a)*impastate fino a che l' impasto non sarà omogeneo, liscio ed elastico.* knead until the dough NEG be homogeneous smooth and elastic 'Knead until the dough becomes homogeneous, smooth and elastic.' (I.14)(c)*ora mescolate bene il tutto ottenendo un composto cremoso.* now mix well the everything obtaining a mixture creamy 'now mix everything very well to obtain a creamy mixture'
Chinese	Obj + V + RP(VP) Obj + V1 + RP(V2)	(C.19)[…]发酵至两倍大[…] […]*fājiào-zhì* *liǎng bèi dà*[…] ferment-until two time big […]let it rise until it doubles in volume[…] (C.9) (a) […]蒸熟,

		[…]*zhēng-shú* steam-cook […]steam (until it's cooked)
	Obj + (V1+V2 *chéng*)+ RP(NP)	(C.15) 然后整理成面团[…] *ránhòu zhěnglǐ-chéng miàntuán*[…] then arrange-become dough 'Then knead the mixture until it becomes dough[…]

CHAPTER 7

CONCLUSIONS

In this research, we have carried out a comparative and multi-layered textual analysis of three original, user-generated recipe texts, written in English, Italian, and Chinese,selected by international blogs. The purpose of this research, in line with our research questions, has been to shed light on some linguistic features of recipe texts, as functional and technical texts that present unique linguistic peculiarities (Norrick 1983:180). To do so, we have adopted a function-to-form framework inspired by Goldberg's constructionist grammar (1995, 2006). This framework, which draws upon a wide array of cognitive, functional, and semiotic theoretical resources, has allowed us to conduct a multi-layered and cross-linguistic textual analysis thereby addressing our research questions.

The linguistic aspects which we have analyzed in this research include a comparative study of the cohesive means employed in recipe texts to achieve comprehension, despite a vast occurrence of zero anaphora, and a discussion on thematic progression in recipe texts. Furthermore, we have focused our attention on the main linguistic functions which recipe texts fulfill, namely the encoding of temporal sequence of actions, of resultant location, and of resultant object. Through the models provided by construction grammar, we have analyzed and compared the various patterns (forms) encoding the functions above mentioned in the three languages. Our analysis, which was very limited in its extent, focused on the qualitative, rather than the quantitative amount of gathered data and aimed at providing an initial range of observations that would need to be researched further using a wider corpus. Nonetheless, despite its limited scope, this study has provided some considerable evidence which is worth summarizing.

In particular, in chapter 5, we have analyzed the cohesive means each recipe employs to achieve full comprehension. As expected, we have noticed that the printable cookbook-like version of the English recipe

mainly employs contextually defined co-referential deletion of subject and direct object, while the colloquial blog-like version reaches cohesion mainly through the use of pronouns and other deictics. This confirmed the findings of linguists we had previously discussed in chapter 2, according to which cookbook recipes present specific syntactic features, like a vast use of zero-anaphora, that make them technical procedural texts "not entirely within the boundaries of the general or core language"(Norrick 1983: 173). On the other hand, recipes found in blogs display more colloquial features and less use of recipe-specific syntactic features, so that they can be referred to as different sub-registers (Kaneyasu and Kuhara 2020). Moreover, this confirms the idea that blog-like recipes might be more comprehensible and user-friendly than cookbook-like recipes (Diemer et al. 2013). The italian recipe also presents colloquial features typical of blogs and reaches cohesion mainly through the use of verbal agreement and clitic pronouns, although some co-referential deletion also appears. The Chinese recipe, on the other hand, although displaying blog-like colloquial features, makes a vast use of co-referential deletion and a very limited use of other devices to achieve cohesion. Moreover, the text displays instances of crossed or ambiguous reference, which can be traced only through contextual knowledge and some referent corresponding to resultant objects, including the final result of the recipe, are not even mentioned once.

> [...] zero-pronouns could appear in any grammatical slot, on the basis of coreferentiality with an antecedent that itself might be in any grammatical slot, at some distance or not even present (Li and Thompson 1979: 320).

Therefore, we have concluded that the Chinese recipe text is comparatively much more 'obscure' than the English and Italian texts, and the level of inferential processes the reader must activate to understand it is much higher. This has to do with what Bisang (2009) refers to as *hidden complexity,* that is the property of some languages, including Mandarin Chinese, to present a vast occurrence of non-specified arguments that can only be inferred pragmatically. On the other hand, European languages are characterized by *overt complexity*, which entails the use of morphological devices, including verbal agreement, to clarify reference. Therefore, we have argued that, beyond the specific textual genre of recipes, different languages employ different means to specify reference and achieve cohesion and that Chinese entails the activation of much

wider pragmatic inference to achieve full comprehension. Moreover, we have noticed how the Chinese recipe text can be better understood not analyzing it at a sentential level, but at a discourse level, considering the use of discourse topics and topic chains, i.e. functional discourse units that organize information crossing sentence boundaries (Li 2005). Despite the great differences in choice of cohesive means and textual organization of the three recipes texts, we have noticed that an element that seems to characterize all of them is a certain level of lexical inaccuracy. In particular we have noticed that in the three recipes not always the same NP refers to the same physical object and that, at times, the same object is referred to through different NPs. Moreover, references might be crossed and/or discontinuous. This proves that a certain amount of pragmatic inference and situational knowledge is required to understand any recipe text in any language or format. It also confirms the claims that recipe texts pertain to a technical and contextually defined genre characterized by the use of visual metadiscourse and often require text numbering, chunking, and pictures to achieve full comprehension (Diemer et al.2013, Chen 2016 inter alia). Finally, in chapter 5 we have noticed how thematic progression in recipes can be traced in semantic and pragmatic terms as a patient undergoing a change brought about by the action resulting in a new object, which in turn becomes the patient of the following action. Therefore, the patient constitutes the topic of the sentence, being a known element, while the action and the resultant object might constitute the comment, i.e. the part of discourse that features the highest communicative dynamism. Subsequently, we have argued that, semantically and pragmatically, thematic progression is common for all recipes, although the three languages syntactically encode information through profoundly different structures, which we have discussed in detail in chapter 6.

In order to address the second research question, in chapter 6 we have analyzed what we consider to be the main functions of recipe texts, as procedural goal oriented texts which express a sequence of actions happening in a specific time, in a specific location, and producing specific results. These functions are the encoding of a temporal sequence of actions, of resultant location, and of resultant object. For what concerns the encoding of a temporal sequence of actions, we have confirmed that the list of agentless imperative sentences, often introduced by time adverbials, iconically represents the main device used to

encode temporal sequence in the three recipes (Haiman 1980). Nonetheless, we have argued that the three texts present differences in syntax, since in the English and Italian recipe each clause or sentence normally encodes a single action, while the Chinese recipe might list a series of actions in the same clause or sentence without using coordinating conjunctions or punctuation. This is due to the isolating nature of the Chinese language and to pragmatic or structural factors, like the presence of discourse topics or topic chains (Li 2005). Therefore, concerning the encoding of a temporal sequence of actions, the Chinese recipe features a different distribution of the information in the text. Moreover, English and Italian recipes express sequentiality also through other tools, like verbal agreement in the form of consecutio temporum and clause coordination, while Chinese only rely on time adverbials and listing.

Concerning the encoding of the resultant location, we have analyzed patterns that express the idea that an agent caused a movement of the patient along a specific path to a specific goal. According to Goldberg (1995), this idea is expressed linguistically through a particular construction, identified as *caused-motion construction*, which in English usually presents the following word order: [Sbj + V + Obj + DP]. The directional phrase (DP) is the element encoding the resultant location usually through a directional preposition followed by a NP. We have argued that in the English recipe, resultant location is usually expressed through a *caused motion construction* presenting a [V + Obj + DP] word order, although the DP might occasionally be placed in a preverbal position according to the following pattern: [DP + V + Obj]. It appears that the recipe text genre allows this kind of syntactic idiosyncrasies in English. Moreover, in the English recipe text we have noticed that complex sentences seemingly presenting more than one DP should be interpreted as containing a main DP and a secondary DP. The main DP describes the resultant location of all the ingredients, while the secondary DP expresses the path of motion of some of the ingredients towards the rest of them. For this reason, the secondary DP should be considered part of the patient/object. Crucially, this kind of complex sentences can be fully understood relying on situational knowledge and world knowledge. The Italian recipe encodes resultant location very similarly to English, although we have noticed that the word order of the caused-motion construction might change, since the DP can be placed either before or after the object. On the other hand, the Chinese recipe presents the patient/object in a preverbal

position. We have also noticed that in Chinese resultant location might be expressed through directional verb compounds, that are composed of an action verb and a directional verb. These compounds can take both the direct object and the locative object, being particularly convenient to express resultant location in recipes. Therefore, we have argued that normally the three languages encode resultant location through different phrasal patterns composed of the patient/object, a verb or verbal compound, and a directional phrase, even though it was noticed that both the patient/object and the directional phrase might often be omitted if easily inferable from the context.

We have also argued that the Chinese language relies particularly on inference and contextual knowledge for comprehension and in recipes specifies less locative details than English and Italian. Finally, we have confirmed Goldberg's claim (1995) that in English both verbs lexically encoding motion (*put*) and change of state verb (*drain*) can instantiate a caused motion construction. We have noticed that this is also true in the Italian recipe, but not in the Chinese recipe, where the resultant location is always encoded through verbs of verbal compounds lexically encoding motion.

For what concerns the encoding of resultant object, we have analyzed linguistic patterns expressing the idea that a patient argument undergoes a change of state as a result of the action denoted by the verb. To do so, we have adopted as a model the construction identified by Goldberg (1995) as *resultative construction.* This construction, which we have identified as *resultative pattern 1* syntactically features a verb, a direct object as patient, and a resultative phrase (RP) in the form of a prepositional phrase introducing the resultant object as a noun phrase. The pattern is noted as follows: [V + Obj + RP(NP)]. It semantically codes the idea that the patient undergoes a change of state following a punctual action carried out by the agent.

Besides, we have also identified a different resultative pattern, which we referred to as *resultative pattern 2*, encoding the resultant object through a verbal phrase introduced by the preposition *until* and possibly specifying the duration of the action through a temporal phrase. The pattern is noted as follows: [V + Obj + TP + RP(VP)]. This pattern semantically expresses the idea that the patient changes as a result of a

process not initiated by the agent or through a durative action carried out by the agent until the result is achieved. Both the time duration phrase and the resultative phrase can be omitted but at least one should appear to bound the action. In case the RP is omitted, the resultant object is not mentioned, but inferred, or it might be specified in the subsequent sentence following a time word like *once*, *after* or *when*. We have noticed that the English and the Italian recipe encode the resultant object very similarly, even though Italian might also make use of different patterns like the gerund verb form instead of the resultative prepositional phrase.

In the Chinese recipe, the resultative patterns present a different word order than Italian and English, due to the preverbal position of the object, noted as follows: *resultative pattern 1:* [Obj + V + RP(NP)]; *resultative pattern 2*: [Obj + V + RP(VP)]. The verb in *resultative pattern 1* is realized through a resultative compound [V1 *+* V2 *chéng*], where the first verb expresses the action to be carried out and the verb *chéng* 'to become', introduces the resultant object as a NP, noted as: [Obj + V(V1+V2 *chéng*) + RP(NP)]. We have noticed that this pattern in Chinese might also encode extended actions, not only punctual actions, differently from English and Italian. Verb-noun compounds avoiding the use of the morpheme *chéng* also appear in Chinese recipes. *Resultative pattern 2* in Chinese displays the occurrence of V1V2 resultative structures, where the second verb expresses the result of the action encoded by the first verb. Alternatively, the resultative verb phrase is encoded through a PP featuring the morpheme *zhì* 'until' followed by the VP. To add details of time duration of the action or state (TP), the NP expressing the time is simply placed after the verb or verbal compound. The verbal phase complement *hǎo* is added to the action verb to express successful completion and and signals the completion of the event expressed by V1.

Therefore, we have argued that all of the three recipes employ the same types of construction to encode the resultant object, but the word order of the elements and the devices employed change greatly.

This study has put forward a number of linguistic observations on the textual genre of recipe in English, Italian, and Chinese through the application of a function-to-form framework of study informed by the tools of construction grammar. Possible lines for further research on the topic include the application of the

function-to-form framework to a wider cross-linguistic corpus of recipes that could provide more evidence for the observations we have gathered. Alternatively, similarly to the research carried out by Kaneyasu and Kuhara (2020), it would be interesting to conduct a study applying the framework to a monolingual corpus composed of different sub-registers of recipe texts.

To conclude, In this research we have demonstrated that, in the textual genre of recipes, languages differ not only in terms of linguistic means and devices employed to encode meanings, but also in terms of cohesive choices, information structure, and decision making on which elements to express linguistically and which to leave unmentioned, ultimately reflecting culturally related conceptions and world views.

Appendix 1 Glossed recipes

1. The English recipe:

1.1 Homemade pumpkin puree

https://www.somewhatsimple.com/homemade-pumpkin-puree/

(E.1) *How To Make Pumpkin Puree*

(E.2) *Start by lopping the tops off your pumpkins. It helps to have a sharp knife.*

(E.3) *Cut the pumpkins in half, top to bottom.*

(E.4) *Scoop out the insides (and save your seeds to make roasted pumpkin seeds!). I used a cookie scoop for most of the insides and some kitchen shears for the tough stringy bits.*

(E.5) *When they're all clean, put them face down on a baking sheet, and add about 1/4 inch of water around them (it doesn't need to be too precise).*

(E.6) *Bake at 350 for 60-90 minutes, checking periodically after 60 minutes.*

(E.7) *They are finished when a fork slides in easily. Mine were perfect after 70 minutes.*

(E.8) *Let the pumpkin cool (this is important, as my burned fingers can attest!) and then scoop the meat out into a blender.*

(E.9) *Blend until well-pureed, pulsing to break up any stubborn bits.*

(E.10) *If it's too thick and hard to puree, add a little water to get things moving.*

(E.11) *Depending on how watery your pumpkins were, you may have a lot or a little water to drain off.*

(E.12) *If you're happy with the consistency of your puree, by all means leave it as is!*

(E.13) *If you want it to be more like what you get out of the can, you can drain it in a colander set over a pot.*

(E.14) *I found that paper towels worked great for lining the colander.*

(E.15) *I let it drain for about 30 minutes and got about 1 1/2 cups of water out.*

(E.16) *Easy Homemade Pumpkin Puree*

(E.17) *SERVINGS: 1 CUP*

(E.18) *This homemade pumpkin puree recipe uses fresh pumpkins and is so easy to make. Learn how to make pumpkin puree in just a few easy steps that can be used in many of your favorite pumpkin recipes.*

(E.19) *Prep Time: 10 mins Cook Time: 1 hr Total Time:1 hr 10 mins*

(E.20) *Ingredients: 4-6 pound pie pumpkins*

(E.21) *Instructions*

(E.22) *Cut the tops off your pumpkins*

(E.23) *Cut the pumpkins in half, from top to bottom*

(E.24) *Scoop out the insides of the pumpkins*

(E.25) *Place the pumpkins face down on a baking sheet*

(E.26) *Add about 1/4 inch of water around them*

(E.27) *Bake at 350 for 60-90 minutes, checking periodically after 60 minutes*

(E.28) *They are finished when a fork slides in easily*

(E.29) *Let the pumpkin cool and then scoop the meat out into a blender*

(E.30) *Notes If you want the puree to be more like what you get out of the can, drain the puree in a colander set over a pot. I found that paper towels worked great for lining the colander.*

Nutrition: Calories: 49 kcal Other Notes: Course: Main CourseCuisine: AmericanKeyword: baked goods

1.2 Pumpkin dinner rolls

https://www.somewhatsimple.com/pumpkin-roll-recipe/

(E.31) *Pumpkin dinner Rolls*

(E.32) *How to Make Pumpkin Dinner Rolls*

(E.33) *Prep – Preheat your oven to 375 degrees F.*

(E.34) *You'll also want to line your baking sheet with parchment paper or a silicone baking mat.*

(E.35) *Yeast Prep – I know a lot of people are intimidated by baking with yeast, but it's really simple once you get the hang of it!*

(E.36) *Start by dissolving the yeast in warm water and a pinch of sugar in your mixing bowl.*

(E.37) *Allow the yeast to sit for about 5 minutes until it's foamy.*

(E.38) *Other Ingredients*

(E.39) *Next, you'll want to add the remaining brown sugar, salt, egg yolk, egg, pumpkin puree, pumpkin pie spice, and a quarter cup of butter to the bowl.*

(E.40) *Mix everything together until it has fully blended.*

(E.41) *Slowly Add Flour – You will only want to stir in 2 cups of flour to start.*

(E.42) *Once that has mixed together, add 1/4 cup of additional flour at a time.*

(E.43) *Once the dough comes together and is slightly sticky to the touch, you'll know it's ready.*

(E.44) *Keep in mind you could potentially add up to 4 1/2 total cups of flour.*

(E.45) *Knead It – When the dough is ready, knead it for about 8 minutes until it's nice and smooth.*

(E.46) *Rise Up – When smooth, place the dough into a greased bowl and let it rise for an hour.*

(E.47) *Punch & Separate – After the dough rises, punch it down and then you'll divide it into two pieces.*

(E.48) *Roll each piece out into a circle and cut each circle into twelve wedges.*

(E.49) *Roll each wedge up into a crescent shape and place them on your prepared baking sheet.*

(E.50) *I love seeing them all lined up on the baking sheet!*

(E.51) *Bake – Bake the pumpkin crescent rolls for about 15 minutes.*

(E.52) *They come out of the oven golden brown and buttery, and so delicious.*

(E.53) *The pumpkin pie spice in the dough makes them smell amazing as they bake!*

(E.54) *My kids devoured these rolls with relish.*

(E.55) *They are definitely going to be a fall staple at our house!*

(E.56) *Recipe Tips & Storage*

(E.57) *Too Much Flour – The biggest mistake I made when I first started was to add too much flour to the dough.*

(E.58) *Adding too much flour can make your rolls a little*

(E.59) *Just add a little at a time, until it's soft and smooth and not overly sticky.*

(E.60) *Extra Homemade – If you want to add an extra homemade touch to these crescent rolls, you can substitute the canned puree with Homemade Pumpkin Puree.*

(E.61) *Storage – Be sure to store any leftover dinner rolls in an airtight container to keep them from going stale.*

(E.62) *Pumpkin Crescent Roll Recipe*

(E.63) *SERVINGS: 24 ROLLS*

(E.64) *Tender and light, with a delicious hint of pumpkin spice, this pumpkin roll recipe makes the perfect addition to any fall meal!*

(E.65) *Prep Time:15 mins Cook Time:20 mins Rising Time:1 hr Total Time: 35 mins*

(E.66) *Ingredients*

(E.67) *1 tablespoon yeast 1/2 cup warm water 1/3 cup brown sugar 1 teaspoon salt 2 teaspoons pumpkin pie spice 1 large egg 1 egg yolk 1 cup pumpkin puree 1/2 cup butter, softened, divided 3 1/2 - 4 1/2 cups flour*

(E.68) *Instructions*

(E.69) *In a large bowl or the bowl of a stand mixer, dissolve the yeast in the warm water with a pinch of brown sugar.*

(E.70) *Let sit five minutes, until foamy.*

(E.71) *Add the remaining brown sugar, salt, pumpkin pie spice, egg, egg yolk, pumpkin puree, and 1/4 cup butter, and mix to combine.*

(E.72) *Stir in two cups of flour, and mix to combine.*

(E.73) *Add additional flour, 1/4 cup at a time until the dough comes together and is only slightly sticky to the touch.*

(E.74) *Knead 5-10 minutes, until smooth.*

(E.75) *Place in a greased bowl and let rise one hour, or until doubled.*

(E.76) *When the dough has risen, gently punch the dough down and divide into two equal sized balls.*

(E.77) *Roll each ball out into a circle that is approximately 18 inches in diameter and spread with two tablespoons of the remaining butter.*

(E.78) *Using a pizza cutter, cut the dough into twelve equal sized wedges.*

(E.79) *Roll up, starting from the wide edge, into a crescent shape.*

(E.80) *Place on a greased or parchment lined baking sheet, and repeat with remaining dough.*

(E.81) *Roll the second ball of dough out, and repeat the process.*

(E.82) *You should be able to fit all 24 rolls on one large baking sheet.*

(E.83) *Bake at 375 degrees for 15-17 minutes, or until the rolls are just golden on top.*

(E.84) *Nutrition Serving: 1 roll · Calories: 207 kcal · Carbohydrates: 36 g · Protein: 5 g · Fat: 5 g · Saturated Fat: 3 g · Cholesterol: 25 mg · Sodium: 136 mg · Potassium: 74 mg · Fiber: 1 g · Sugar: 3 g · Vitamin A: 1728 IU · Vitamin C: 1 mg · Calcium: 16 mg · Iron: 2 mg*

Other Notes Course: Bread Cuisine: American Keyword: fall, thanksgiving

2. The Italian recipe: brioches alla zucca con pasta madre 'Sourdough pumpkin croissants'

http://pandipane.blogspot.com/2013/11/brioches-alla-zucca-con-pasta-madre.html

(I.1) *Ricetta Brioches alla zucca con pasta madre*
recipe Brioche at pumpkin with sourdough
'Recipe: Sourdough pumpkin brioche croissants'

(I.2)*Soffici, coloratissime e naturalmente dolci.*
soft colorful and naturally sweet
'Soft, colorful and naturally sweet.'

(I.3)*(a)Realizzate con un ortaggio di stagione come la zucca*
realized with a vegetable of season as the pumpkin
'Realized with pumpkin, a seasonal vegetable'

(b)che vi irradia tutta la sua energia ed il suo colore... un vero piacere per gli occhi.
that 2PL radiate all the its energy and the its color a real pleasure for the eyes
'radiant with energy and color, a real pleasure for your eyes.'

(I.4)*Ottime tagliate e farcite con crema di nocciole o cioccolata.*
excellent cut and filled with cream of hazelnut or chocolate
'Excellent cut and filled with hazelnut or chocolate spread.'

(I.5)*L' impasto può essere usato anche per un ottimo Pan Brioches cuocendo-lo in uno*
the dough can be used also for an excellent bread Brioches baking-it in an
stampo da 750 gr.
oven-tray of 750 gr
'The dough can also be placed in a 750 gr oven tray and used to bake an excellent brioche bread.'

(I.6) *(a)Ingredienti: 120 gr di purea di zucca bio (cotta), 350 gr di farina Manitoba o 0*
ingredients 120 gr of puree of pumpkin organic cooked 350 grams of flour Manitoba or 0
'Ingredients: 120 grams of organic pumpkin puree, 350 grams of flour (Manitoba, 0 or wholegrain

(b)Integrale (biologica), 60 gr di Pasta Madre Solida, 150-170 gr di acqua, 40 gr di olio di
wholegrain organic 60 gr of sourdough solid 150 170 gr of water 40 gr of oil of
organic), 60 grams of solid sourdough, 150-170 grams of water, 40 grams of soy oil

(c)Soia (Bio e No OGM), 70 gr di zucchero (meglio di canna integrale), q.b. aromi
soy organic and no OGM 70 gr of sugar better of cane whole as needed flavoring
(organic and no OGM), 70 grams of sugar (better if it's whole grain sugarcane), flavoring (organic

(d)(buccia di arancia e limone bio, vaniglia) e 3-5 gr di sale.
skin of orange and lemon organic vanilla and 3-5 grams of salt
orange and lemon skin, vanilla) as needed and 3-5 grams of salt.'

(I.7)*(a)Se si vuole variare lievito, in sostituzione della Pasta Madre Solida:*
if REFL PRON want vary yeast in substitution of sourdough solid
'If you want to substitute firm sourdough with yeast:

(b)*Con Pasta Madre liquida (licoli): usarne 80 gr e togliere 20 gr da-ll' acqua da*
with sourdough liquid licoli use 80 gr and remove 20 gr from-the water to
usare per l' impasto
use for the dough

'With liquid sourdough (licoli): use 80grams, and remove 20 grams from the water used for the dough.'

(c)Con Lievito di Birra: usarne 1gr per fare una Biga con 20 gr di acqua e 40 gr
with yeast of beer use 1 gr to make a sourdough with 20 gr of water and 40 gr

di farina, quando sarà triplicata di volume usarla.
of flour when be tripled of volume use

'With beer yeast, use 1 gram and combine with 20 grams of water and 40grams of flour to make a sourdough. Use it when it will be tripled in volume.'

(I.8)*Procedimento*:
directions
'Directions'

(I.9)*Preparate la purea di zucca.*
prepare the puree of pumpkin
'Prepare the pumpkin puree'

(I.10) *(a)Prendete una zucca non molto grande, lavate bene la buccia,*
take a pumpkin not very big wash well the skin
'Take a medium size pumpkin, wash the skin very well,

(b)tagliar-la a grosse fette e cuocer-le in una pentola con un dito d' acqua
cut-it in big slices and cook-them in a pan with a finger of water
'cut it in large slices and cook them in pan with a little water'

(c)o metter-le in forno (avvolta in un pezzo di stagnola) per 30 minuti.
or put-them in oven wrapped in a piece of tinfoil for 30 minutes
'or put them in the oven (wrapped in a piece of tinfoil) for 30 minutes'

(I.11) *Fate raffreddare e con un cucchiaio scavare via la polpa dalla buccia.*
let cool and with a spoon excavate away the pulp of-the skin
'Let cool and with a spoon excavate the pulp off the skin'

(I.12) *Questa è la nostra purea, schiacciate-la ora con una forchetta e usatene 120gr.*
this is the our puree mash-it now with a fork and use 120 gr
'This is our puree, now mash it with a fork, use 120 grams.'

(I.13) *Potete impastare comodamente a mano in una ciotola o con impastatrice o*
can knead comfortably by hands in a bowl or with kneading machine or
planetaria.
mixer
'You can knead comfortably by hand in a bowl, using a kneading machine or a mixer'

(I.14) *(a)Mettete in una ciotola il quantitativo di polpa di zucca (120gr),*
put in a bowl the quantity of pulp of pumpkin 120 gr
'Put in the bowl the pumpkin puree (120 gr)''

(b)la Pasta Madre (a pezzetti), lo zucchero e parte dell' acqua (es. 100 gr),
the sourdough in pieces the sugar and part of-the water ex 100 grams
'the sourdough cut in pieces, the sugar and part of the water (for example 100 grams)'

(c)ora mescolate bene il tutto ottenendo un composto cremoso.
now mix well the everything to-obtain a mixture creamy
'now mix everything very well to obtain a creamy mixture'

(I.15) *(a)Aggiungete la farina e gradualmente inserite la restante acqua*
add the flour and gradually insert the remaining water
'Add the flour and gradually insert the remaining water'

(b)può darsi che non serva tutta
might that NEG need all
'you might not need it all'

(c)perchè ci sono zucche più acquose
because there are pumpkins more watery
'because some pumpkins are more watery than others'

(d)quindi dovrete regolarvi voi
so have to regulate you
'so you'll have to adjust the ingredients on your own'

(e)in base alla consistenza che prende l' impasto
depending on-the consistency that takes the dough
'depending on the consistency that the dough takes'

(f)senza esagerare.
without exaggerate
'without exaggeration'

(I.16) *Quando sarà incordato aggiungete a filo l' olio di soia,*
when be blended add at thread the oil of soy
'When the dough will be blended, add some soy oil slowly'

(a)impastate fino a che l' impasto non sarà omogeneo, liscio ed elastico.
knead until the dough NEG be homogeneous smooth and elastic
'Knead until the dough becomes homogeneous, smooth and elastic.'

(I.17) *(a)Pirlate un po l' impasto a formare una bella palla liscia*
spin a bit the dough to form a good ball smooth
'Spin the dough a little bit to form a nice, smooth ball. '

(b)oleate leggermente e mettetela in una ciotola a riposare coperta per 2-3 ore
oil slightly and put-it in a bowl to rest covered for 2-3 hours
'Oil it slightly, put it in a bowl and cover it up. Let it rest for 2-3 hours.'

(I.18) *(a)Mettete ora in frigo per una decina di ore*
put now in fridge for a ten of hours
'Now put it in the fridge for around ten hours.'

(b) (passaggio non obbligatorio ma comodo per organizzarsi con i tempi).
step NEG obligatory but convenient to organize with the time
(not mandatory, but convenient to get organized with the timing)

(I.19) *(a)Tolto dal frigo fate tornare a temperatura ambiente per un' ora,*
remove from-the fridge let return at temperature room for one hour
'Remove the dough from the fridge and let it warm up to room temperature for one hour'

(b) stendete con il mattarello l' impasto sgonfiandolo bene ma delicatamente,
spread-out with the rolling pin the dough deflating-it well but gently
'Spread out the dough with the rolling pin deflating it gently '

(c) tirate l' impasto all' altezza di circa 5 mm
stretch the dough at-the height of about 5 mm
'Stretch it until it gets around 5 mm high.'

(d) e tagliate i triangoli che andrete ad arrotolare per fare le brioches
and cut the triangles that go to roll-up to make the brioches
'and cut out the triangles that you're going to roll up to make the brioches'

(d)(ne escono 12 circa).
CLIT PR get 12 about
'you'll get around 12 of them'

(I.20) *Vedete come fare sul post delle brioches semplici.*
see how make on-the post some brioches simple
'Check out the post to see how to make simple brioches'

(I.21) *Ponete a lievitare direttamente sulla placca da forno foderata con carta da forno.*
put to rise directly on-the tray of oven wrapped with paper of oven
'Put the dough to rise on the oven tray wrapped with parchment paper'

(I.22) *Attendete il raddoppio o più del volume e cuocete.*
wait the doubling or more of-the volume and bake
'wait until it redoubles in volume or even a bit more and bake'

(I.23) *(a)Prima d' infornare io nebulizzo la superficie con acqua,*
before of bake 1SG spray the surface with water
'Before baking in the oven I usually spray the surface with water'

(b)rimarranno ancor più soffici e non si svilupperà una crosta dura.
remain even more soft and NEG REFL develop a crust hard
'they will get softer and won't develop a hard crust'

(I.24) *Cottura: A forno caldo, 160-170 °C, mettete la placca nella parte bassa e cuocete*
baking: At oven hot 160-170 °C put the plaque in-the part low and bake
'Baking directions: Put the tray in the lower part of the hot oven (160°-170°) and bake

per circa 20 minuti.
for about 20 minutes
for about 20 minutes.'

(I.25) *Tolte dal forno farle raffreddare su una gratella.*
removed from-the oven let-them cool on a grill
'Once you remove them from the oven, let them cool on a grill'

3. The Chinese recipe: 南瓜椰蓉面包 Nánguā yē róng miànbāo 'Pumpkin coconut shreds bread rolls'

https://home.meishichina.com/recipe-566207.html

(C.1) 南瓜椰蓉面包
Nánguā yē róng miànbāo
pumpkin coconut shreds bread
'Pumpkin coconut shreds rolls'

(C.2) 食材明细
shícái míngxì
ingredient details
'Ingredients'

(C.3) 主料 面包粉350克、南瓜泥175克、白糖10克、黄油20克、干酵母3克、椰蓉适量
zhǔ liào miànbāofěn 350 kè nánguā ní 175 kè báitáng 10 kè

main ingredients flour 350 grams pumpkin pulp 175 grams sugar 10 grams
'Main ingredients: flour 350 grams, pumpkin pulp 175 grams, sugar 10 grams, butter 20 grams,

huángyóu 20 kè,
butter 20 grams

gàn jiàomǔ 3 kè yē róng shìliàng
dry yeast 3 grams coconut shreds as-needed
dry yeast 3 grams, coconut shreds as needed.'

(C.4) 调料 盐2克
Tiáoliào yán 2 kè
seasoning salt 2 grams
'Seasoning: salt 2 grams'

(C.5) 口味 甜味、工艺 烤、 耗时 数小时、难度 普通
Kǒuwèi tiánwèi gōngyì kǎo hào shí shù xiǎoshí nándù pǔtōng
flavour sweet way of cooking bake required time several hours difficulty normal
'Flavour: sweet Way of cooking: baking Required time: several hours Difficulty: normal'

(C.6) 南瓜椰蓉面包的做法步骤
nánguā yē róng miànbāo de zuòfǎ bùzhòu
pumpkin coconut shreds bread DET recipe step
'Pumpkin coconut shreds bread directions'

1

(C.7) 成品图来一张，早餐配一杯牛奶不错哦。
chéng pǐn tú lái yī zhāng zǎocān pèi yì bēi niúnǎi bù cuò ó
finished product picture come one CLF breakfast match one cup milk NEG bad oh
'Here's a picture of the final product, great for breakfast with a cup of milk!'

(C.8) 美好的一天可以从营养早餐开始。
měihǎo de yì tiān kěyǐ cóng yíngyǎng zǎocān kāishǐ
perfect DET one day can from nutritious breakfast start
'A perfect day starts from a nutritious breakfast'

2

(C.9)
(a) 南瓜泥，用南瓜去皮切块蒸熟，
Nánguā ní yòng nánguā qù pí qiē kuài zhēng shú
pumpkin puree use pumpkin eliminate skin cut pieces steam cook
'As for the pumpkin puree, peel the pumpkin, cut in pieces and steam

(b) 然后入榨汁机榨成汁，
ránhòu rù zhàzhījī zhà chéng zhī
then insert juicer press become juice
then put it in the juicer and juice it

(c) 用175克南瓜泥。
yòng 175 kè nánguā ní
use 175 grams pumpkin puree
use 175 grams of pumpkin puree'

(C.10) 然后除黄油外所有材料放入厨师机内。
ránhòu chú huángyóu wài suǒyǒu cáiliào fàng rù chúshījī nèi
then except butter out all ingredient put insert mixer in.
'Then put all of the ingredients in the mixer except the butter.'

(C.11) 启动搅拌程序然后搅拌5分钟。
qǐdòng jiǎobàn chéngxù ránhòu jiǎobàn 5 fēnzhōng
activate mixing program then mix 5 minutes
'Activate the mixing program and mix for 5 minutes'

(C.12) 加入黄油，在继续启动搅拌程序，搅拌5分钟。
jiā rù huángyóu zài jìxù qǐdòng jiǎobàn chéngxù jiǎobàn 5 fēnzhōng
add insert butter again continue activate mixing program mix 5 minutes.
'Insert butter and continue mixing for 5 minutes'

(C.13) 手揉也可以。
shǒu róu yě kěyǐ
hand knead also can
'You can also knead the mixture by hand'

(C.14) 能拉出膜即可。
néng lā chū mó jíkě
can pull out film sufficient
'The mixture will be ready when you'll be able to pull it out as a film without breaking it.'

3
(C.15) 然后整理成面团，入不锈钢碗里。
ránhòu zhěnglǐ chéng miàntuán rù bùxiù gāng wǎn lǐ
then arrange become dough insert stainless steel bowl in
'Then knead the mixture until it becomes dough and put it into a stainless steel bowl.'

(C.16) 如果没有厨师机的可以用手揉，时间更长一些，约10-15分钟这样。

(a)rúguǒ méi yǒu chúshījī de
If NEG have mixer DET
'If you don't have a mixer

(b)kěyǐ yòng shǒu róu
can use hands knead
you can use your hands to knead the dough

(c)shíjiān gèng chǎng yī xiē yuē 10-15 fēnzhōng zhè yàng
time more long a little about 10-15 minutes this way
hand kneading will take you about 10-15 minutes more'

(C.17) 这样会比较辛苦一些。
zhè yàng huì bǐjiào xīnkǔ yī xiē
this way might quite hard a little
'This way you might have to do some hard work…'

(C.18) 吃货辛苦一些也没事。
chīhuò xīnkǔ yī xiē yě méi shì
foodie hard a little also no problem
'…but for a real foodie working hard in the kitchen is not a problem. '

4

(C.19) 盖上湿布，发酵至两倍大，如图所示。
gài shàng shī bù fājiào zhì liǎng bèi dà rú tú suǒ shì
cover up wet cloth ferment until two times big as picture NOM show
'Cover up the bowl with a wet cloth and let it rise until it doubles in volume, as shown in the picture'

(C.20) 冬天需要将碗座入温水上面，也可以放入烤箱，烤箱最后一层放一盆开水，然后关上烤箱门，进行发酵，这样约50分钟就可以发酵至两倍大了。

(a) dōngtiān xūyào jiāng wǎn zuò rù wēn shuǐ shàngmiàn
winter need PART bowl sit insert warm water above
'In the winter, you'll need to put the dough bowl into a bowl of warm water

(b) yě kěyǐ fàng rù kǎoxiāng
also can put insert oven
or inside the oven

(c) kǎoxiāng zuìhòu yī céng fàng yī pén kāi shuǐ
oven last one layer put one container boiling water
where you have placed a container full of boiling water

(d)*ránhòu guānshàng kǎoxiāng mén jìnxíng fāxiào*
then close oven door execute fermentation
then close the oven door and leave the dough there to rise

(e) zhè yàng yuē 50 fēnzhōng jiù kěyǐ fājiào zhì liǎng bèi dà le
this way about 50 minutes indeed can ferment until two times big MOD
this way your dough will indeed have doubled in 50 minutes.'

5

(C.21) 分别分成大小一样的小面团，揉成圆形，盖上湿布或者保鲜膜，放置好15-20分钟。

(a) fēnbié fēn chéng dàxiǎo yīyàng de xiǎo miàn tuán
separate divide become size same DET little dough balls
'Separate your dough to form a few small dough balls of the same size

(b) róu chéng yuán xíng
knead become round shape
knead them into a round shape

(c) gàishàng shī bù huòzhě bǎoxiān mó
cover wet cloth or cling film
then cover them with a wet cloth or cling film

(d) fàngzhì hǎo 15-20 fēnzhōng
put well 15-20 minutes
and let them rest for 15-20 minutes.'

6
(C.22) 取一份面团，擀成长舌状，
qǔ yī fèn miàn tuán gǎn chéng cháng shé zhuàng
get one CLF dough ball roll become long tongue shape
'Press and roll your small dough balls to make them tongue shaped.'

7
(C.23) 然后朝一边卷起来。
ránhòu zhāo yī biān juǎn qǐlái
then towards one side roll up
'Then roll them up on a side'
8
(C.24) 放入托纸
fàng rù tuō zhǐ
put insert hold paper
'Put the rolls into the paper holders.'

9
(C.25) 表面用刀划一下，均匀的撒一层椰蓉
biǎomiàn yòng dāo huà yī xià jūnyún de sā yī céng yē róng
surface use knife cut a bit evenly DET sprinkle one layer coconut shreds
'Make some cuts on the surface of the rolls with the knife and sprinkle the coconut shreds evenly. '

10
(C.26) 入烤箱，发酵至40分钟。
rù kǎoxiāng fājiào zhì 40 fēnzhōng
insert oven ferment until 40 minutes
'put the rolls into the oven and let them rise for 40 minutes'

(C.27) 烤箱底部放入一碗开水，这样发酵时间更快。
kǎoxiāng dǐ bù fàng rù yī wǎn kāi shuǐ zhè yàng fāxiào shíjiān gèng kuài
oven lower part put insert one bowl boiling water this way fermentation time more quick
'Insert a bowl of boiling water at the bottom of the oven, so that it will rise more easily.'

(C.28) 然后进行烘烤，烤箱上下火180度烘烤20分钟
ránhòu jìnxíng hōngkǎo kǎoxiāng shàng xià huǒ 180 dù hōngkǎo 20 fēnzhōng

then execute bake oven up down fire 180 degree bake 20 minutes
'Then bake it in the oven at 180 degrees for 20 minutes'

(C.29) 每家烤箱品牌大小不一样，所设置的温度和时间也不一样哦。
měi jiā kǎoxiāng pǐnpái dàxiǎo bù yīyàng suǒ shèzhì de wēndù hé shíjiān yě
every home oven brand size not same NOM set DET temperature and time also
bù yīyàng ó
not same oh
'Every oven is different! Adjust the temperature of the oven and the cooking time depending on the features of your oven.'

(C.30) 不宜温度太高也不宜温度太低。
bù yí wēndù tài gāo yě bù yí wēndù tài dī
not suitable temperature too high also not suitable temperature too low
'The temperature should not be too high or too low.'

11

(C.31) 取出，成品图，来一张。
qǔ chū chéng pǐn tú lái yī zhāng
take out finished product picture come one CL.
'Take out of the oven and that's finished! Here's a picture of the rolls.'

(C.32) 早餐更配哦！
zǎocān gèng pèi ó
breakfast more fit oh
'For a fantastic breakfast!'

(C.33) 小窍门
xiǎo qiàomén
small trick
'Small tricks'

(C.34) 如果配方搅拌出来的面团稀的话，可以放入一些面粉。
rúguǒ pèifāng jiǎobàn chū-lái de miàntuán xī dehuà kěyǐ fàng rù yīxiē miànfěn
if recipe mix come-out DET dough watery if can put insert some flour
'If the dough it's too wet after mixing, just add some more flour.'

(C.35) 因为各种品牌的面包粉不一样。
Yīnwèi gè zhǒng pǐnpái de miànbāofěn bù yīyàng
because every type brand DET flour not same
'Every type of flour is slightly different… '

(C.36) 看情况而定。
kàn qíngkuàng ér dìng
look situation and decide
'…so flour dose may vary. '

(C.37) 来自 美食天下 逝去的爱情 的作品
Lái zì měi shí tiān xià shìqù de àiqíng de zuòpǐn

come from good food sky under dead DET love DET work
'Recipe from "The best food" Blogger name "Lost love"'

(C.38) 使用的厨具:厨师机、烤箱
shǐyòng de chú jù chúshījī kǎoxiāng
useful DET kitchen tools mixer oven
'Kitchen tools: mixer, oven.'

(C.39) 所属分类： 烘焙 早餐 西餐
suǒshǔ fēnlèi hōngbèi zǎocān xī cān
affiliated category bake breakfast western food
'Category: baking, breakfast, western food.'

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Corpus and other on-line resources

Muhai project: https://muhai.org/

Cambridge online dictionary : https://dictionary.cambridge.org/dictionary/english/recipe

Leipzig glossing rules: https://www.eva.mpg.de/lingua/pdf/Glossing-Rules.pdf

English recipes: Pumpkin dinner rolls recipe https://www.somewhatsimple.com/pumpkin-roll-recipe/

Easy homemade pumpkin puree *https://www.somewhatsimple.com/homemade-pumpkin-puree/*

Italian recipe: Brioches alla zucca con pasta madre
http://pandipane.blogspot.com/2013/11/brioches-alla-zucca-con-pasta-madre.html

Chinese recipe: *Nánguā yē róng miànbāo* 南瓜椰蓉面包
https://home.meishichina.com/recipe-566207.html