Space and Events

Spatial PPs and Motion VPs

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Declaration

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Abstract

This thesis studies the internal syntax and semantics of spatial PPs, i.e. phrases headed by words such as (in English) *in, on, at, above, in front of, from, out of, through, around,* etc. as well as their role and contribution in motion events when combined with different motion verbs. I argue that these adpositions as used in spatial relationships are Relators. They relate entities, positions or events to specific entities or positions. For example, *in/on/at* relate a Figure to specific Spaces with reference to a Ground. Thus I refer to them as Place Relators. As to the elements *to/from/through,* I refer to them as Path Relators. They relate the Figure to specific points in a path domain.

Based on the way I view these elements, the minimum P projection I propose is [Rel_{PATH}P [Rel_{PLACE}P]]. Furthermore, adapting ideas of Svenonius (2010), I decompose Rel_{PLACE}P into [Rel_{PLACE}P [AxPartP [KP]]]. The scope of the materials is extended to analyse equivalent elements in Kurdish and Arabic for which no full descriptions are available. The P projection proposed provides a better understanding of spatial adpositions in these languages. On the one hand, it helps distinguish the elements that belong to the P category in e.g. Arabic, which has true and semi adpositions. On the other hand, Kurdish data show that there is more to the P projection proposed through suggesting another functional head, namely PLACE.

Furthermore, I investigate the role of spatial PPs in motion events when combined with different motion verbs. Following Ramchand's (2008) first-phase syntax of verbs and based on the availability of a Res feature, I divide motion verbs into two classes: [Proc] and [Proc, Res] verbs. The occurrence of different spatial PPs with these two types of motion verbs is closely examined and discussed in the second half of the thesis. It is shown that there are two types of events expressed by such combinations: Process and (resultative) Transition. Process events can be expressed by [Proc] Vs and different spatial PPs. The PP in such an event structure mostly defines the location of the activity. Transition events can be expressed lexically by [Proc, Res] Vs in general. The spatial PP in such lexical Transition events does not contribute much to the event structure either, except for PPs headed by Ps such as *in/on/behind/to/into,* which can represent the culmination (upper bound) of the BECOME event involved in Transition events.

Further I show that resultative Transition events can also be expressed syntactically by [Proc] Vs combined with specific spatial PPs that denote an end point (a culmination), such as English *into/onto*-phrases. In Kurdish and Arabic, the presence of a bounded GoalRelP headed by an adposition meaning ‘to’ and a lexicalised AxPart is crucial to give rise to a resultative Transition event with a [Proc] V. In such cases, since the PPs can suggest a culmination in the event structure, the combination suggests a Transition event that involves a BECOME event. Syntactically I present this BECOME event as a null Res element.

Acknowledgements

بـــــسم الله الرحمـــن الرحيـــــــم

In The Name Of Allah, The Beneficent, The Merciful

الحمـــد لله رب العالميـــن

Praise Be To Allah, The Lord Of The Worlds

(Qur'an, surat al-Fatiḥah: verses 1-2)

Writing a thesis is a tough journey, but during this journey, we have the chance to meet people without whom this journey would be even tougher. Hereby, I would like to thank them sincerely. Above all, I am sincerely grateful to two people: William van der Wurff and Anders Holmberg, my supervisors. I cannot thank them enough for their continuous support and guidance. They were always there to listen and discuss my ideas, showing a genuine interest. This always inspired and encouraged me to work harder and come up with more ideas.

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I would like to acknowledge the financial support of the Higher Committee for Education Development (HCED) in Iraq, which enabled me to embark on the PhD process and accomplish this thesis. I am indebted to the audience at the different conferences and workshops where some of the work in this thesis has been presented (e.g. the 8th and 9th Newcastle Postgraduate Conference in Linguistics, the North-East Research Away Day in Linguistics/ Newcastle University, Cambridge Comparative Syntax Conference (CamCoS2)/ University of Cambridge, Workshop on Aspect and Argument Structure of Adverbs and Prepositions (WAASAP 2)/ University of Tromsø, and the Workshop on Adpositions and PPs/ Newcastle University). Their questions, comments and feedback helped expand my knowledge of the topic, encourage me to note more details and enhance my ideas.

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Abbreviations

1	First person
2	Second person
3	Third person
ACC	Accusative case
AXPart	Axial Part
ASP	Aspect
DEF	Definite article
DU	Dual
EZ	Ezafe marker
F	Feminine
GEN	Genitive case
IA	Iraqi Arabic
INDF	Indefinite article
Init	Initiation
IMP	Imperative
K	Case
M	Masculine
MSA	Modern Standard Arabic
NOM	Nominative case
P	Preposition
PC	Pronominal clitic
PL	Plural
POSS	Possessive
PRE	Preverbal element
Proc	Process
PRS	Present
PST	Past
Rel	Relator
Res	Result
SG	Singular
V	Verb
Ø	No corresponding element

Key to Symbols used in Transliteration of Kurdish Data[1]

Consonants

Kurdish alphabet	Symbol	Phonetic description
ئ	’	glottal stop
ب	b	voiced bilabial stop
پ	p	voiceless bilabial stop
ت	t	voiceless alveolar stop
ج	j	voiced alveopalatal affricate
چ	ch	voiceless alveopalatal affricate
ح	ḥ	voiceless pharyngeal fricative
خ	kh	voiceless uvular fricative
د	d	voiced alveolar stop
ر	r	voiced alveolar flap
ڕ	ř	voiced alveolar trill
ز	z	voiced alveolar fricative
ژ	zh	voiced postalveolar fricative
س	s	voiceless alveolar fricative
ش	sh	voiceless postalveolar fricative
ع	‘	voiced pharyngeal fricative
غ	gh	voiced uvular fricative
ف	f	voiceless labiodental fricative
ق	q	voiceless uvular stop
ک	k	voiceless velar stop
گ	g	voiced velar stop
ل	l	voiced alveolar lateral approximant
ڵ	ł	voiced velarized lateral
م	m	voiced bilabial nasal
ن	n	voiced alveolar nasal
ه	h	voiceless glottal fricative

[1] Since this is a grammatical study, I transliterate the data of Kurdish and Arabic. However, to give the readers unfamiliar with Kurdish and Arabic the ability to pronounce the words accurately, I try to vocalize the vowels as well. For this purpose, I use the Romanisation system of the American Library Association, which is accessible via http://www.loc.gov/catdir/cpso/romanization/arabic.pdf. The phonetic description given is according to the International Phonetic Alphabet (IPA) Unicode chart, which is available via http://westonruter.github.io/ipa-chart/keyboard/.

و	w	voiced labio-velar approximant
یـ	y	voiced palatal approximant

Vowels

ه	a	mid central unrounded
ا/ئا	ā	open back unrounded
و	u	close central rounded
وو	ū	close back rounded
ۆ	o	close-mid back rounded
ێ	e	close-mid front unrounded
-	i	close central unrounded
ی	ī	close front unrounded

Key to Symbols used in Transliteration of Arabic Data[2]

Consonants

Arabic alphabet	Symbol	Phonetic description
ء	’	glottal stop
ب	b	voiced bilabial stop
ت	t	voiceless alveolar stop
ث	th	voiceless dental fricative
ج	j	voiced alveopalatal affricate
ح	ḥ	voiceless pharyngeal fricative
خ	kh	voiceless uvular fricative
د	d	voiced alveolar stop
ذ	dh	voiced dental fricative
ر	r	voiced alveolar trill
ز	z	voiced alveolar fricative
س	s	voiceless alveolar fricative
ش	sh	voiceless postalveolar fricative
ص	ṣ	voiceless pharyngealized fricative
ض	ḍ	voiced pharyngealized stop
ط	ṭ	voiceless pharyngealized stop
ظ	ẓ	voiced pharyngealized fricative
ع	‘	voiced pharyngeal fricative
غ	gh	voiced uvular fricative
ف	f	voiceless labiodental fricative
ق	q	voiceless uvular stop
ك	k	voiceless velar stop
ل	l	voiced alveolar lateral approximant
م	m	voiced bilabial nasal
ن	n	voiced alveolar nasal
ه/ة	h	voiceless glottal fricative
و	w	voiced labio-velar approximant

[2] The symbols listed under Arabic are the same in Iraqi Arabic, but in the latter, there are a few other phonemes, such as [g] (voiced velar stop) represented as ‘g’, [ʧ] (voiceless alveopalatal affricate) represented as ‘ch’, [o] (close-mid back rounded) represented as ‘o’, and [e] (close-mid front unrounded) represented as ‘e’.

ي	y	voiced palatal approximant

Vowels

◌َ	a	open front unrounded lax
◌َا	ā	open front unrounded tense
◌ُ	u	close back rounded lax
◌ُو	ū	close back rounded tense
◌ِ	i	close front unrounded lax
◌ِى	ī	close front unrounded tense

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Chapter 1. Introduction

1.1 Introduction

This thesis is concerned with the syntax and semantics of spatial adpositions internally and externally. On the internal level, I examine the syntactic and semantic properties and function of the elements inside phrases headed by these adpositions in a spatial relationship. On the external level, I study the role of spatial PPs in motion events, in particular when they occur with two types of motion verbs ([Proc(ess)] Vs and [Proc, Res(ult)] Vs). The main idea argued for is that the lexical semantics of spatial adpositions is directly reflected or mapped in syntax at both the internal level (cf. e.g. Svenonius 2008, 2010) and external level (cf. e.g. Ramchand 2008; Gehrke 2008). While detailed accounts of relevant literature will be provided in each chapter separately, for the purpose of setting the scene, in this chapter I introduce the main issues that motivated the choice of this topic, the contribution of this study to the syntax and semantics of spatial PPs and the general theory assumed.

The chapter is structured as follows. In section 1.2, I provide some brief background about spatial adpositions. In section 1.3, I present the main issues dealt with in the thesis and the proposals made. Then I lay down the position of this thesis within the theoretical framework adopted in this thesis, section 1.4. This includes the cartographic approach assumed in the analyses, the syntax-semantics interface and the lexicon-syntax relation. Finally, in section 1.5 I explain how the thesis is organised.

1.2 Background: Spatial Adpositions

First, in general, adpositions have been defined as "grammatical tools which mark the relationship between two parts of a sentence" (Hagège 2010: 1).[3] In a spatial relationship, these two parts are referred to as the Figure and the Ground. [4] The Figure is the entity whose position is determined with reference to the Ground, which can be

[3] I use the term adposition to refer to all adpositional forms (prepositions, postpositions and circumpositions); where necessary, I use the more precise terms.

[4] The terms Figure and Ground are adopted from Talmy (1975). Other terms for Figure and Ground are Theme and Reference object (Zwarts 1997) or Trajector and Landmark, common in the cognitive tradition (Lakoff 1987; Langacker 1987).

another entity or a location. For example, in (1) X stands for the Figure, while Y represents the Ground:

(1) a. X is in/on/at Y.
b. X walked to/from/through Y.

Usually the pattern in (1a) is referred to as a locative relation, because the Figure's position is determined on the basis of another location in a static relation and a static verb is used. Concrete examples are: *the cat is on the dictionary, Tahir sits in the garden*, etc. In contrast, the pattern in (1b) suggests a directional relation, because a path notion is involved, and a motion verb is used. Examples of such a relation are: *the cat ran to the door, Tahir walked through the tunnel*, etc.

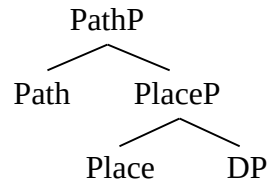
Spatial adpositions have attracted the attention of many linguists and researchers over the last two decades. Special focus has been given to their internal syntax and semantics (e.g. Jackendoff 1983, 1990; Wunderlich 1991; Nam 1995, 1996; Fong 1997, 2001; van Riemsdijk & Huybregts 2002; Zwarts 2005, 2008a, 2008b; Kracht 2002, 2008; Koopman 2000, 2010; den Dikken 2010; Svenonius 2008, 2010; Pantcheva 2011; Romeu 2013, 2014). In addition, the effect and interpretation of spatial adpositions in event structure or VP structure has been considered in several studies (e.g. Folli & Ramchand 2005; Son 2006; Pantcheva 2007; Fábregas 2007; Gehrke 2008; Ramchand 2008; Romeu 2014).[5]

The syntactic structure of spatial P(repositional) P(hrase)s is generally argued to be composed of two layers: Place and Path (Jackendoff 1983, 1990, 1996). This structure is obviously driven by the semantic distinction between place and path adpositional elements. Moreover, there is a universal assumption that the Path layer embeds the Place layer, allowing the latter to be adjacent to the DP complement (van Riemsdijk 1990; van Riemsdijk & Huybregts 2002; Koopman 2000, 2010; Kracht 2002, 2008;

[5] I refrain from discussing the thorny issue of the categorization of adpositions, i.e. whether they are lexical or functional elements. For example, den Dikken (2010) and Svenonius (2010) classify adpositions as lexical elements due to their parallel syntactic and semantic configuration to nouns, verbs and adjectives. A contrary view is taken by Grimshaw (1991, 2000) and Baker (2003), who argue that adpositions are functional elements, similar to determiners, inflections and complementizers. Yet another, in-between, view is that of Emonds (1985) and van Riemsdijk (1990, 1998), who classify adpositions as semi-lexical elements, admitting both lexical and functional properties to them. I will follow the third, 'mixed', analysis and regard adpositions as semi-lexical categories; this will not affect the syntactic or semantic discussion of adpositions that follows.

Svenonius 2010; den Dikken 2010; Noonan 2010). This is clearly observed when a place and path adposition co-occur, such as *from behind the door* vs. **behind from the door*. Thus, the minimal internal syntactic structure of a spatial PP cross-linguistically, as assumed in most of the above studies, is as in (2).

(2)



Each of the Path and Place projections can be further decomposed into several functional heads (see e.g. Svenonius 2010; Terzi 2010; Noonan 2010; Pantcheva 2011).

1.3 The Main Issues and Proposals

The data focused on in this thesis are derived from English (a Germanic language), Central Kurdish (an Indo-Iranian language), Modern Standard Arabic (MSA) and Iraqi Arabic (IA) (a Semitic language).[6] Kurdish is a member of the Indo-Iranian group of languages. It has several dialects, the two main ones being Kurmanji (spoken by Kurds in Iraq, Syria, Turkey, Armenia and Azerbaijan), and Sorani (spoken by Kurds in Iraq and Iran). In this thesis, I focus on the Sorani dialect spoken in Iraq, which is usually referred to as a written form of Central Kurdish (for an overview of Kurdish linguistics, see Haig & Matras 2002; Haig & Öpengin 2014). The two varieties of Arabic used are MSA and IA, which both belong to the Semitic family of languages. MSA is that variety of Arabic which is commonly used in the modern Arab world in writing, education and media (see Holes 2004; Ryding 2005, 2014). As to the data from the Iraqi Arabic dialect, they are based on the Arabic variety spoken in Baghdad/ Iraq. The choice of these languages is based on the fact that these languages are typologically

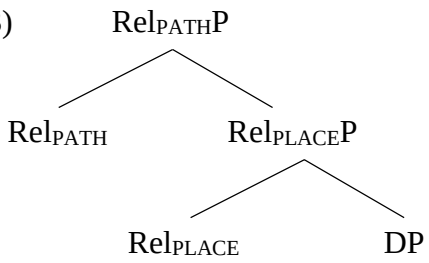
[6] The set of spatial adpositions examined across English, Kurdish and Arabic is by no means exhaustive. However, I include the most common ones. The examples of English are cited from the British National Corpus (BNC), while those of Kurdish and IA, for which no corpora exist, are made up. Where there could be any doubt, the grammaticality of the examples was checked with other native speakers. Those of MSA are cited from the arabiCorpus. The arabiCorpus is developed and maintained at Brigham Young University. It includes data of five main categories: Newspapers, Modern Literature, Nonfiction, Egyptian Colloquial and Premodern. At the time of writing, the total number of words in the whole corpus is 173,600,000. The corpus can be accessed freely through this link: http://arabicorpus.byu.edu.

very different, which provides a wide scope set of data to investigate the topics in this thesis. As English has been examined in a large number of literature, it provides a good platform to start with in the discussion and application of the ideas proposed. As to Kurdish and Arabic, these languages are under-researched in several grammatical aspects, specifically in the syntax and semantics of spatial PPs. Insights from these languages provide interesting materials, which can be expected to further enrich our understanding of spatial adpositions and motion events.

Within the internal syntactic and semantic studies of spatial adpositions, such as English *in/on/above/to/from/through*, nothing in these studies sheds lights on the precise function of these elements in a spatial relationship. The general assumption made or followed in the literature is that spatial adpositions denote a relationship (see e.g. Nam 1995, 1996; Fong 1997, 2001; Zwarts 2005, 2008a, 2008b; Svenonius 2010; Pantcheva 2011). Denoting a relationship is not a function per se, but a general definition used to describe spatial adpositions. Thus, this imprecise description implies a gap in the literature with regard to our understanding of the role of spatial adpositions. Accordingly, this thesis intends to provide a more precise function of spatial adpositions. This will be based on a syntactic-semantic analysis that maps the components involved in the semantics of spatial adpositions and their representation in the syntactic structure.

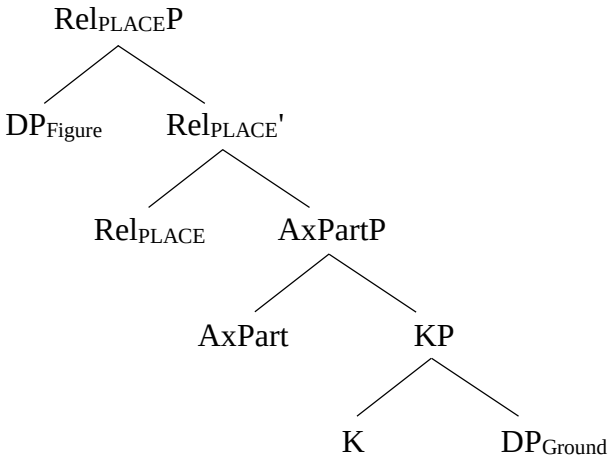
I propose that spatial adpositions are Relators in a specific spatial domain. More precisely, I propose that elements such as English *in/on/above* are Relators in a place domain, while elements such as *to/from/through* are Relators in a path domain. Elements like *in/on/above* relate a Figure to a specific Space with reference to a Ground, and I refer to them as Place Relators and represent them as Rel_{PLACE} in the syntactic structures. As to the elements *to/from/through*, these relate the Figure to a specific point of a path. I refer to them as Path Relators and represent them as Rel_{PATH} in the tree structures. I adopt the wide spread assumption that elements used in a path domain are higher in the structure than elements used in a place domain. Thus, following the cartographic approach, the minimal structure I propose is as in (3).

(3)



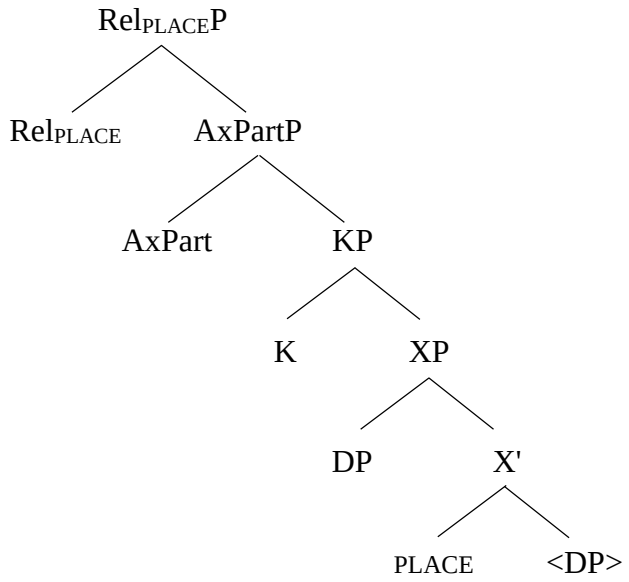
Each of these projections will be further analysed and examined in English and the two other languages, for which no previous studies exist in the literature. For example, for English I propose the structure in (4) for the decomposition of Rel$_{PLACE}$P.

(4)



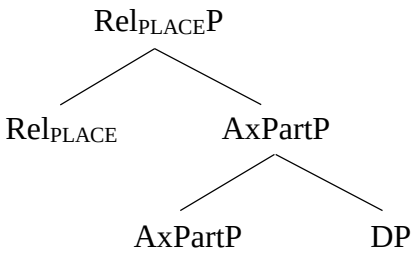
For Kurdish, I propose the structure in (5). The main difference between (4) and (5) is the presence of a unique element recognized phonologically in Kurdish, which is PLACE. This element is suggested based on proposals in e.g. Terzi (2010), Cinque (2010) and Romeu (2014). I propose that the Kurdish bound morphemes *-awa, -dā and -řā* are lexical representation of a PLACE element and that semantically they define the set of points occupied by the Ground. This is discussed in chapter 2.

(5)



And for Arabic, I propose the structure in (6) for the decomposition of Rel$_{PLACE}$P. I do not include KP in the functional hierarchy proposed for Arabic since the possessive relation that holds between the AxPart element and the DP Ground is expressed by a construct state. Therefore, I do not keep it in the structure for notational simplicity, although under the cartographic approach the K category should be present in all languages.

(6)



The role of spatial adpositions in motion events has been investigated in several studies (cf. e.g. Nam 2005; Folli & Ramchand 2005; Son 2006; Pantcheva 2007; Fábregas 2007; Tungseth 2008; Gehrke 2008). For example, Nam (2005) investigates the syntax and semantics of goal and source PPs in event structure. In their analysis of motion events in English and Italian, Folli and Ramchand (2005) focus on two types of motion events only: goal of motion and resultative constructions. In Gehrke (2008), the focus is on examining the effect of goal and source PPs in the syntactic structure of specific VPs.

In these studies, several constructions with spatial PPs and motion VPs are investigated. However, the focus is on a specific set of adpositions, mainly goal and source PPs. No

adequate attention is given to the role of spatial PPs headed by elements such as *past/through/across/along* in motion events. Furthermore, the languages on which the proposals have been based are limited to a small set, including English (Folli & Ramchand 2005; Ramchand 2008), Italian (Folli & Ramchand 2005), Korean (Son 2006), Bulgarian (Pantcheva 2007) and Spanish (Fábregas 2007; Romeu 2012, 2014). More interestingly, the relation between the lexical semantics or properties of spatial adpositions and their role in motion events is not examined fully in these studies.

Thus, in this thesis, to fill these gaps, I provide a more precise analysis of the role of spatial PPs in motion events. This will be based on data from English, Kurdish and Arabic. For the purpose of accounting for the role of PPs in motion events, I adopt Ramchand's (2008) decomposition model of verbs, and classify motion verbs into two main classes: [Proc] Vs and [Proc, Res] Vs. Moreover, I provide a syntactic-semantic analysis of motion events which is based on insights from the semantic approach in Dowty (1979) and Rothstein (2004) and the first-phase syntax of verbs in Ramchand (2008). I propose that the result event represented as ResP in Ramchand (2008) is semantically parallel to the BECOME event proposed in Dowty (1979) and Rothstein (2004). I discuss this in chapter 4. This syntactic-semantic mapping helps provide a plausible analysis of different types of motion events, specifically the constructions that include spatial PPs.

I propose that most spatial PPs headed by (especially source- and route-denoting adpositions) modify the whole motion event, but some of them headed by (e.g. *into/onto/in/under*) can function as a culmination of the BECOME event involved in Transition (=Accomplishment and Achievement) events. Consequently, in some cases the type of adposition can determine the type of event expressed. For example, using Pustejovsky's (1991) classification of events, I propose that a construction such as *walk to/from/through* suggests a Process event, while *walk into* or *go in* suggest a resultative Transition event. In Kurdish and Arabic, a resultative Transition event can be expressed by constructions that include [Proc, Res] Vs, and constructions that involve [Proc] Vs and spatial PPs that include a bounded GoalRel P element meaning 'to' and a lexicalised AxPart.

In sum, the main contributions of this thesis are the following:

- Providing a precise analysis of the function of the two main types of spatial adpositions, which are used in the place and path domain;
- Providing a fine-grained structure of spatial PPs in two understudied languages: Kurdish and Arabic;
- Providing a syntactic-semantic analysis of event structure;
- Classifying and characterising motion verbs in Kurdish and Arabic; and
- Characterising the role of different spatial PPs in motion events.

1.4 Theoretical Framework

The topics addressed in this thesis and the approaches followed in the analyses are in line with the theoretical framework known as the cartography program, taken as a theory of the syntax-semantics interface as well as the lexicon-syntax interface. Below is a brief sketch.

1.4.1 *Cartography*

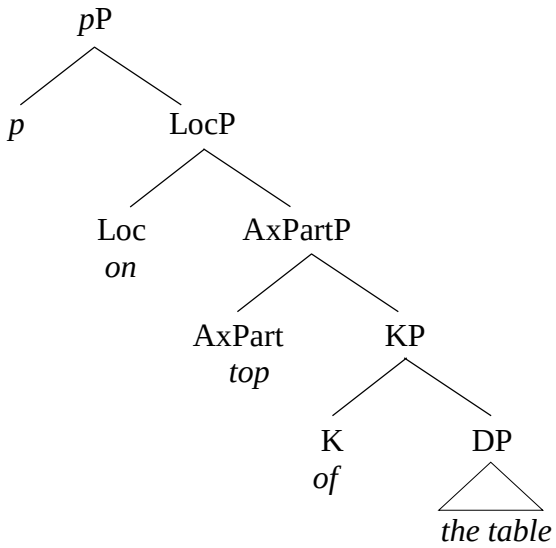
Cartography is a research program that aims at providing a precise and detailed syntactic structure of functional categories (Cinque & Rizzi 2008). The X-bar schema of Chomsky (1970, 1986) is the core structure adopted in cartographic studies. Through this schemata, relations, such as head-specifier and head-complement, can be characterised precisely. A crucial proposal in cartography is that every morpheme represents one feature and projects a phrasal structure of its own. This is phrased as "one (morphosyntactic) property – one feature – one head" (Cinque & Rizzi 2008: 50). Moreover, the existence of such a functional head or phrasal projection in a language entails its existence in the structure of all other languages even if it is not present morphophonologically. This technical sequence is universal and is determined by Universal Grammar.

Cartographic studies first developed in the late nineties and were pioneered by mainly Rizzi (1997, 2004) and Cinque (1999, 2002). However, the motivation beyond cartography can be traced back to the late eighties with Larson's (1988) VP shell structure and Pollock's (1989) IP decomposition into TP and AgrP. In his study of

complementizer phrases and the 'left periphery', Rizzi (1997) decomposes the CP into several functional projections: ForceP, TopicP, FocusP and Fin(iteness)P. More interestingly, Cinque (1999) provides evidence that Adv(erb)Ps are not adjuncts, but specifiers modifying heads which are occupied by different types of functional categories, such as Mood, Tense, Aspect and Voice. Moreover, he argues that the order displayed by adverbs in the functional hierarchy is fixed and universal cross-linguistically.

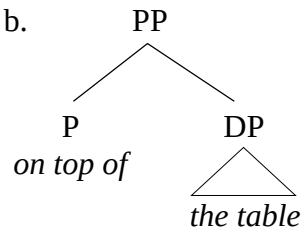
In recent years, the cartographic program has been extended to include also prepositional phrases (see e.g. van Riemsdijk 1990; Koopman 2010; den Dikken 2010; Svenonius 2010; Pantcheva 2011; Romeu 2014) and verb phrases (e.g. Ramchand 2008). For instance, within the prepositional case studies, a fine-grained structure is proposed to account for the internal structure of the PPs across different languages. To illustrate the difference between a cartographic analysis of a PP, such as *on top of the table*, and a non-cartographic analysis, I provide the structures in (7a-b), respectively.

(7) a.



(adapted from Svenonius 2010: 134)

b.



(adapted from Roberts 1997: 20)

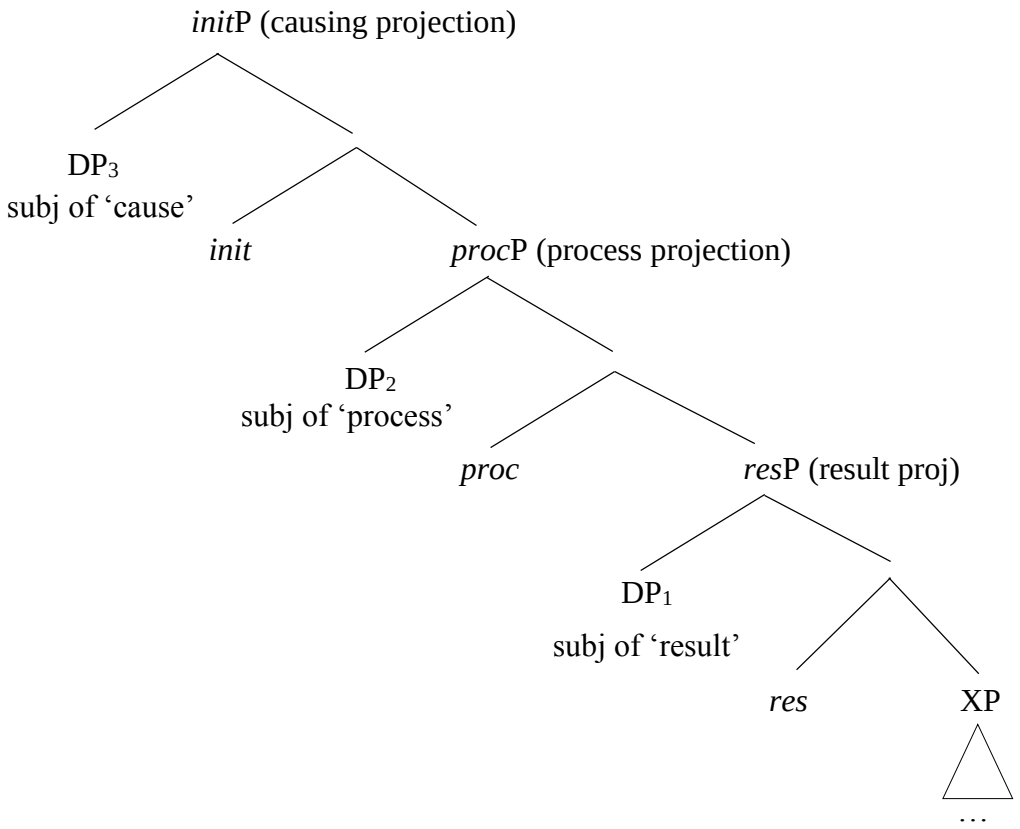
A significant advantage of the cartography program is that it provides a better understanding of issues related to the syntax-semantics interface. For example, applying a cartographic approach in the analysis of the prepositional and verbal domains makes it possible to map the semantic structure of spatial PPs and event structure or motion VPs onto a syntactic configuration. To put it differently, a fine-grained functional structure can be used to represent the types of meanings involved in space and events, in the same order across all languages.

1.4.2 *The syntax-semantics interface*

The syntax-semantics interface constitutes an important level of grammar, which involves the relationship or interaction between aspects, components or rules involved in syntax and those involved in the semantics realm. The syntax-semantics interface has been argued for in several studies in the literature (see e.g. Levin & Rappaport Hovav 1995; Ramchand 2008, 2011; Hackl 2013). For example, Ramchand (2008, 2011) proposes a model of event structure which provides a correlation between the syntactic structure and semantic interpretation of events. More precisely, she argues, "event structure and event participants are directly represented in syntax" (Ramchand 2008: 193).

Ramchand's (2008, 2011) model is based on first-phase syntax, according to which event structure syntax is composed of three subevents. Each of these subevents has a syntactic representation and corresponds systematically to a specific meaning. These are: a causing subevent, a process subevent and a result subevent. The hierarchy of these three subevents is shown in (8):

(8)



(Ramchand 2008: 39)

In words, the *init*P in (8) represents the initiation or causation state in an event structure; it introduces the external argument or the initiator or causer of an event. The *proc*P constitutes the heart of dynamic verbal predicates and introduces the argument that undergoes a process event. The *res*P is the projection that expresses the result or final state of an event; it introduces the holder of the result. In Ramchand (2008) this event structure syntax in (8) is used as a decomposition model of V, and also used to classify verbs according to their association with the meanings represented by these three projections/subevents. Finally, for the semantic interpretation of the first-phase syntax, Ramchand (2008: 42) develops a post-davidsonian view according to which the event is determined by the subevents or parts involved in the VP structure.

Within the spatial relationship, there is also a correlation between the semantic components involved in a spatial relationship and the functional heads into which these components are reflected syntactically. As mentioned in section 1.2, in a complex spatial relationship that involves a path and place element, the former will be the one expressed first and then the latter. It does not work the other way round. Imagine, for

example, that you think of having dinner at a restaurant in London while you live in Newcastle, you cannot be at that restaurant if you do not first travel to London.

Moreover, in a locative relationship such as *the dictionary is on top of the shelf* the Figure *the dictionary* is spatially related to the top part of the Ground *the shelf* via the spatial element *on*. These conceptual components are mapped in a one-to-one manner onto a phrasal structure. The path-relevant phrase structure is higher than the place-relevant phrase structure and within a locative relationship the element that relates the Figure to a specific area with reference to a Ground is higher than this area in a place-relevant phrase structure (see the structures in sections 1.3). These will be elaborated more in chapter 2. In the next subsection, I elaborate on the mechanism adopted in this thesis for the lexicalisation of the structures assumed for spatial PPs and motion VPs.

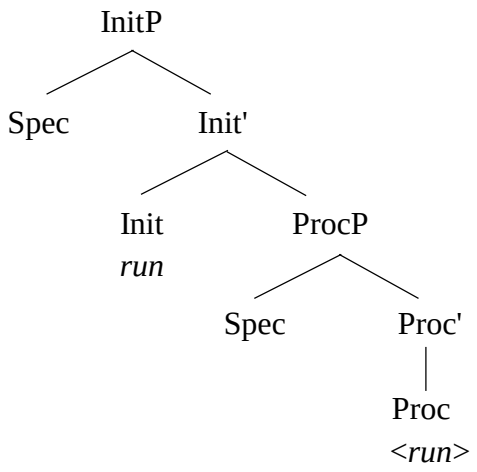
1.4.3 *The lexicon-syntax interface*

In general, lexicon and syntax are viewed as two separate modules of grammar, but whether there exists a correlation between them has been an issue debated in several studies (see e.g. Goldberg 1995; Levin & Rappaport Hovav 1995; Rappaport Hovav & Levin 1998; Hale & Keyser 1993, 2002; Mateu & Rigau 2002; Borer 2005; Ramchand 2008 for an overview). For example, for the lexicalisation of the structure given in (8), Ramchand (2008) develops a moderate constructionist approach, whereby both syntax and lexical content contribute to the interpretation of the event.

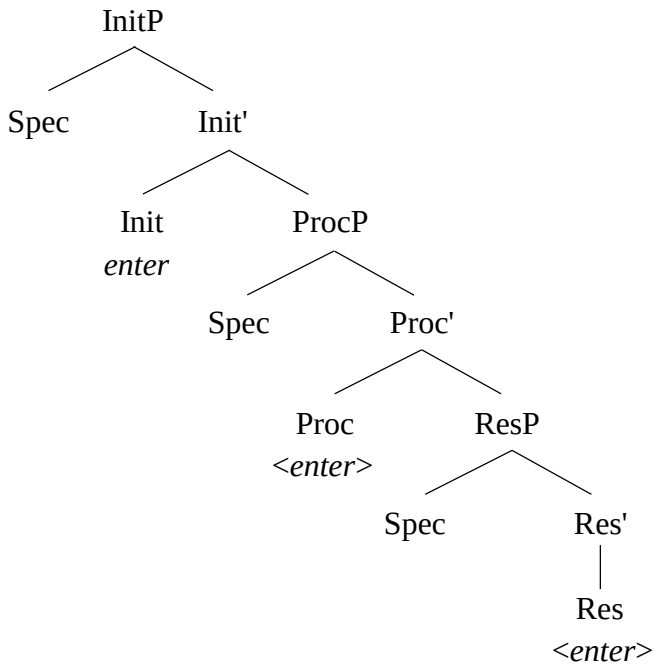
More precisely, Ramchand (2008) argues that verbal lexical items carry a set of category features, which are used to encode the functional heads proposed in the first-phase syntax. For example, a verb such as *run* possesses an [Init] and [Proc] feature in the lexicon because it can project an InitP and ProcP. A verb such as *enter* carries the [Init], [Proc] and [Res] category features since it can identify all the three functional heads in the syntactic structure. Accordingly, a lexical item can multi-attach to more than one terminal node through the operations of Merge and Remerge.

To illustrate, the syntactic structure of the lexical items *run* and *enter* are as in (9a and b).

(9) a.

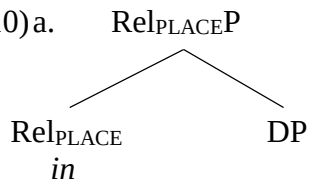


b.

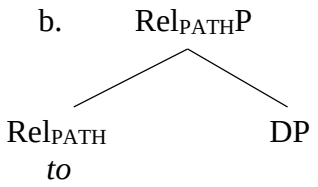


Similarly, for the lexicalisation of the phrasal projections of the spatial prepositions I apply the moderate constructionist approach as proposed in Ramchand (2008). I take the spatial lexical items to be associated with a set of category features that are used to build a prepositional phrasal structure. For example, a P such as *in* is associated with a Relator feature that operates in a place domain and thus projects a $Rel_{PLACE}P$, while *to* is associated with a Relator feature that functions in a path domain and hence projects a $Rel_{PATH}P$. These are represented syntactically in the structures (10a and b).

(10) a.



b.



In sum, following works such as Ramchand (2008), Svenonius (2010) and Pantcheva (2011), in this thesis I assume a cartographic approach in the process of providing a fine-grained structure for the semantic structure of spatial PPs and motion VPs. Further, I assume that the terminal nodes proposed in the structures are lexicalised by lexical items post-syntactically. Moreover, the possibility that a lexical item may lexicalise a chunk of terminal nodes is accounted for by means of phrasal spell-out as modelled in the minimalist program (through Merge and Remerge).

1.5 Organisation of the Thesis

The rest of the thesis is structured as follows. In chapter 2, I will discuss the syntactic and semantic properties of adpositions such as English *at/in/above/inside/in front of,* etc. and their equivalents in Kurdish and Arabic (both MSA and IA). I will discuss the labels used to refer to these elements. Based on the semantic function shared by such elements, I propose the term Place Relator. Syntactically I will represent them as Rel$_{PLACE}$Ps, which will be decomposed into Rel$_{PLACE}$, AxPart and K. This model of P projection is built on insights from Svenonius (2010). Chapter 2 will also examine and elaborate the syntax, semantics and morphology of similar elements in Kurdish and Arabic. Data from Kurdish presents a challenging issue to the model of P projection proposed, for which a syntactic-semantic analysis will be proposed.

Chapter 3 deals with the syntax and semantics of the other set of spatial adpositions, which are used in a path domain. Examples of such elements are *to, into, up to, towards, from, away from, out of, past, along, through*, etc. The main aims of the chapter are to define the semantic role of these Ps in a spatial relationship, and to examine the types of

such Ps in English, Kurdish and Arabic. I propose that Ps such as English *to/from/through* are Relators in a path domain. They relate a Figure to a specific point of a path, which can be a starting point, an end point or some intermediate points of a path. To account for the types of such Relators, I adopt Pantcheva's (2011) typology of path adpositions, which is based on three properties: ±TRANSITION, ±ORIENTATION and ±DELIMITATION. The three canonical types identified in Pantcheva (2011) are Goal, Source and Route, which I will refer to as: GoalRel, SourceRel and RouteRel, respectively.

In chapter 4, I turn to event structure and motion verbs. In the first half of the chapter, I examine the syntax and semantics of (motion) events and present a syntactic-semantic analysis combining ideas from Dowty (1979) and Rothstein (2004), who focus on the semantics of events, and Ramchand (2008), who proposes a syntactic analysis of events. The main proposal is that the BECOME event proposed in work by Dowty (1979) and Rothstein (2004) is parallel to the result subevent proposed in Ramchand (2008). Thus, syntactically the BECOME event involved in Transition (=Accomplishment and Achievement) events is represented as the Res projection. In the second half of the chapter, I focus on two classes of motion verbs. Following Ramchand's (2008) tripartite VP structure, these are [Proc] verbs and [Proc, Res] verbs. This binary classification will also be used to examine the types of motion verbs in Kurdish and Arabic. An extended projection for motion verbs in these languages is also provided, which will be useful in the later discussion in chapter 5.

Chapter 5 explores the occurrence of different spatial PPs with the two main classes of motion verbs dealt with in chapter 4. These are [Proc] Vs and [Proc, Res] Vs. The focus of the chapter is to investigate the role of spatial PPs in constructions that include these two types of motion verbs, and the type of events expressed. This investigation is based on data from English, Kurdish and Arabic. For example, I show that [Proc] Vs combined with spatial PPs headed by e.g. English *in/on/under/to/up to/towards/through/around* express Process events, while [Proc] Vs and spatial PPs headed by e.g. *into/onto* express a resultative Transition event. For such cases I propose a null Res element to represent the BECOME event involved in Transition events and constructed by the culmination information provided by the PP. In Kurdish and Arabic, I show that Transition events that are expressed by [Proc] Vs and spatial PPs require

that the PP involves a bounded GoalRel element meaning ‘to’ and an overt AxPart. Finally, chapter 6 provides a conclusion and some suggestions for future research.

Chapter 2. Adpositions in the Place Domain

2.1 Introduction

As mentioned earlier in chapter 1, the meanings denoted by spatial adpositions are generally divided up into two main domains: place and path (Jackendoff 1983, 1990; Wunderlich 1991; Emonds 2000; van Riemsdijk & Huybregts 2002; Zwarts 2008a; Kracht 2008; Koopman 2010; den Dikken 2010; Svenonius 2008, 2010, inter alia).[7] The difference between these two classes is both syntactic and semantic. Syntactically it has been argued that, in adpositional phrase structure cross-linguistically, path adpositions dominate place ones. Thus, place adpositions appear closer to the DP complement (Jackendoff 1973, 1983; Koopman 2010; den Dikken 2010; Svenonius 2008, 2010, inter alia). Semantically there seems to be a systematic relation between place phrases and path phrases, in that a path is made up of locations (Asbury *et al*. 2008: 11).

In this chapter, I discuss the syntactic and semantic properties of place adpositions, with my data being mainly from English, Sorani Kurdish, Modern Standard Arabic (MSA) and the colloquial variety of Iraqi Arabic (IA). I explore the labels used to refer to elements such as English *in/on/above* and the common function shared by them when they are used to describe a static locative relationship. In terms of syntax, I review the internal syntactic structure of PPs headed by place adpositions as proposed by Svenonius (2008, 2010). In terms of semantics, I will not discuss pure semantic analyses, but rather present the semantic functions and/or roles of the functional heads involved in the place P projection.

Based on my analysis of the data for place adpositions, I propose that these adpositions are Relators in a place domain. They relate a Figure to a specific Space with reference to a Ground. In the P projection, I refer to them as Rel_{PLACE}Ps. This revised model of place P projection will be applied to two further languages: Kurdish and Arabic. The purpose of this is two-fold; first, to test the plausibility of (a revised version of) Svenonius' model of P projection for further data, and second to identify the functional

[7] Other labels for place and path common in the literature are 'locative' and 'directional' (Wunderlich 1991; Zwarts & Winter 2000; Koopman 2010; den Dikken 2010, among others) or configuration and mode (Kracht 2002). Throughout the thesis, I adopt the terms 'Rel_{PLACE}' and 'Rel_{PATH}', respectively, for reasons which will be made clear in sections 2.2.2 and 3.4.2.

projections involved in the internal syntax of place adpositional phrases in these two languages, which, to my knowledge, has not been done in earlier work. This investigation will lay the ground work for much of what follows, in particular the syntactic-semantic structure of motion events that involve motion verbs and spatial PPs discussed in chapter 5.

The chapter is organized as follows. Section 2.2 is an overview of a number of studies which define place adpositions. I also present my view of these elements where I propose that place adpositions are Relators in a place domain. The proposal will be supported by a detailed analysis of the semantic and morphological structure of these Ps as used in English. In section 2.3 I review Svenonius' (2010) model of place P projection, and adapt it in accordance with my proposal. A detailed analysis of the internal syntax of place PPs in English is also presented. The next two sections are devoted to a cross-linguistic data analysis, with data coming from Kurdish (section 2.4) and Arabic (section 2.5). I provide a detailed analysis of the semantic and syntactic structure of place adpositions in these languages. The discussion will also cover some problematic and controversial issues in the analysis of place adpositions in Kurdish and Arabic. Finally, a summary and conclusion is given in section 2.6.[8]

2.2 English *in/on/above*, etc.

In English, expressions denoting locative relations include Ps such as *in, on, at, above, below, in front of, behind, beside, next to, near,* which denote the location of an object (the Figure) with reference to another object or location (the Ground). This section introduces briefly a few accounts of these elements suggested over the past 30 years, focusing on labels and definitions. After this I discuss the two lines of analysis used in the interpretation of these elements and based on this distinction I propose my view of these elements. Later I discuss the semantic decomposition and morphological make-up of these Ps as used in English.

[8] Parts of this chapter and chapter 3 have been presented at the Third Cambridge Comparative Syntax conference (CamCos3) at the University of Cambridge, May 2014, the Workshop on Aspect and Argument Structure of Adverbs and Prepositions (WAASAP 2) at the University of Tromsø/Norway, June 2014, and the Workshop on Adpositions and PPs at Newcastle University, June 2014. I am grateful to the reviewers as well as the audiences at these events. Their questions and comments helped develop the ideas presented in these chapters further.

2.2.1 *Labels and definitions*

Elements such as English *in, on, at, above, below, in front of, behind, beside, next to, near* are usually referred to as place Ps (e.g. Jackendoff 1983; Svenonius 2010) or locative Ps (e.g. Zwarts 1997; Koopman 2010). In terms of the semantic properties and/or functions of these elements, several ideas are found in the literature. For example, Jackendoff (1983: 162) claims that such elements express place-functions, e.g. *in* expresses a place-function and it subcategorizes an NP which is referred to as a reference object. The nature of the reference object (i.e. the Ground) is constrained by the place-function. For example, the reference object of *in* should involve or be perceived as a bounded area, while that of *on* is viewed as an upper surface.

For Zwarts (1997: 58), these Ps with the DP Ground are used to denote locations. Zwarts' (1997) as well as Zwarts and Winter's (2000) analysis of locative PPs is based on the theory of vectors. Vectors are "directed line segments between points in space" (Zwarts & Winter 2000: 296). For instance, the PP *behind the church* denotes a set of vectors that commences or project from the church and points to the back space. In case of *the truck is behind the church*, the Figure *the truck* will be located in that space. According to Zwarts (1997) and Zwarts and Winter (2000), vectors provide a compositional semantic analysis of modifiers used in the prepositional domain. For example, *three metres behind the church* refers to the connexion between the set of vectors that point backward from the church and the subset of vectors which are three meters in length. In fact their analysis of locative PPs in terms of vectors seems to be motivated mainly by their desire to provide a straightforward analysis of modified (locative) PPs.[9] Expressions of modification will be discussed in section 2.3.2.

Wunderlich (1991) defines locative Ps in terms of regions which are conceived of as a set of points in space. He defines the function *p* which returns "for each object or event the place it occupies ('eigenplace')" (Wunderlich 1991: 597). [10] For him, these Ps denote spatial relations. More specifically, they denote a relation between a theme (the Figure, represented by u) and a relatum (the Ground, represented by v). Wunderlich

[9] For a detailed vector-based analysis of modified PPs, the reader is referred to the work cited.

[10] Also see Herweg and Wunderlich (1991), Nam (1995) and Kracht (2008) for a similar approach in terms of regions.

(1991) defines other functions such as INT[v] to represent the internal region of the Ground and EXT[v] to represent the external region of the Ground. An *in*-phrase can then be represented as in (1), cited from Wunderlich (1991: 597):

(1) $\langle u,v \rangle \in \|in\|$ iff $p[u] \subseteq INT[v]$

According to this formula, the Figure u is inside the Ground v if and only if the set of points (the eigenplace) that the Figure occupies forms a subset of the region interior to v.

Svenonius (2010: 127) states that place elements "give information about the physical configuration of the relationship between a figure … and a ground". For Koopman (2010) and den Dikken (2010), in their analysis of similar entities in Dutch, such elements have a locative use. In particular, Koopman (2010: 35) claims that these adpositions encode place. Finally, in a recent study of parallel elements in Spanish, Romeu (2014) refers to these elements as encoding a relation between two elements (the Figure and the Ground) and syntactically represents them as Rel (rather than *p* or P or P_{LOC}). In section 2.3.1, the syntactic analysis proposed by Svenonius (2010) will be presented and discussed in detail.

To sum up, in some of these accounts the focus lies on the lexical entries of the elements (e.g. Jackendoff 1983; Koopman 2010) while in some the focus is on the semantic function or use of these Ps (e.g. Wunderlich 1991; Svenonius 2010). In the next section I discuss the labels used to refer to Ps such as English *in/on/above* and based on the discussion I propose a label which will be adopted throughout the thesis.

2.2.2 *Discussion and proposal*

In the discussion below I try to distinguish between the lexical entries of elements such as *in, on, at, above, below, in front of, behind, beside, next to, near* and their semantic function. Based on that I will suggest a proper label for such elements. It is unanimously agreed that the relevant elements occur mostly with static verbs such as *be, stay, stand,* etc. which suggest a static locative relationship. Consider these examples:

(2) a. The driver stayed in the car. (BNC, W_fict_prose)
b. Your piece box is on the table. (BNC, W_misc)

In (2a), the place or location of the Figure, *the driver*, is described as being at the inner space of a Ground, *the car*. In (2b), the Figure represented by *your piece box* is located at the surface space of a Ground, *the table*. A straightforward interpretation is that *in* and *on* are used to define a locative relationship between two entities: a Figure and a Ground. This observation is in line with some of the above definitions, that is *in* and *on* denote or express a locative function or relation (cf. Wunderlich 1991; Svenonius 2010; Romeu 2014). It can also be understood as denoting a location or a place (cf. Jackendoff 1983; Zwarts 1997; Koopman 2010). These definitions, thus, highlight two distinct aspects: denoting a locative relation can be said to represent a semantic function, whereas denoting a location represents a semantic property associated with the lexical entry of these elements.

Further analysis of the examples in (2) suggests that *in* and *on* relate the Figure to a specific space associated with the Ground; *in* relates the Figure to the inner space of a Ground, while *on* relates it to the surface space. Accordingly, *in* requires a Ground that has an inner space, while *on* requires a Ground that has a surface space. This explains the oddity of the examples in (3): dots do not have inner or surface spaces where things can be located (adapted from Jackendoff 1983: 162).

(3) a. #The man is in the dot.
b. #The man is on the dot.

One conclusion, thus, is that *in* and *on* relate a Figure to a specific part or space of a Ground, and not the whole Ground or the Ground itself. The space targeted by these elements forms part of their lexical entries. In other words, the space targeted by *in* and *on* is suggested by their lexical entries but that space belongs to a Ground or is identified with reference to a Ground. This becomes clearer with further examples. Consider:

(4) a. We went out to meet him at the airport. (BNC, W_fict_prose)
b. Her bedroom is above the kitchen. (BNC, W_misc)

c. Fifteen minutes later she was behind the wheel of her car. (BNC, W_fict_prose)
d. She was sitting in front of the television. (BNC, W_fict_prose)
e. The swimming pool is near the castle. (BNC, W_misc)

In each of these sentences, a prepositional element is used to relate a Figure to a specific space which is defined with reference to a Ground or part of a Ground. In (4a), the PP *at the airport* is an adjunct, and the Figure here is assumed to be the event as a whole, which is the meeting that took place at the airport. Thus, *at* relates the Figure, the meeting event including the participants, to a specific space defined with reference to the airport. It is either an inner part of the airport or a space by the airport. In (4b), *above* relates the Figure *her bedroom* to a space which is higher than the Ground, *the kitchen*. In (4c), *behind* relates the Figure *she* to the back space of the Ground, *the wheel of her car*. In (4d), *in front of* relates the Figure to the front space with reference to the Ground. Finally, in (4e), *near* relates the Figure to a space which is close to the Ground.

The same is true for other locative elements, such as *below, beside* and *next to.* They all relate a Figure to a specific space, not directly to an entity. This space is suggested as part of the semantics of the prepositional element, but in referential terms it forms part of a Ground or is defined with reference to a Ground. For example, *in* typically targets an inner side of an entity, *on* targets a surface that is part of an entity, *above* a higher space, and so on. As to the lexicalisation of this space, it can be present phonologically, such as *front* in case of *in front of* and *top* in *on top of*, or it can be null phonologically as is the case with *in* and *on*.

To conclude, building on the accounts reviewed above, I take elements such as *in, on, at, above, below, in front of, behind, beside, next to, near* to relate a Figure to a Space which is defined with reference to a Ground or part of it, not the Ground as a whole.[11] Hence, I refer to them as Place Relators (Relators in a place domain).[12] The motivation behind this label will become clearer in chapter 3, where I deal with elements such as *to/from/through*, etc. There I propose that such elements are Relators too, but in a path

[11] From here on, I capitalise the initial of Space to distinguish it from any other types of spaces (e.g. the space occupied by the Ground).

[12] Although, as will be shown in section 2.3.2, the element that relates a Figure to a Space is denoted by *in/on/at* or the first element in multi-morphemic Ps, I will use Place Relators as a covering term to refer to the whole P. For example, *in, beside* and *in front of* are all referred to as Place Relators.

domain.[13] This analysis is in line with most of the above accounts and builds on them.[14] What is missing in these accounts is a precise identification of the function of such adpositions in a spatial relationship, which this study provides. For example, while some of them claim that such adpositions denote a location (e.g. Zwarts 1997) or denote a relationship (e.g. Svenonius 2010), denoting something is not a function per se. Through the term Relator, it makes it clear that these elements denote a relation. Hence their semantic function is reflected well, and as will be shown later, syntactically the term works well as well. Therefore, this view provides a one-to-one syntactic-semantic correspondence in the analysis of PPs headed by spatial adpositions.

It is worth mentioning here that while my analysis is in line with Romeu's (2014) idea that these elements relate the Figure to a Space, it differs in terms of the nature of this Space. Romeu (2014) argues that the Figure is related to a Region, which he defines as a set of points occupied by the Ground (see section 2.4.3 for more details). In contrast, I assume that these elements relate the Figure to a Space which is defined with reference to a Ground; e.g. it can be part of the Ground. This is more in line with Svenonius' (2010) account. In the next section, I elaborate more on the semantics of these elements.

2.2.3 *Semantics of Place Relators*

In the previous section, I have presented several entities and locations which form the ingredients of a locative relationship. Such a relation involves a Figure (the entity whose location is determined), a Ground (the entity or location with reference to which a Space is targeted), a Space (an area defined with reference to a Ground), and a Place Relator (the element that denotes or fulfils the relation). The logical order of these components can be represented schematically as in figure 2.1:

[13] The term Relator is due to den Dikken (2006), but not used in the same sense. In den Dikken (2006) the term Relator is used to represent elements that mediate the syntactic relationship between a predicate and its subject, whereas I take Relator to refer to spatial adpositions which relate a Figure to a specific Space in a place domain e.g. *in/on/above*, or refer to an element that relates a Figure to a specific point in a path domain (to be discussed in chapter 3).

[14] In terms of Grammar, I will keep using the terms adposition/preposition throughout the thesis. The term Place Relator is suggested to define a semantic function, not a grammatical function, of the elements referred to.

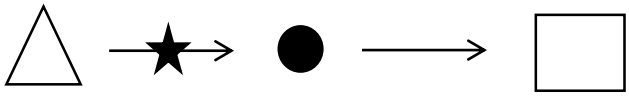


Figure 2.1 The components of a locative relationship ordered logically

The Figure is represented by the triangle. It is located in a specific Space with reference to a Ground, such as a front, a top, a higher space, a lower space, a nearby space, etc. This Space is represented by the shaded circle. The square represents the Ground, and the shaded star is the element that does the relation job, the Place Relator. The arrows represent the logical order. This order is constant in every locative relationship, that is, a Figure does not relate to the Ground as a whole. It rather relates to a Space identified by the lexical entry of the Place Relator element. This Space in return is associated with a Ground. An advantage of this semantic order is that, as will be shown in section 2.3.1, it has a one to one correspondence to the syntactic configuration of a locative relationship.

Although these components form the necessary elements of a locative relationship, other components can be identified if we examine the morphological constructions of Ps in English and across a wide variety of languages. In the next section I examine the morphological decomposition of Place Relators in English.

2.2.4 *Morphological decomposition*

Morphologically, English has mono-morphemic, bi-morphemic and tri-morphemic P elements. Elements such as *in, on, at* and *near* are mono-morphemic. They relate a Figure to a specific Space defined as part of the lexical entry associated with these elements. Although the Space targeted by each of these elements is not overtly expressed, it is understood as part of their semantics or lexical entries. In other words the difference in meaning between e.g. *in* and *on* is conveyed by the lexical entry unique to each of them. This is recognized by the specific Space a Figure is located at with the use of such elements. For example, the Figure is located at the inner Space (in case of *in*), the surface area (in case of *on*), the inner or nearby area (in case of *at*), and the nearby Space (in case of *near*). See the discussion under examples (2a-b) for *in* and *on*, (4a) for *at*, and (4e) for *near*.

The bi-morphemic Place Relators include *upon, next to, inside, outside, beside, below, behind, beyond, between, above* and *among*. As can be seen, in Modern English, the two parts of some of these elements can stand independently such as *inside* (e.g. *in* and *side*), *outside*, *upon* and *next to*; for some only the second part can stand alone such as *side* in *beside* and *low* in *below*, and for some although both parts do not suggest any independent words, they are etymologically composed of two. These are *behind, beyond, between, above* and *among*. Below I elaborate more on these.

To start with, the P *upon* is made up of *up* and *on*. As part of its lexical entry, the former targets an upper position and the latter targets a surface space. The whole meaning implied then is that of contact (Svenonius 2010: 135). An illustrative example is:

(5) …it is upon the sea coast. (BNC, W_non_ac_soc_science)

The Figure is related to a Space which is at an upper position but in contact with the sea coast. This Space is denoted by both elements, *up* and *on*. However, this Space can be denoted by *on* alone. Thus, *up* seems to have a particle use modifying the Space denoted by *on*. Contrast:

(6) a. The boat is on the Tyne River.
b. The boat is up the Tyne River.

In (6a), *the boat* is understood to be located at one point on the river Tyne, while in (6b), it is understood to be at an upper position with reference to the river Tyne. I will discuss the syntactic positions of these two elements in a P projection in section 2.3.2.

As to *next to*, the first element *next* implies closeness and the second element *to* expresses 'with respect to', rather than a goal meaning (Zhang 2002: 52, note 8). The overall meaning denoted by *next to* is closeness, as in:

(7) She was seated next to the Queen. (BNC, W_newsp_other_report)

In the interpretation of this sentence, the Figure *she* is located at a Space which is close to the Ground at one point.[15] Although the whole element *next to* is used to denote closeness, each part of it has a different syntactic realisation. See its syntactic decomposition in section 2.3.2.

The next elements are *inside, outside, beside* and *below*. *Inside* and *outside* are composed of *in/out* and *side*. For example, in *the toy is inside the box* the Figure is located in the 'inner side' of the Ground, while in *the toy is outside the box* the Figure is at the 'outer side' of the Ground. Obviously the targeted Space, with reference to the Ground, where the Figure is located is determined by the meaning of *in* and *out* (cf. Wunderlich 1991; Zwarts 1997; Svenonius 2010). As to *beside* and *below*, etymologically the former is composed of *be* 'by' and *sīdan* 'side' as used in Old English, while the latter is made up of *be* 'by' and *lou* 'low' (Onions 1966). The use of *beside* in an example such as *she sat beside her father* entails that the Figure is located by one side of the Ground. Contrary to *side, low* is an adjective, not a noun, which describes a low Space with reference to a Ground. For instance, *the ball is below the table* means that the ball is located at the Space which is lower than the table.

Other elements within the bi-morphemic group are *behind, beyond, between, above* and *among*. In table 2.1, I present the etymologies of these Ps, which are in all cases bimorphemic, and their semantic function. The etymological definitions are cited from the Oxford Dictionary of English Etymology edited by C. T. Onions (1966).

[15] It is worth noting that the semantic difference between *next to* and *near* is that the former suggests an adjacent position, while the latter does not (see Lindstromberg 2010: 152-153). So when two people sit by the side of each other, the proper preposition to use is *next to*, not *near*.

P	Etymology	Semantic function
behind	OE *bi* 'by' + *hindan* (lit. 'at a place in the rear')	relating a Figure to the back Space of an entity.
beyond	OE *be* 'by' + *ġ(e)ondan* 'the farther side'	relating a Figure to a farther back Space of an entity.
between	OE *be* 'by' + *twēonum* 'two'	relating a Figure to a Space separating two entities.
above	OE *a-* 'on' + *bufan* 'from above/up'	relating a Figure to a Space higher than an entity.
among	OE *onġe* 'on' + *mang* 'mingling, assemblage, crowd'	relating a Figure to a Space in the midst of several entities.

Table 2.1 Etymology and semantic function of *behind, beyond, between, above* and *among*

A general observation about the morphology and semantics of the elements *inside, outside, beside, below, behind, beyond, between, above* and *among* is that although morphologically and/or etymologically they are made up of two parts, it is hard to determine the semantic contribution of each element in the overall meaning, especially in case of *between, above* and *among*. One possible assumption is that the first part of each, e.g. *in, out, be* 'by' and *a-* 'on', can be said to be the Place Relator, which relates the Figure to a specific Space, while the second part either refers to some Space associated with a Ground (e.g. *hindan* and *geond*) or describes the nature of the Ground (e.g. *tweonum* and *mang*). In section 2.3.2, I show that *inside, outside, beside* and *below* as a whole check features under the AxPart and $\text{Rel}_{\text{PLACE}}$ node (see discussion there).

Finally, English has two common tri-morphemic Ps: *in front of* and *on top of*. In the former, *in* relates a Figure to the front Space of a Ground, and in the latter *on* relates a Figure to the top Space of a Ground. So *front* and *top* define a specific Space with reference to a Ground. This leaves the word *of*. The latter is known as a genitive marker element as in *the arm of the chair, the wheels of the car,* etc. That is, it suggests possession or a part-whole relationship (Fábregas 2007; Romeu 2014). The arm and the wheels are the possessed elements while the chair and the car are the possessors. Thus, I assume that *of* in *in front of* and *on top of* functions similarly. It is a genitive marker that expresses the possession relation between a front or top part or Space of a Ground and

that Ground itself. For instance, the PP *in front of the house* refers to the front part or Space that belongs to that house or forms part of the whole house.

In sum, the Space targeted by the mono-morphemic Ps is not lexicalised, while the Space suggested by the bi- and tri-morphemic Ps is expressed by the second element. The second elements of the bi- and tri-morphemic define a part or a Space with reference to a Ground such as *side, front, top,* etc. So while the Relators (the mono-morphemic Ps and the first element of the bi- and tri-morphemic Ps) are usually lexicalised, the Space they target as part of their semantics is not always or fully present. The tri-morphemic Ps present another element which serves as a possessive marker. Assuming a syntactic decomposition structure of Place Relators helps further to account for the morphology and semantics of these elements. Thus, in the next section I discuss the internal syntax of PPs headed by the English Place Relators, examining the syntactic positions and representations of these elements in a P projection.

2.3 Rel_{PLACE} P Projection

In the literature on place-denoting adpositions (Place Relators), several hypotheses have been proposed to articulate their internal syntactic structure, identifying several functional projections. The languages on which these studies have been based are English (e.g. Svenonius 2008, 2010; Terzi 2010), German (e.g. Noonan 2010), Dutch (e.g. Koopman 2010; den Dikken 2010), Greek (e.g. Terzi 2010), Spanish (e.g. Terzi 2010; Romeu 2014), Czech (e.g. Biskup 2009), Hebrew (Botwinik-Rotem 2004, 2008), some African languages (e.g. Holmberg 2002; Aboh 2010; Nchare & Terzi 2014), to mention a few. Most of the analyses are based on the cartographic approach to phrase structure pioneered by Rizzi (1997) and Cinque (1999) and further developed in Cinque (2002), Rizzi (2004) and Cinque and Rizzi (2008). Within this framework, it is argued that phrases and clauses have a complex rich internal structure which can be broken down into several functional elements (see section 1.4.1 for an outline of cartography).

This assumption has been extended to the prepositional domains as well, where several syntactic heads have been identified. Each of the syntactic projections has a semantic contribution and/or function which is defined in terms of regions (Wunderlich 1991; Kracht 2008) or vectors (Zwarts 1997; Zwarts & Winter 2000). Moreover, the lexicalisation (i.e. morphological representation) of these syntactic projections is

determined by the morphological underpinning of adpositions across a wide range of languages. Complex morphological structures indicate complex internal syntactic structure, where each morpheme either corresponds to a specific syntactic head or can be taken to lexicalise more than one syntactic head under the hypothesis of phrasal spell-out (see McCawley 1968; Fábregas 2007; Starke 2009; Svenonius 2010; Pantcheva 2011). According to this hypothesis, lexical items or morphemes are inserted postsyntactically and can lexicalise a number of syntactic elements in a phrasal projection.

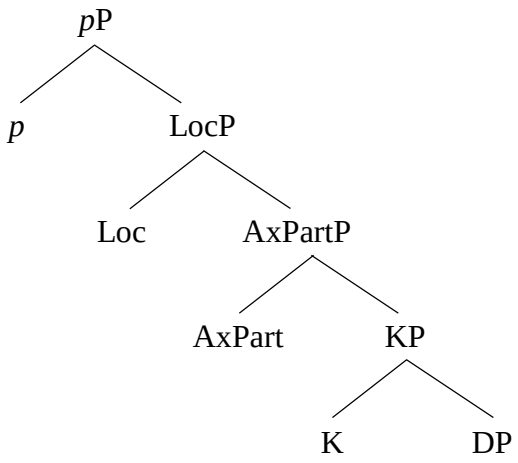
From among the various hypotheses on the internal syntax of place-denoting PPs, I adopt Svenonius' (2008, 2010) model, which he developed on the basis of English data and which has been applied to several other languages with promising results (e.g. Persian (Pantcheva 2006), Hungarian (Hegedűs 2006) and Serbian (Bašić 2007)). As will be shown later, his model also works well for Kurdish and Arabic data, though several modifications will need to be made, especially for Kurdish.

In the next section I review Svenonius's (2010) model of place P projection and adapt it. Later I apply the modified model to the English Place Relators exemplified in section 2.2.4. Other projections are also presented and discussed briefly.

2.3.1 *Svenonius (2010): review and refinement*

Svenonius (2010) proposes the following minimal structure of adpositions used in a place domain:

(8)



(adapted from Svenonius 2010: 134)

In what follows, I will define the syntactic and semantic functions of these terminal nodes and their morphological representation in English. While I adopt most of Svenonius's proposals, I suggest a few modifications based on the view of Place Relators put forward in the previous sections. To start with, the functional head *p* is the element that introduces the Figure into the spatial relation; the Figure is in its Spec. It is similar to the *v* head that introduces the Subject in a verb phrase (see Larson 2014 for details on *v*). For Svenonius, little *p* is the "locus of relational meanings like containment, contact, and attachment" (Svenonius 2010: 140). The *p* element is thus assumed to be lexicalised by the topological adpositions *in* and *on*; otherwise, it is usually null in English. However, in the structure I propose in (9), I do not postulate any little *p* projection. In fact, Svenonius' little *p* does not seem to have a crucial function; introducing Figures to the locative relation can be done through the Spec of Rel_{PLACE}. Besides, no evidence is presented for *p*'s association with containment, attachment or support. Therefore, little *p* appears to be redundant and I omit it in what follows.

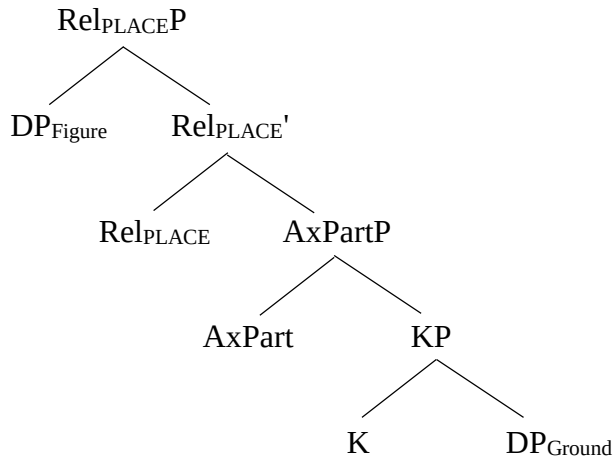
Loc (for locative) is an essential element, lexicalised by Ps such as *in, on, at*. Svenonius (2010) defines Loc in terms of vectors as proposed by Zwarts (1997) and Zwarts and Winter (2000); its semantic function involves mapping regions onto vector spaces. For example, in the interpretation of *above the window,* he proposes a bunch of vectors that project from the window and point upward. In section 2.2.2, I argued that Ps such as *above* should be labelled Place Relators, because they relate a Figure to a specific Space defined with reference to a Ground. Thus, I suggest Rel_{PLACE} corresponds to Loc in Svenonius' (2010) model. I also assume that the Figure is introduced into the locative relationship through the Spec of $Rel_{PLACE}P$.

Next I discuss the projection Ax(ial) Part, which hosts nominal spatial elements such as *front* and *top* in *in front of* and *on top of*, respectively. In section 2.2.2, I referred to these elements as the Space with reference to which a Figure is related via a Place Relator. I also assumed that sometimes this Space is not lexicalised as with English *in, on, at* and *near* or partly referred to as in *inside*. Semantically, AxPart is a function from the set of points occupied by the Ground object in space to some other regions or axes of the Ground such as its top, bottom, front, sides, edges, proximity, etc. (Jackendoff 1996: 14; Svenonius 2010: 132, 156). Elements that can lexicalise the AxPart node do not always look like nouns, as in the case of English *behind, beneath, below*. Also AxParts elements can function as modifiers, as in *the top part, the front area, the back*

part, the side dish, etc. Finally, AxParts cannot be pluralised like normal nouns and cannot combine with articles, hence **in fronts of* and **in a front of* (Svenonius 2006: 50). Adopting this term, I assume that it refers to the Space to which a Figure is related in a locative relationship. Following Fábregas (2007) and Romeu (2014), I assume that the AxPart elements form a possessive or part-whole relationship with the DP Ground.

Finally, I turn to the functional head K. According to Svenonius, K syntactically subcategorizes a DP Ground and semantically it is a "function from a Ground DP to a region" (Svenonius 2008: 66, 2010: 132). That is, he assumes that K is the element that returns the set of points occupied by the Ground and he refers to these set of points as eigenplace, following Wunderlich (1991).[16] In contrast, I assume, following Romeu (2014), that K has a possessive function. It merely defines the possessive construction or the part-whole relationship that holds between AxPart elements and the Ground. In English, K can be lexicalised by *of*, otherwise it is null mostly. In Kurdish, K is lexicalised, too, by an element that is used in possessive constructions (see the discussion in section 2.4.1). Based on these considerations, I revise the structure in (8) and propose the one in (9), repeated from (4) in chapter 1.

(9)



The sequence of the functional heads in (9) reflects the logical order given in figure 2.1. The semantic components of a locative relationship have a one-to-one correspondence with the syntactic projections suggested. Via a Place Relator element (Rel$_{PLACE}$), a DP

[16] It is worth noting that Wunderlich's (1991) eigenplace function and Svenonius' (2010) K function are supposed to refer to the same thing according to Svenonius (2010: 132, note 6). However, this clashes with the fact that Wunderlich (1991) takes eigenplace to refer to the set of points occupied by the entity (the Figure) and not the Ground as assumed by Svenonius (2010).

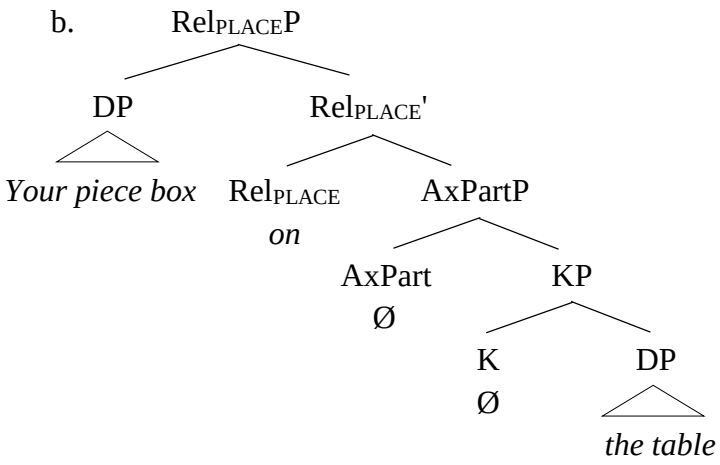
Figure is related to a specific Space (AxPart) defined with reference to a DP Ground with which it forms a possession or part-whole relation represented through K.

2.3.2 *English Rel$_{PLACE}$Ps decomposed*

Next I examine the lexicalisation of these functional heads among the three morphological groups of Place Relators in English. The natural terminal node where the mono-morphemic elements *in, on, at* and *near* are introduced is the Rel$_{PLACE}$ node. An illustrative example of *on* is given in (10a), (repeated from (2b)), along with its syntactic structure in (10b):

(10) a. Your piece box is on the table. (BNC, W_misc)

b.



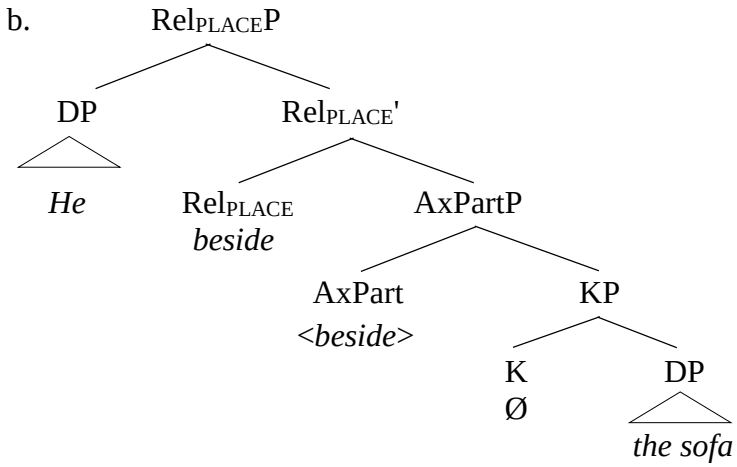
As can be seen the functional heads AxPart and K are not lexicalised in case of *on*. This is due to the morphological make-up of this element. The same applies to *in, at* and *near*.

Examples of bi-morphemic elements are *upon, next to, inside, outside, beside, below, behind, beyond, between, above* and *among*. In the literature, Svenonius (2010) represents *behind* and *beside* under the AxPart head assuming an idiomatic combination of the two parts e.g. *be-* and *hind.* In contrast, Waters (2008) assumes a compositional combination and thus decomposes this element into *be-* (Loc/Rel$_{PLACE}$) and *hind* (AxPart). In this thesis, I assume, under the hypothesis of phrasal spell-out, that they lexicalise both the Rel$_{PLACE}$ node and the AxPart node. This assumption is based on the lexical properties of these elements, which enable them to check features in these nodes, as well as the morphological fusion between the two elements which makes it hard to

separate them especially in case of e.g. *beyond, above, among* and *between.* In (11a-b), I exemplify the case of *beside*. I apply the copy theory to account for the Merge and Remerge of *beside*.

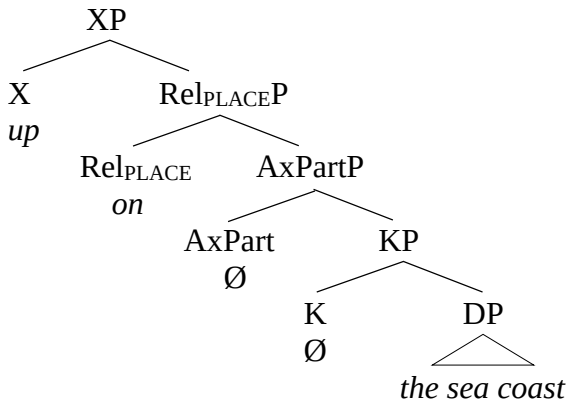
(11) a. He stood silent beside the sofa. (BNC, W_fict_prose)

b.



Upon has a different structure. In section 2.2.4, I showed that *up* defines an upper position with reference to a Ground and *on* defines a surface space. The question that arises here is which one lexicalises the Rel$_{PLACE}$. There are two morphemes but only one possible functional head. Two morphemes cannot be hosted by one terminal node. One assumption is to consider *up* a particle as previously was shown in section 2.2.4. Svenonius (2010: 142) claims that particles "introduce viewpoint for the space" denoted by the Place Relators. He further assumes that the space targeted by particles is "generaly understood from context" (ibid 143) and that they are adjoined at the *p* level (recall that *p* is Svenonius' (2010) projection where Figures are introcduced). Moreover, he postules the projection Dir (for directional) to host particles and takes it to dominate path-denoting elements. Since analysing particles is beoynd the scope of this thesis, I do not further pursue them and refer the reader to the discussion in Svenonius (2010). However, in case of *upon*, I assume that *on* lexicalises the Rel$_{PLACE}$ head, while *up* lexicalises some projections above Rel$_{PLACE}$, probably a Particle suitable projection. We will encounter *up* again in chapter 3, in the combination *up to* (see discussion there). For now, the structure of the PP *upon the sea coast* looks like the following.

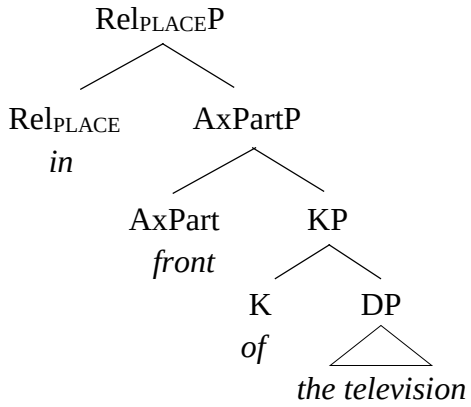
(12)



As for the case of *next to*, I assume *next* is introduced under Rel$_{PLACE}$ since the closeness denoted by the whole P is mainly suggested by *next*. One option for *to* could be that it goes under K since it can be said to signal dative case. However, I leave this idea to future research.

Finally, the tri-morphemic Ps *in front of* and *on top of* provide more lexicalisations for the terminal nodes suggested. For example, a maximum structure for the *PP in front of the television* is as in (13).

(13)



Two more functional projections that can be added to the structure above are Deg for degree modification and Deix for deictic elements. According to Svenonius (2010), the vectors projected from AxParts can be restricted by measure and directional expressions such as *two metres* and *diagonally*. Based on that, he introduces the functional head Deg (Svenonius 2010: 133). Furthermore, evidence from Persian (Pantcheva 2006, 2008) and Tsez (Comrie & Polinsky 1998) shows that there is a functional head Deix which is located above the Loc (=Rel$_{PLACE}$) element. The Deix head embraces distal and proximal elements, such as *un* 'there' in Persian, *here* and *there* in English. In Persian

and Tsez, deictic elements are introduced above LocP and below DegP. In English, a deictic element *here* or *there* can accompany the modifier *right* (14a-b).

(14) a. It gave her a strange feeling of things being right there inside her. (BNC, W_non_ac_polit_law_edu)
b. I've got one here right in front of me. (BNC, S_conv)

(14a-b) show two different sequences of *right* and the deictic elements; in (14a) the deictic element *there* follows *right.* If we take *right* to be under Deg, then the order in (14a) is in line with the Persian order DegP>DeixP> Rel_{PLACE}P. In (14b) *here* precedes *right*, so it might be thought there is a DeixP>DegP> Rel_{PLACE}P order. However, *here* in (14b) is a separate adjunct, thus PP-external. Therefore, Svenonius' (2010) assumption that DeixP is lower than DegP seems accurate.[17] Thus, the maximal linear structure of a Rel_{PALCE}P in English is as in (15):

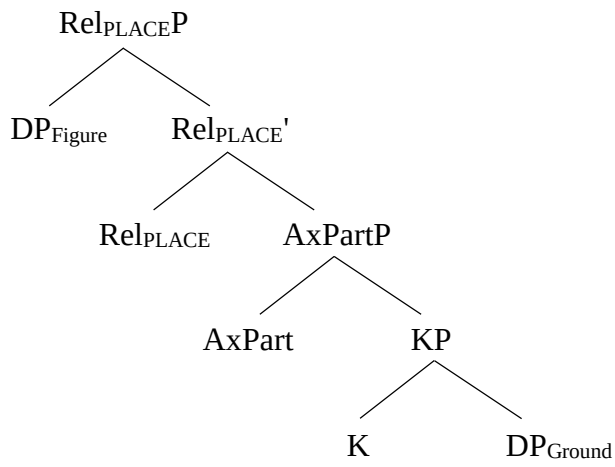
(15) [DegP [DeixP [Rel_{PLACE}P [AxPartP [KP [DP]]]]]]

2.3.3 *Interim summary*

In the last two sections I have shown that in a static locative relationship, there are two entities involved: a Figure and a Ground. The former's location is determined with reference to the latter. Elements such as *in/on/at* serve as Place Relators in the locative relationship. Semantically, they relate a Figure to a specific Space defined with reference to a Ground. This specific Space is suggested by the lexical entry of the Place Relator in use, but it belongs to a Ground or is defined with reference to a Ground. For example, *in* relates a Figure to an inner side of a Ground. The inner side or Space is suggested by the lexical entry of *in*, but referentially it is part of a Ground. Furthermore, based on the semantic function of the elements involved in a locative relation, I proposed a Place Relator projection (Rel_{PLACE}P), where each functional head has a unique syntactic and semantic function. Syntactically, the structure I propose for a P projection that denotes a static locative relation would include the following projections (repeated from (9)):

[17] For details about the lexicalisation of Deg and the difference between the syntactic realisation of measure expressions such as *two metres* and directionality expressions such as *diagonally*, I refer the reader to Svenonius (2010).

(16)



We have seen that each of these syntactic projections has a morphological representation in English. In sections 2.4 and 2.5, I will test the wider validity of the structure proposed in (16) by applying it to similar elements in Kurdish and Arabic. In particular, I will be examining the lexicalisation of these functional heads, which requires close examination of their repertoire of adpositional items. The other functional heads given in (15), i.e. Deg and Deix, are not examined in this thesis and left for further research. Anyway, they will not affect the discussion in the later chapters.

2.4 Kurdish

Based on form, Kurdish adpositions can be said to consist of two classes: simple and compound (Edmonds 1955; McCarus 1958; Shwani 2003). Simple adpositions are mono-morphemic words such as *la* 'in/at', *bo* 'to', *ba* 'by/with', while compounds consist of a combination of two free morphemes: either two simple prepositions, (17a), or a simple preposition and a substantive (noun, adverb or adjective), (17b), (Edmonds 1955; McCarus 1958; Kurdoev 1984; Fattah 1997; Samvelian 2007).

(17) a. Two simple Ps: *ba* 'by/with' + *be* 'without' = *babe* 'without'
la 'in/at' + *bo* 'to/for' = *labo* 'for'

b. Simple P + noun: *la* 'in/at' + *bardam* 'front' = *labardam* 'in front of'
Simple P + adverb: *la* 'in/at' + *pāsh* 'after' = *lapāsh* 'after'
Simple P + adjective: *la* 'in/at' + *nizīk* 'near' = *lanizīk* 'near'

Some compound Ps of category (17b) display some nominal properties due to the nominal nature of the second element, for instance the appearance of the Ezafe marker *-ī* at the ends, such as *badawr-ī* 'around' and *labardam-ī* 'in front of'. Some scholars refer to the second elements as noun places (Edmonds 1955; McCarus 1958; Kurdoev 1984). However, I argue that they are distinct from nouns in several aspects. They are in fact similar in nature to the nominal elements referred to as AxPart in Svenonius (2006, 2010) to represent elements such as *front* in English, *mae* 'front' in Japanese, *poʃte* 'behind' in Persian and *dos* 'back' in French (see Svenonius 2006; Takamine 2006; Pantcheva 2006; Roy 2006). The second element of most of the compound adpositions can function as a free-standing locative expression as well; their use as part of an adposition is probably due to a process of grammaticalization. See appendix A for examples of the two classes.

Spatial adpositions are distributed between these two classes. Similar to spatial adpositions in other languages, Kurdish spatial adpositions can be divided into two main domains: place and path. I will here discuss those used in the place domain, which I will refer to as Place Relators, delaying the discussion of path elements to chapter 3. Examples of Kurdish adpositions used in the place domain are given in (18):

(18) *la* 'in/at', *lanāw* 'inside', *lasar* 'on/above/on top of', *lazher*/*labin*/*lakhwār* 'under/underneath/below', *lanewān* 'between/among', *lapāsh/ladwāī* 'after', *lapesh* 'before', *lapisht* 'behind', *labardam/(la)barānbar* 'in front of/opposite', *labeinī* 'between', *latanisht* 'beside/next to', *lalā* 'beside', *lanizīk*/*lakin* 'near'.

In the following subsections, I explore the semantic properties and functions as well as the syntactic decomposition of these adpositions. This in turn requires a precise examination of their morphological components. This analytical task is not as easy as it may sound, as Kurdish has some elements whose categorial status is controversial. These are the bound morphemes *-awa, -dā* and *-řā* attached to the end of the DP complement in some PPs. Based on their semantic properties, and following hypotheses that postulate the existence of a PLACE/Region element in the PP structure of several languages (see e.g. Botwinik-Rotem 2008; Botwinik-Rotem & Terzi 2008; Pantcheva 2008; Terzi 2010; Romeu 2014), I propose that *-awa, -dā* and *-řā* lexicalise the syntactic head PLACE, specifying its DP complement as a location.

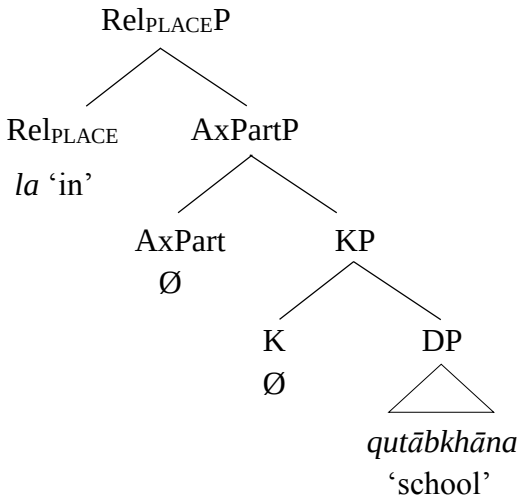
2.4.1 *Place Relators in Kurdish*

As can be seen in the list of adpositions in (18), *la* 'in/at' is the initial element in all of them. According to my proposal, the semantic function of *la* is to relate a Figure to an inner side of a Ground. An illustrative example is:[18]

(19) kich-ak-ān la qutābkhāna bū-n[19]
girl-DEF-PL at school be.PST-3PL
'The girls were at school.'

Through the use of *la,* the Figure *kichakān* 'the girls' is related to the inner side or Space of the Ground *qutābkhāna*, occupying a region (the eigenplace in Wunderlich's (1991) account). Thus, syntactically, *la* is the lexical realisation of Rel_{PLACE}. This is illustrated in (20).

(20)



The preposition *la* displays a "grammatically conditioned allomorphy" (Fattah 1997: 72). Its allomorphic determination is dependent on the form of the complement. If it is followed by nouns or independent pronouns, it has its basic form (*la*), but when followed by dependent pronouns, that is, pronominal clitics, the allomorph *le* is used as

[18] Throughout the thesis, in the glosses I use the period (.) to separate multiple categories represented by one morpheme or lexical item.

[19] The default word order in Kurdish is SOV, but in a double object construction, it exhibits the following canonical word order:

(i) S O PP V, or
(ii) S O V PP

For details on the difference between these two word orders, see the discussion in chapter 5.

shown in (21b). It is worth noting that the DP complement of *le* in (21b) is not the pronominal clitic *-m* attached to it. It is rather recognised as a personal ending inherent in the verb stem. Based on its use with pronominal clitics, *le* is not common in spatial constructions. Illustrative examples are:

(21) a. la kur-aka-m dā[20]
at boy-DEF-1SG hit.PST
'I hit the boy'

b. le-m dā
at-1SG hit.PST
'I hit him'

In Kurdish, the inner side can be lexicalised by the nominal element *-nāw* 'interior', which forms the second element of the compound adposition *lanāw* 'inside'. There, the specific Space targeted by *la* as part of its lexical entry has a morphological representation. This is in line with my assumptions in section 2.2, where I proposed that the specific Space targeted as part of the lexical entry of a Place Relator can be spelled out. I further assumed that this Space is syntactically hosted by the AxPart, which forms a possessive or part-whole relationship with the Ground. Note that although *la* 'in/at' and *lanāw* 'inside' seem synonymous in that they can be equivalent to English *in*, they cannot be used interchangeably in all contexts. Contrast:

(22) a. #top-aka-m la sindūq-aka-dā dānā[21]
ball-DEF-1SG in box-DEF-DĀ put.PST.1SG
'I put the ball in the box.'

b. top-aka-m lanāw sindūq-aka-dā dānā
ball-DEF-1SG inside box-DEF-DĀ put.PST.1SG
'I put the ball inside the box.'

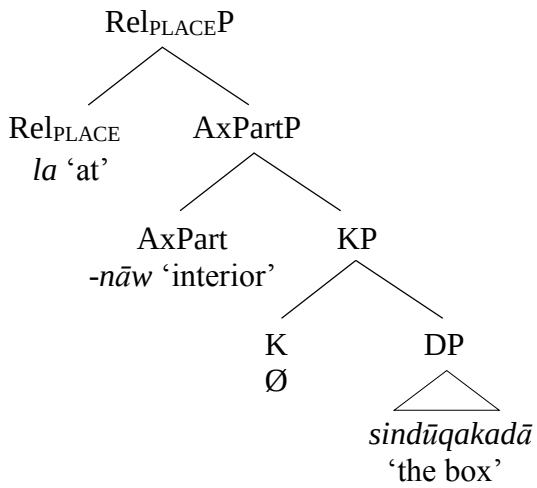
In (22), example (b) is more appropriate and preferable than (a) to express the meaning that the ball is inside the box. The difference between *la* and *lanāw* lies in the fact in that *la* has 'in' as its default meaning but when the AxPart is lexicalised by elements

[20] In a recent study by Kareem (in preparation), the bound morpheme *-m* is taken as a subject clitic. In chapter 4, I elaborate more on this.

[21] See section 2.4.3 for a syntactic label of *-dā*.

such as *sar* ‘top’ and *zher* ‘bottom’ it has the meaning of ‘at’. This is also shown by the English equivalent for *la*, namely *in* and *at*. In contrast, *lanāw* suggests an inner Space only due to the presence of *-nāw* ‘interior’. The syntactic structure of *lanāw sindūqakadā* ‘inside the box’ is given in (23).

(23)



The nearby Space denoted by *la* can refer to a variety of spaces or parts defined with reference to a Ground. These are represented by the different elements found as the second part of the compound adpositions. It can be *sar* ‘upper space or part’, *zher*/*bin*/*khwār* ‘lower space or part’, *newān* ‘middle part’, *pāsh* ‘backward space’, *pesh* ‘forward space’, *pisht* ‘back’, *bardam/barānbar* ‘front/opposite’, *newān*/*beinī* ‘the Space in between’, *tanīsht/lā* ‘a side of’, *nizīk*/*kin* ‘nearby’. Each of these elements define a specific Space or part with reference to a Ground, and the functional head that hosts them is the AxPart, similar to the case of *-nāw*. As mentioned earlier, these elements are referred to as noun places and can also be used independently as free-standing locatives which is probably due to a process of grammaticalization, in particular *zher* ‘under’, *newān* ‘between’, *pāsh* ‘after’ and *pesh* ‘before’.

In Kurdish, there are several differences between the elements that lexicalise AxPart and regular nouns, adverbs or adjectives. Unlike regular nouns, noun elements such as *bardam* ‘front’ and *nāw* ‘interior’ cannot be introduced by articles or demonstratives, pluralized, or occur in the head position of adjectival Ezafe constructions (nouns modified by adjectives).[22] Adverb elements such as *pāsh* ‘after’ and *pesh* ‘before’

[22] Note that when the variant forms of the compound Ps, such as *sar* ‘on’, *zher* ‘under’, *pisht* ‘behind’ and *pāsh* ‘after’, occur in the head position in nominal Ezafe constructions, they form part of a possessive construction. Illustrative examples are:

cannot modify other categories (nouns, verbs and adjectives) the way regular adverbs do. With regard to adjectival elements such as *nizīk* ‘near’, despite its frequent use as adjective when not followed by complements, it displays quite distinct properties when used as preposition. Thus, unlike ordinary adjectives, *nizīk* ‘near’, when part of compound prepositions, cannot receive the comparative and superlative inflections *-tir* and *-tirīn*, respectively. Finally, while regular nouns, verbs and adjectives allow modification by modifiers such as *zor* ‘a lot’, *kamek* ‘a little’, *handek* ‘some’, *yaksar* ‘at once’, AxParts may or may not. When modifiers are available, they modify the whole PP, not the P alone. Table 2.2 summarises and exemplifies all these differences. (+) means the property is available, (–) not available and (N/A) means the property is not applicable or relevant.

(i) a. sar-ī mez-aka khāwen-a
top-EZ table-DEF clean-be.PRS.3SG
‘The top of the table is clean.’
b. pisht-ī kursy-aka shkāw-a
back-EZ chair-DEF broken-be.PRS.3SG
‘The back of the chair is broken.’

Property	Ns	Advs	Adjs	AxParts	Examples[23]
Allow articles	+	N/A	N/A	–	*mināł-**aka*** 'the child' vs. **bardam-**aka*** [front-DEF]
Allow demonstratives	+	N/A	N/A	–	***'am** mināła* 'this child' vs. ****'am** bardam* [this front]
Pluralized	+	N/A	N/A	–	*mināłak-**ān*** 'the children' vs. **bardam-**ān*** [front-PL]
Occur in head position in adjectival Ezafe constructions	+	N/A	N/A	–	*mināłekī **jwān*** 'a beautiful child' vs. **bardamī **jwān*** [front beautiful]
Function as adverbial modifiers	N/A	+	N/A	–	***zu** hātīt* 'you came early' vs. *****pāsh** hātī-t* [after come.PST-2SG]
Allow comparative and superlative inflections	N/A	N/A	+	–	*shārekī nizīk-**tir*** 'a nearer city' vs. **nizīk-**tir** shār* [nearer city]
Allow adverbial modifiers	+	+	+	+/–	***handek** mināł* 'some children', ***handek** kherā bro* 'move a bit quickly', ***handek** jwāna* ' a little bit beautiful' vs. ***handek** pisht mezaka* 'a little bit behind the table' but *****handek** nāw mez-aka* [a little inside table-DEF]

Table 2.2 Summary of differences between AxParts and regular nouns, adverbs and adjectives in Kurdish

The morphological form of the Ps made up of *la* plus one of the substantive elements involved in the compound class suggests that the functional heads spelled out are Rel_{PLACE} and AxPart. However, Kurdish has an element that lexicalises the K head as well. Adpositions such as *la-barānbar(-ī)* or *la-bardam(-ī)* 'in front of' end with the Ezafe marker *-ī*. This element is usually referred to as a case marker (Samiian 1994;

[23] For explanatory purposes, I present the relevant elements tested in bold and provide glosses enclosed by square brackets for the ungrammatical examples.

Pantcheva 2006) or linking morpheme (Holmberg & Odden 2008). They mainly link the head to a modifier (24a) or possessor (24b).[24, 25]

(24) a. māł-ī spī
house-EZ white
'white house'
b. dargā-ī māł-mān
door-EZ house-POSS.1PL
'the door of our house'

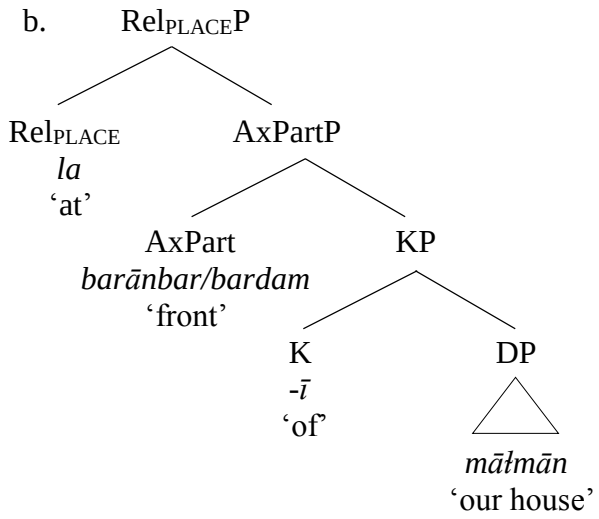
Accordingly, I assume that the Ezafe marker *-ī* appearing on these adpositions is similar to the possessive marker *of* in English and is introduced under the K terminal node. It is worth noting that this Ezafe is restricted to compound adpositions, where it is obligatorily present in some, as in *la-bein-ī* 'between', *la-lā-ī* 'beside', *la-darawa-ī* 'outside', absent in others, as in *lanawan* 'among/in the middle of', and optional in yet others, as in *la-barānbar(-ī)* and *la-bardam(-ī)* 'in front of'. The restriction of the Ezafe marker to compound adpositions is an additional reason to think that the second element of such compound adpositions is (still) somewhat noun-like.

The presence of Ezafe means that English *in front of* shows a one-to-one correspondence with its Kurdish adpositional equivalents *la-barānbar(-ī)* and *la-bardam(-ī)*. This is shown in (25a-b).

(25) a. la- barānbar -ī māł-mān
la- bardam -ī māł-mān
at front of house-POSS.1PL
'in front of our house'

[24] It is worth noting that the DP complement in Central Kurdish is assigned an unmarked oblique case. However, there are examples such as *la bāzār-y būm* 'I was in the market', used in a very few Sorani varieties. The DP complement *bazar* here ends with a marked oblique case, *-y*. Also in Hawrami, a language closely related to Kurdish, the DP ends with the oblique case *-ī* when the adposition ends with the Ezafe marker *-u* (see Holmberg & Odden 2008).

[25] The general structure in Kurdish is that Ezafe marks the head item and is followed by a modifier. For instance, in (24a) the Ezafe *-ī* attaches to the head *māł* 'house' and *spī* 'white' is the modifier. Similarly in (25a) *māł* 'house' is the modifier of the AxPart element *barānbar* 'front' roughly meaning 'the house's front'. In general, the Ezafe marks dependence (of the following element on the preceding one), whether this dependence involves possession or modification depends on the nature of the following category. The determination of the exact status of the Ezafe is all its various uses will take me too far afield; therefore, I leave it for further research.



As can be seen, the distribution of the elements in *la-barānbar(-ī)* and *la-bardam(-ī)* 'in front of' fits well in the tree structure in (25b), displaying the same order as *in front of*. Each element has been assigned to a functional head based on its semantic property. Similar to *in* in English, *la* 'in/at' lexicalises the Rel$_{PLACE}$ head, *barānbar* and *bardam* define the front part of the Ground, thus lexicalising the AxPart node, and the possessive marker *-ī* is under the K head.

Next I turn to examples of DP Grounds/complements ending with one of the bound morphemes *-awa, -dā* and *-řā*. The question that arises here is: under what functional head these elements are introduced? In the discussion below I will first present facts about these elements mainly in terms of morphology and meaning, and later in section 2.4.3, based on the data discussion, I argue for their syntactic position in the P projection.

2.4.2 *-awa, -dā, -řā: facts*

In this section, I discuss the categorial status of *-awa, -dā* and *-řā* and the combination [P + DP complement] they appear in. I will first define the morphological, syntactic and semantic properties of these elements and try to determine whether they license a separate class. *-awa, -dā* and *-řā* are bound morphemes attached to the end of the DP complement in some PPs. In the glosses like (26), I use '-AWA, DĀ and ŘĀ', pending resolution of their categorial status in the course of this sub-section and the next one.

(26) la māł-awa/dā/řā
at house-AWA/DĀ/ŘĀ

The properties of *-awa, -dā* and *-řā* have received little attention in the literature on Kurdish grammar. Moreover, there is no agreement about their status among the few scholars that have investigated them. Most of them refer to these bound morphemes as suffixes (Edmonds 1955; McCarus 1958; Kurdoev 1984; Fattah 1997). A few scholars argue that these morphemes function as postpositions (MacKenzie 1961; Fattah 1997; Thackston 2006). Reflecting the uncertainty, in glossed examples in the literature these morphemes are generally not given a grammatical representation. Semantically, Edmonds (1955) and McCarus (1958) claim that these morphemes may affect or 'fix' the meaning of the preposition; however, they do not explain how this happens. Fattah (1997: 174) describes them as directional elements but also does not elaborate on what exactly this entails.

One thing to note about *-awa, -dā* and *-řā* is that they only occur at the end of prepositional complements, whether these are nouns, pronouns or pronominal clitics. Consider examples (27a-e):

(27) a. min la māł(-awa) bū-m
I at home-AWA be.PST-1SG
'I was at home.'

b. min bo māł-awa da-ch-im
I to home-AWA ASP-go.PRS-1SG
'I am going home.'

c. min banāw bākh-aka-dā řoisht-im
I through park-DEF-DĀ go.PST-1SG
'I went through the park.'

d. min pe-y-dā řoisht-im
I by-PC.3SG-DĀ go.PST-1SG
'I went through it.'

e. tozūbā-ka la Karkūk-řā dastīpe-kird[26]
storm.DEF from Kirkuk-ŘĀ start-do.PST.3SG
'The storm started from Kirkuk.'

There are also examples such as *pedā* 'by/through' and *peřā* 'with/including', in which they are attached directly to *pe* 'by' (note that *pe* is the allomorph of *ba* 'by/with', which is used when the DP complement is a pronominal clitic or null). In all such instances there is a complement realised somewhere else in the sentence and/or understood from the context, so a case could be made for a null complement immediately following the word *pe*. For example, example (27d) can also be expressed as *pedā řoishtim* 'I went through it' with the pronominal clitic dropped.

Below I will discuss in some detail the morphological, semantic and syntactic status of *-awa, -dā* and *-řā*. The first question that arises here has to do with whether they should be considered suffixes or clitics. Zwicky and Pullum (1983) list six criteria that distinguish these two categories. Table 2.3 lists these criteria and specifies whether they apply or not to the elements *-awa, -dā* and *-řā*.

Criteria	**Affixes**	**Clitics**	***-awa, -dā* and *-řā***
The degree of selection between host and bound morpheme	High	Low	Low
Arbitrary gaps in the set of combinations	Yes	No	Yes
Morphophonological idiosyncrasy	Yes	No	No
Semantic idiosyncrasy	Yes	No	No
Can be affected by syntactic rules	Yes	No	No
Can be attached to clitics	No	Yes	Yes

Table 2.3 *-awa, -dā* and *-řā*: affixes vs. clitics

As can be seen, *-awa, -dā* and *-řā* display almost all the criteria associated with clitics. First, they show a low degree of selectivity with regard to their hosts, because they can attach to nouns, pronouns, pronominal clitics and adpostions. Second, *-awa, -dā* and *-řā*

[26] In chapter 3, section 3.7.2 I argue that *la* is a homonym that has two versions: 'in/at' and 'from'.

do not cause any phonological or morphological variation in their hosts. Third, these morphemes do not form a new independent meaning with their hosts. Fourth, the combination [host + *-awa*/*dā/řā*] does not form a syntactic unit by itself, but this combination along with the preceding adposition form a phrasal constituent. This suggests that there is a strong affiliation between these morphemes and the adpositions, clearly noticed in elements such as *pedā* 'by/through' and *peřā* 'with/including'. In addition, these elements are dropped once the initial element is dropped (Fattah 1997), hence *lasar mezaka-awa* 'on the table' vs. *sar mezaka***awa*. Another matching criterion with clitics is that they can attach to clitics as shown in (27d), where *-y* is a pronominal clitic which represents the DP complement. In addition, Hudson (2001: 245) defines a clitic as a "unit which is a distinct word for syntax, but a mere morpheme for morphology and phonology". Having this definition in mind, although *-awa, -dā* and *-řā* do not stand as independent elements, they do have a syntactic realisation, namely they are syntactic heads (see section 2.4.3, where I provide a syntactic analysis for them).

With regard to the affix-matching criteria, *-awa, -dā* and *-řā* show certain arbitrary cases with regard to the set of combination. The selection of *-awa, -dā* or *-řā* generally depends on the type of P and the DP complement used. Accordingly, they can be optional or obligatory. In (27a), the presence of *-awa* seems optional. In (27b), *-awa* seems obligatory, although some of the Kurdish speakers I consulted said it might be optional there, too. One can assume that this might be due to the type of P in use; *la* in (27a) is a locative P but *bo* is a directional P. However, consider: [27]

(28) a. min la qutābkhāna-*wa bū-m
I at school-WA be.PST-1SG
'I was at school.'

b. min bo qutābkhāna-*wa da-ch-im
I to school-WA ASP-go.PRS-1SG
'I am going to school.'

In (28a-b), *qutābkhāna* 'school' does not allow *-awa*, although the same prepositions and same verbs are used as in (27a-b), respectively. There are many nouns that behave in the same way, such as *bāzār* 'market', *mizgawt* 'mosque', *shākh* 'hill', *shār* 'city',

[27] *-awa* has the variant form *-wa*. The selection is dependent on the final sound of the noun it is attached to: *-awa* follows consonants and *-wa* follows vowels.

etc.; all of these do not allow *-awa*. In fact, among the Kurdish native speakers I consulted, only *māł* 'home' was said to allow *-awa*. Moreover, when the verb ends with the verbal suffix *-awa* 'again', *māł* does not allow *-awa*, hence, *bo māł(*-awa) dachmawa* 'I am going home'. The occurrence of (27b) can thus be an exception. However, *qutābkhāna* 'school' and the other words listed here allow the morpheme *-dā*, specifically with the use of *ba* 'by' with which *-dā* mostly occurs obligatorily. Other than that, *-awa* and *-dā* are optional. The prepositions *tā* 'until' and *babe* 'without' do not accept these elements in their DP complements. Apart from that, this distinction in usage is not always patent as the selection could be subject to inter-dialectal variation as is the case with *-řā*. This latter is not used in the Sorani variety spoken in Sulaimaniya, and infrequently used in Erbil. The second criterion of affix-matching in table 2.3, thus, is not a very robust one for suggesting a similarity between these morphemes and affixes.

The preceding discussion, therefore, demonstrates that *-awa, -dā* and *-řā* are similar to clitics. Consequently, I propose that, morphologically, they are clitics. The reason why they are sometimes classified as postpositions might be that Kurdish is an SOV language. Nevertheless, although the clitics (*-awa, -dā* and *-řā*) follow DP complements, they do not display the properties of postpositions. For example, they never head the PP or occur by themselves without a preceding simple or compound P element. Therefore, I will not allocate them to the category of postpositions. Moreover, elements such as *pedā* 'by/through', *peřā* 'with/including', *tedā* 'at/in' clearly show that these elements are not postpositions as they combine with the simple P directly.[28] On this basis, McCarus (1985) takes them as a separate class and refers to them as discontinuous adpositions. However, I claim that the combination [P + [DP + *-awa/dā/řā*]] does not suggest a separate class, beside the simple and compound classes. As was shown above, the occurrence of these elements is optional in most cases and is sensitive to the type of P and the DP complement. More arguments in support of this claim can be gained from the syntactic analysis below.

In the following section, I will examine the syntactic status of *-awa, -dā* and *-řā* in the P projection where I propose an account for them based on a hypothesis that suggests the existence of a PLACE element.

[28] *te* in *tedā* is the allomorph of *da* 'at'. Although in most dialects of modern Kurdish it has disappeared and been replaced by *la* 'in/at', *da* is still used in the Mukri dialect (Fattah 1997: 174).

2.4.3 *-awa, -dā, -řā: proposal*

In section 2.4.1, I showed that the spatial Ps within the simple and compound class have elements that lexicalise the functional heads Rel_{PLACE}, AxPart and K in a P projection. The question that arises here is: what is the functional head under which *-awa, -dā* and *-řā* are introduced? In the discussion below I will elaborate on the semantic contribution of these elements and then argue for their syntactic positions within a fine-grained PP structure.

In section 2.4.2, I have reached the conclusion that *-awa, -dā* and *-řā* are clitics morphologically but not postpositional elements syntactically. The morpheme *-awa* can be used with locative Ps such as *la* 'in/at'; *-dā* usually accompanies directional Ps (mostly *ba* 'by'); and *-řā* accompanies a few Ps such as *la* 'from', as in *la Karkūk-řā dastīpekird* 'it started from Kirkuk', or *ba* 'with', which denotes a non-spatial use of involvement as in *ba Sāra-řā* 'including Sara'. Contra Fattah's (1997: 174) claim that these elements are directional suffixes, there are two possibilities to account for their semantic and syntactic structure; either they lack a clear definite semantics and hence own no syntax, or they are specific location-denoting elements that can be represented as a PLACE element in a P projection. The second possibility will be adopted at the end as it is based on evidence that supports the analysis proposed for the Kurdish adpositional data. Consider again the examples in (27a-e), repeated here as (29a-e).

(29) a. min la māł(-awa) bū-m
I at home-AWA be.PST-1SG
'I was at home.'

b. min bo māł-awa da-ch-im
I to home-AWA ASP-go.PRS-1SG
'I am going home.'

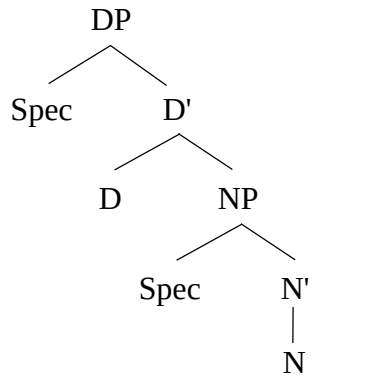
c. min banāw bākh-aka-dā řoisht-im
I through park-DEF-DĀ go.PST-1SG
'I went through the park.'

d. min pe-y-dā řoisht-im
I by-3SG-DĀ go.PST-1SG
'I went through it.'

e. tozūbā-ka la Karkūk-řā dastīpe-kird
storm-DEF from Kirkuk-ŘĀ start-do.PST.3SG
'The storm started from Kirkuk.'

In (29a), the presence of *-awa* is optional. It does not affect the locative meaning denoted by *la*. In (29b), again *-awa* does not affect the meaning denoted by the directional element *bo*. The same is true for *-dā* in (29c and d); they do not affect the meaning denoted by the preceding preposition. *-řā* in (29e) may seem to denote a directional meaning since it is used with *la* which expresses a source meaning here (see chapter 3, section 3.7.2). However, the meaning suggested by the adpositions is mainly inherited in the first element, which is a simple or compound preposition: *la, bo, banāw* and *pe*. In addition, it should be noted that these bound morphemes do not inherit the meaning denoted by the preposition used, be it locative or directional. Thus, adopting the first possibility above, that these bound morphemes may not have a definite semantics (sometimes locative and sometimes directional), it could be assumed that these clitics are dummy elements and are not assigned a specific categorial label. And then, since these elements are not consistent in meaning, it might be thought that they are not to be associated with a proper functional projection in the internal syntax of Kurdish spatial PPs. However, this would lead to problems. In the syntactic structure of the PPs in (29), the clitics would then appear within the noun complement, as shown in (30), with no separate projection for them.

(30)



a-b. *māł-awa*
c. *bākhaka-dā*
d. *-y-dā*
e. *Karkūk-řā*

This analysis seems in line with the revised model of Svenonius (2010) in structure (16) since no functional heads are proposed after the DP Ground in a prepositional system.

That is, an analysis of the type [K+DP+'a functional head'] is not available in Svenonius' (2010) model. However, the structure presented in (30) ignores the fact that *-awa, -dā* and *-řā* are clitics, and thus they need to be assigned a specific category in the P projection. Hence, another scenario is called for.

The second possibility is that these clitics are specific location-denoting elements. This can be supported by PP expressions such as *leradā* 'here', *lanāwdā* 'inside', *zhūrawa* 'inside' and *pedā* 'by'. Examples of these expressions are as follow (the examples are adapted from Google and Facebook status):

(31) a. nam-aka-t lera-dā błāw-kawa
thesis-DEF-2SG here-DĀ public-make.PRS.2SG
'Publish your thesis here.'

b. hichī lanāw-dā namā
nothing inside-DĀ remain.PST.3SG
'Nothing remained inside.'

c. chūn-a zhūr-awa
go.PST.3PL-to inside-AWA
'They went inside.'

d. pe-dā da-řwāt
by-DĀ ASP-go.PRS.3SG
Intended meaning: 'It goes by this place.'

Based on the literal meaning of these examples, I suggest that *-dā* and *-awa* denote a set of points that represent a place. For example, in (31a) *leradā* can be decomposed into *lera* 'here' and *-dā*. *lera* can itself be decomposed into *le* 'at' (the allomorph of *la* 'in/at') + the bound morpheme *-ra*, which together with *-dā* seem to mean 'at this place'. In (31b) *lanāwdā* 'inside' is made up of the $\text{Rel}_{\text{PLACE}}$ element *la* 'in/at', the nominal element *nāw* 'interior' and *-dā* which is attached to the AxPart element directly. The literal meaning of such combination is 'at this inner place'. Similarly, in (31c) *zhūrawa* 'inside' is made up of the AxPart element *zhūr* 'interior' and *-awa*, and together they mean 'the interior place'. Finally, *pedā* is a path-denoting element made up of *pe* (the allomorph of *ba* 'by/with') and the clitic *-dā*. The literal meaning of this element is 'by the place of'. So obviously *ba* is basically responsible for the 'by' meaning, while *-dā* can be said to denote the spatial notion of 'place'. Based on the

analysis of *leradā, lanāwdā, zhūrawa* and *pedā*, the semantic function of *-dā*, *-awa* (and by extension *-řā*) can be assigned to a syntactic head.

A possible syntactic head can be the PLACE noun element, which has been proposed in the literature for several languages, such as Hebrew (Botwinik-Rotem 2008), Persian (Pantcheva 2008), Greek and Spanish (Terzi 2010) and English (Terzi 2010; Cinque 2010). In these studies, the PLACE element was suggested to account for the nominal or lexical properties of adpositional elements in the languages investigated. In addition, Romeu (2014) assumes a similar category in his analysis of Spanish spatial adpositions, but he refers to it as Region. According to him, the Region defines the set of points occupied by the Ground. The common characteristics outlined in the above accounts, in particular Terzi (2010), Botwinik-Rotem (2008) and Pantcheva (2008), for the PLACE element can be summarized as follows:

- It is a phonologically unrealised noun element.
- It is in a possession relation with the DP Ground.
- Its semantic function is to define the area or space occupied by and/or surrounding the DP Ground.

The introduction of PLACE into Svenonius' (2010) model raises several issues in terms of similarity between Svenonius' AxPart and the silent PLACE and the position of each in a P projection. As far as English data is concerned, only Terzi (2010) and Cinque's (2010) analyses are available. Their proposals are slightly different, though, in terms of the relation that they posit between the PLACE element and the DP Ground. For Terzi (2010: 212-215), the nominal elements in English *in front of, on top of* and *beside* modify the PLACE noun. Further, she treats the DP Ground as the possessor of PLACE. For example, according to Terzi (210), the linear structure of a PP such as *in front of the house* can be represented as in (32). Cinque (2010) treats the DP Ground as the possessive modifier of PLACE. In Cinque (2010), a PP such as *from under the table* is represented as in (33).

(32) $[_{PPLoc}\ [_{PLoc}$ in $[_{DP}$ front $Place_i\ [_{D}$ of $[_{AgrP}$ the house $[_{QP/NP}\ t_i]]]]]]$

(Terzi 2010: 212)

(33) [$_{PPdir}$ from [$_{PPstat}$ AT [$_{DPplace}$ [$_{AXPartP}$ under X˚ [$_{PP}$ P [$_{NPPlace}$ the table [PLACE]]]]]]]

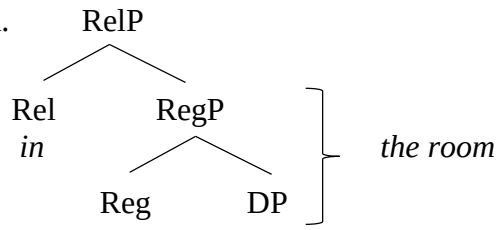
(Cinque 2010: 8)

The lexicalisation of the category PLACE is found in certain languages, such as Ainu, Tairora and the Tucanoan language Barasano, in the form of bound morphemes. An illustrative example from Tairora is given in (34), cited in Cinque (2010: 14) (see Cinque 2010, endnote 5 for more examples).

(34) naabu-qi-ra bai-ro
house-in-place is-he
'He is in the house (in the house place)'

In Romeu (2014), the Region element, which he proposes to give the set of points of the space occupied by the Ground, can be lexicalised by the DP Ground or by some spatial elements such as *front* in English and *bajo* 'under/low' in Spanish. For example, in a PP such as *in the room*, the DP *the room* can lexicalise both Reg(ion)P and DP Ground, (35a). In *in front of the house, front* lexicalises both the AxPart node and Reg node, (35b). Similarly, in *debajo de la mesa* 'under the table', *bajo* lexicalises AxPart and Reg, (35c).[29]

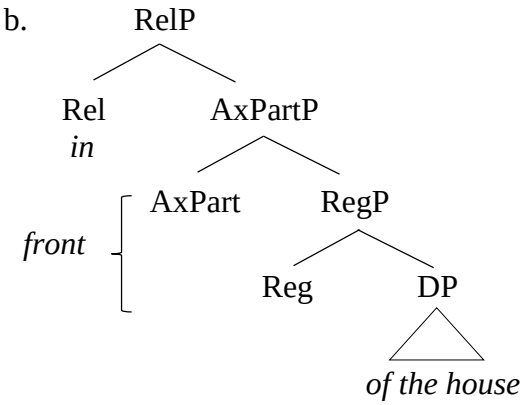
(35) a.



(adapted from Romeu 2014: 54)

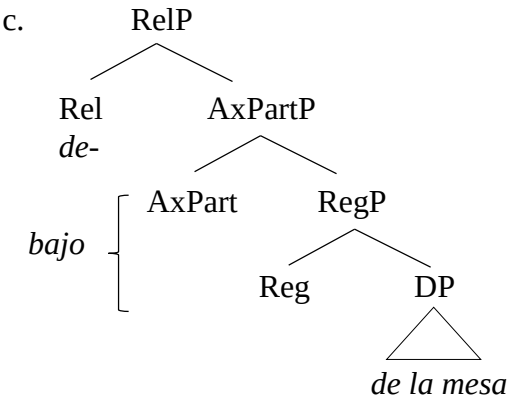
[29] For details on the projections proposed in the structures, the reader is referred to Romeu (2014, chapter 2).

b.



(Romeu 2014: 305)

c.



(Romeu 2014: 311)

It must also be said that the structures provided in these works are not very clear or detailed enough to make precise comparisons. However, they establish the fact that AxPart is distinct from the PLACE element that represents the space occupied by the Ground or modified by the AxPart.

If we take AxPart to be the Space defined with reference to a Ground and PLACE to be the set of points that define the space occupied by the Ground, the distinction between these two elements can be verified straightforwardly in Kurdish. See the examples in (36). Example (36a) is repeated from (29c).

(36) a. min banāw bākh-aka-dā řoisht-im
I through park-DEF-PLACE go.PST-1SG
'I went through the park.'

b. mināł-ak-ān la darawa-ī māł-awa yārī-yān-kird
child-DEF-PL at outside-EZ house-PLACE game-3PL-do.PST
'The children played outside the house.'

As can be seen in the glosses, I postulate that *-awa, -dā* and *-řā* are morpho-phonological realisations of the PLACE element. Although *-awa, -dā* and *-řā* do not have an evident semantic contribution to the P used, they do seem to denote a spatial meaning of some sort, which can be assumed to be a place or space. The semantic function of this head, parallel to what Terzi (2010: 202) and Romeu (2014: 47) assume, is probably to denote the space occupied by the DP Ground or define the Ground as a place. Accordingly, the bound morphemes *-awa, -dā* and *-řā* define a place. It can be identifying the Ground as a place. For example, in (36a) *bākhakadā* means the park as a place and in (36b) *māława* means the house as a place or the space occupied by the Ground *māł* 'house'.[30] The place defined by these bound morphemes can also be taken as part of the Space modified by AxParts as exemplified above in (31b). However, in Kurdish it appears that whenever a DP Ground is overt these PLACE elements attach to the end of the DP Ground defining it as a place. In sum, this analysis is consistent with the cartographic approach which assumes that the presence of a morpheme indicates the presence of a unique syntactic head.

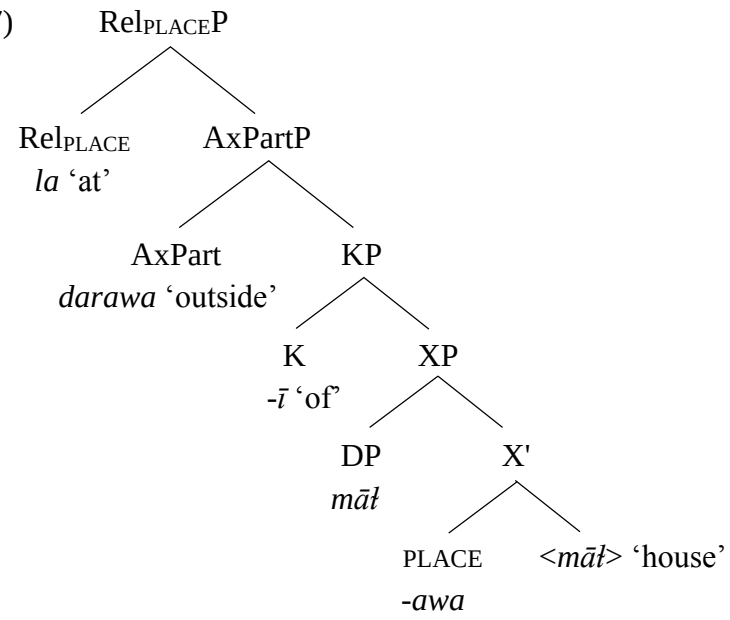
As to the position of the PLACE head in a PP structure and the kind of association it has with the DP complement, no consensus seems to have been reached by the researchers in the studies cited above (cf. e.g. Pantcheva 2008; Botwinik-Rotem 2008; Terzi 2010; Cinque 2010; Romeu 2014). Thus, I present a slightly different structure, assuming still a possessive relation. I suggest that PLACE is introduced between KP and DP, heading an XP projection and subcategorizing the DP as its complement. Under this assumption, and based on the fact that *-awa, -dā* and *-řā* are clitic elements attached at the end of the DP Ground, the latter undergoes movement to Spec-XP under Kayne's (1994) antisymmetry theory, giving the order DP-PLACE.[31] This is illustrated in the structure in (37) for *la darawaī māława* 'outside the house':[32]

[30] An objection to the PLACE assumption is that *-awa, -dā* and *-řā* do not display nominal features to lexicalise the PLACE noun element. However, I will leave this objection aside for present and accept the other evidence that support the assumption. Besides, the *-ra* element in example (34), which represents PLACE in Tairora does not seem to be a nominal element either.

[31] Kayne's (1994) theory is based on the Linear Correspondence Axiom (LCA). He claims that there is a rigid relation between hierarchical structure and linear order such that a symmetric c-command entails precedence. A consequence of this is that the only possible base-generated order is Spec-Head-Complement. Any other orders, such as Complement-Head are derived by movement.

[32] Although one may think that the XP in (37) can be represented something like PLACEP, I prefer to leave it as such in this thesis for it may be represented by a projection that denote a possessive relationship between the PLACE and DP Ground.

(37)



Comparing the two alternative analyses presented, i.e. the structures (30) and (37), the second one is descriptively more adequate since it provides a syntactic basis for the semantics of these bound morphemes and their role in a spatial relationship. Besides, it is line with the classification of these elements as clitics. Therefore, I adopt the second analysis. It is worth noting that in this thesis I draw the PLACE element in the structures to account for the clitics *-awa*, *-dā* and *-řā* whenever one of them is phonologically present in a PP, otherwise I will not include it in the structures for notational simplicity.

2.4.4 *Interim summary*

In this section, I have examined the syntax, semantics and morphology of the Place Relators in Kurdish. We have seen that the morphological constructions of the Place Relators fit the syntactic structure I presented in structure (16), which is an adaptation of Svenonius' (2010) model of P projection. The data showed that Kurdish has lexical/morphological representations of the functional heads Rel$_{PLACE}$, AxPart and K. The Rel$_{PLACE}$ head hosts the only locative element *la*, the AxPart head can be lexicalised by the nominal elements within the compound class e.g. *-nāw* 'interior', *-sar* 'top', *-barānbar* 'front', and the K head is lexicalised by the Ezafe marker *-ī*.

I have proposed a syntactic analysis for the bound morphemes *-awa*, *-dā* and *-řā* which come at the end of the DP complement in some PPs. I have argued that the combination [simple or compound P + [DP complement + *-awa/dā/řā*]] cannot be qualified as a class

by itself, because their occurrence is mostly dependent on the use of a simple or compound P. This argument involved determining the categorial status of the bound morphemes *-awa, -dā* or *-řā* that end some complements. The discussion showed that they are clitics morphologically, and associated with a locative meaning semantically.

Moreover, I proposed that these clitics lexicalise the PLACE element. This idea was based on a hypothesis which postulates the existence of a silent PLACE noun element in the PP structure in several languages, such as Hebrew, Persian, Greek and German and an overt one in certain other languages such as Tairora and Ainu. Accordingly, I slightly modified the model in (16) and assumed that Kurdish PP structure involves the functional heads Rel_{PLACE}-AxPart-K-PLACE. I introduced PLACE in an XP projection that lies between KP and DP Ground. In the next section, I turn to equivalent elements in Arabic.

2.5 Arabic[33]

Arabic adpositions can be divided into two main classes: (a) true prepositions; this is the mono-functional category which includes items that can function only as prepositions; and (b) semi-prepositions; this is a multi-functional category and includes items that can function as adverbs, nouns and prepositions (Badawi, Carter & Gully 2004; Ryding 2005; Abu-Chacra 2007). This division is constructed on a lexical-syntactic basis; that is, while the true prepositions display all the unique properties of prepositions, the semi-prepositions do not as they have other uses as well. The true prepositions can be further subdivided into two categories on an orthographic basis; separable and inseparable. The separable Ps are independent elements, e.g. *fī 'in'*, *'alā* 'on', *'ilā* 'to'. The inseparable prepositions, of which there are only few, are prefixed to their complements, e.g. *bi-* 'at/in', *li-* 'to'. This division exists in both Modern Standard Arabic (MSA) and Iraqi Arabic (IA). See appendixes B and C for representative examples.

In this section, I first present a brief introduction to the properties of the two classes and then examine their semantics and internal syntax in the following subsections.

[33] Parts of this section was published as Saeed (2014).

2.5.1 *True and semi-prepositions in Arabic: an overview*

Exploring the grammatical structure of the true prepositions and the semi-prepositions reveals certain similarities and differences. Consider the examples below from IA and MSA:[34]

(38) a.	khalet	al-kitāb	‘a-l-mez		IA
	put.PST.1SG	DEF-book	on-DEF-table		
	waḍa‘tu	al-kitāb-a	‘alā	al-miṇḍadah	MSA
	put.PST.1SG	DEF-book-ACC	on	DEF-table	
	‘I put the book on the table.’				
b.	khalet-a	fog	al-mez		IA
	put.PST.1SG-3SG	above	DEF-table		
	waḍa‘tu-hu	fawq-a	al-miṇḍadah		MSA
	put.PST.1SG-3SG	above-ACC	DEF-table		
	‘I put it above the table.’				

Semantically, *‘a-/‘alā* ‘on’ and *fog/fawq* ‘above’ express the spatial notion of location, and syntactically, in both cases, the following noun is in the genitive case.[35] However, in Arabic grammar books, *‘alā* ‘on’ is categorised as a preposition and *fawq* ‘above’ as a noun (or adverb) of place (e.g. Abi Asbar 1968; Abdul Hameed 1980; Al-Shumasan 1987). A basic difference between them involves inflection; while prepositions are not inflected, nouns are. Thus, due to their nominal properties, the semi-prepositions can receive inflectional cases such as accusative and genitive markers according to their syntactic functions and positions in the sentence. For example, *fawq* in (38b) receives the accusative case marking *-a* due to its function as a specific type of object, which is referred to as (maf‘ūl fīh) in the Arabic grammar books. The case-marking sensitivity of

[34] For the definite article, which is usually cited as *’al* ‘the’ in the literature, I transliterate it as *al-* in non-assimilated cases, e.g. *al-bāb* ‘the door’, and *a* plus the initial sound of the word it is prefixed to in assimilated cases, e.g. *as-sayārah* ‘the car’.

[35] The genitive case on the DP complement takes different surface realisations depending on the noun type. For example, in classical Arabic, where it is mostly marked, the genitive case is usually marked by *-i* for singular nouns, such as *fawqa alminḍadat-i* ‘above the table’. For a detailed list the reader is referred to Ryding (2014: 149-155).

these prepositional elements, however, is most apparent in classical Arabic, less regularly in MSA, and not at all in IA or other colloquial varieties of Arabic.[36]

Another nominal property displayed by the semi-prepositions is that some of them can function as DP complements. See examples below of MSA:

(39) a. khalf ash-shāsha
behind DEF-screen
'behind the screen'
b. min al-khalf
from DEF-back
'from the back'

In (39a), *khalf* functions as a preposition, while in (39b) it is a DP complement of the preposition *mina* 'from'. So *khalf* in (39b) has totally shifted its category. In addition, some of the semi-prepositions show further nominal properties beside case, including definiteness as seen in (39b), and diminutiveness, e.g. *qabl ~ qubeil* 'a little before' and *ba'd ~ bu'eid* 'a little after'. However, despite their nominal features, the semi-prepositions do not accept modification by adjectives, numerals or quantifiers, a feature shared by the preposition class.

To sum up the discussion so far, words such as *fog/fawq* 'above', *wara/khalf* 'behind', *gabl/qabl* 'before' are similar to the true prepositions *fī* 'in, *bi-* 'at/in', *'a-/'alā* 'on' syntactically and semantically, yet not identical due to their nominal origin. They are followed by nouns which are in the (unmarked) genitive case and denote spatial and temporal meanings mostly. Accordingly, I take elements such as *fog/fawq* 'above', *wara/khalf* 'behind', *gabl/qabl* 'before' to be prepositions that have been grammaticalised from nouns. To reflect their nominal behaviour in some cases, I refer to them as semi-prepositions, following Ryding's (2005: 367) terminology.[37]

[36] Case endings in MSA are usually pronounced by newscasters and speakers of classical Arabic (al fuṣḥa Arabic). Therefore, in most of the examples given I am not keen on showing the NOM, ACC and GEN cases.

[37] Other suggested terms are 'quasi-prepositions' (Kouloughli 1994), 'prepositionals' (Badawi, Carter & Gully 2004) and 'secondary prepositions' (Abu-Chacra 2007).

Below I examine the semantics and syntax of the adpositions used in the place domain. In this, I will be led by the same assumptions I proposed in section 2.2.2, in particular the idea that adpositions used in the place domain are Place Relators. The main goals are to see if Arabic has a morphological representation for the functional heads involved in the phrasal structure of Place Relators and to show the distribution of the true and semi-prepositions in the place P projection.

2.5.2 *Place Relators in Arabic*

Among the prepositions that are used in static locative relations (as used in IA) are *fī* 'in', *bi-* 'at/in', *ʻa-/ʻalā* 'on', *yam* 'near/beside', *ben* 'between/among', *gubāl/'amām* 'in front of', *muqābīl* 'opposite', *wara* 'behind', *fog* 'above', *jawa* 'below', *gabl* 'before', *baʻd* 'after', *yamīn* 'right', *yasār* 'left', *wasaṭ* 'middle', *dākhl/juwa* 'inside', *bara* 'outside', *'aʻlā* 'up', *'asfal* 'down'. These Ps do not seem to have a complex morphological structure. They are all mono-morphemic words, most of which are free independent morphemes while a few are bound morphemes prefixed to their DP complements such as *bi-* 'at/in' and *ʻa-* 'on'. The question that arises here is how the true and semi-prepositions lexicalise the functional heads included in a place P projection.

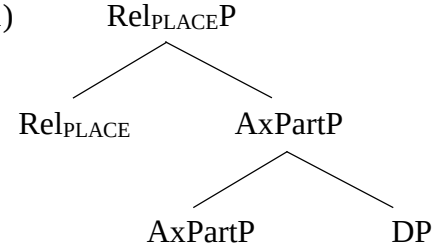
Starting from the bottom of the structure, i.e. the K terminal node, following Svenonius (2010) I assumed that K is lexicalised by elements that represent case. Meanwhile, following Fábregas (2007) and Romeu (2014) I assumed that AxPart and the DP Ground form a possessive or part-whole relationship. In English and Kurdish this relationship is indicated by an element that lexicalises K: *of* in English and the Ezafe marker *-ī* in Kurdish. In Arabic, K is null and will always be null as Arabic does not spell it out. In Arabic, possessive or genitive relationships are expressed either under the construct state or the so-called "analytic" genitive (Brustad 2000: 70). Under the construct state, two nouns, which are successive, are linked to specify the possessive or genitive relationship. As to the analytic genitive, this is done through the use of a genitive exponent or particle which expresses the possessive relationship, such as *li* 'for'

and *min* 'from'.[38] Examples (40a-b) are cited in Brustad (2000: 70), the transcriptions and glosses are mine.

(40) a. khāriṭat ṭurq
map.SG road
'a road map'
b. khāriṭa li-l-ṭurq
map.SG for-DEF-road
'a road map'

In (40a), the first noun *khāriṭat* 'map' is possessed by the second noun *ṭurq* 'road'. This possessive relationship is expressed by the construct state (iḍāfah) that holds between them. In (40b), the possessive relationship is expressed by the genitive exponent *li-* 'for'. Within spatial relationships that involve an AxPart and a DP Ground, it is the construct state that is used. For example, in (39a) the PP *khalf shshāsha* 'behind the screen' consists of two nouns *khalf* and *ashshāsha* where the second noun possesses the first. In such case, the genitive case on the second noun is assigned under the construct state configuration that holds between AxParts and DP complements. In contrast, when a Rel_{PLACE} element is present and AxParts is null phonologically, it is the Rel_{PLACE} which assigns genitive case to the DP complement. This entails the non-necessity of having a K projection in Arabic place-denoting Ps. However, under the cartographic approach, the K projection exists in Arabic on a par with English and Kurdish but not lexicalised. Thus, in the place P projection assumed for Arabic Place Relators, and to keep the structure simple, I do not include a K projection. Accordingly, the minimal structure I propose for Arabic PPs used in a place domain is as in (41):

(41)



[38] The choice between construct state and analytic exponent is determined "on the basis of formal, semantic and pragmatic considerations" (Brustad 2000: 74). For details, the reader is referred to Brustad (2000: 70-88).

Next I examine the lexicalisation of the heads Rel_{PLACE} and AxPart among the Arabic Ps used in a place domain. At first glance, the place expressions among the true prepositions could be said to lexicalise Rel_{PLACE}, while those in the semi-prepositions class may lexicalise the AxPart head due to their nominal properties presented above. However, for elements to be assigned to the Rel_{PLACE} or AxPart node, certain characteristics should be met. For example, elements of Rel_{PLACE} should function as Relators, while elements of AxPart should refer to a Space that is defined with reference to a Ground. Below I will discuss the properties of the Arabic relevant Ps in more detail, in terms of (1) their main meanings and (2) co-occurrence with each other.

To start with, the true prepositions *fī* 'in', *bi-* 'at/in' and *ʿalā* 'on' relate a Figure to a specific Space with reference to a Ground. It is the inner Space in case of *fī* 'in' and *bi-* 'at/in', and the surface Space in case of *ʿalā* 'on'.[39] Illustrative examples are:

(42) a. kānū bi-l-malʿab IA
be.PST.3PL in-DEF-stadium
'They were in the stadium.'

b. khalī-h ʿa-l-mez IA
put.IMP.2SG-3SG on-DEF-table
'Put it on the table.'

In addition to these simple uses, *fī* 'in' and *bi-* 'at/in' can also precede a number of semi-prepositions, such as *ʾasfal* 'down', *wasaṭ* 'middle' and *dākhl* 'inside'. For example:

(43) a. fī wasaṭ al-ghurfah MSA
in middle DEF-room
'in the middle of the room'

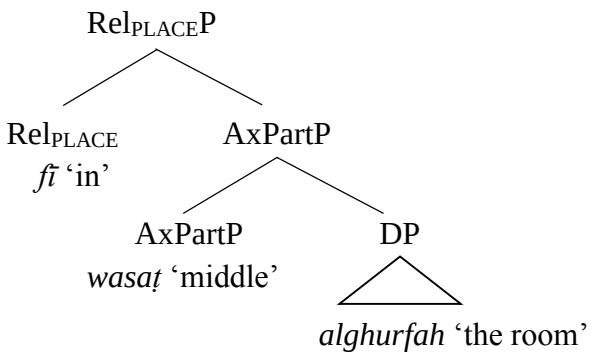
b. ʾb-ʾasfal aṣ-ṣafḥah IA
at-down DEF-page
'at the bottom of the page'

[39] These Ps show some allomorphy. The preposition *ʿalā* 'on' has the basic form *ʿa-* or *ʿalā* in IA and *ʿalā* in MSA when followed by complements of different types. However, when followed by pronominal clitics, it has different forms: *ʿale-* in IA and *ʿalei-* in MSA. As to the inseparable preposition *bi-* 'at/in', it is pronounced as *ʾb-* in IA when followed by an indefinite noun or AxPart as in (43b-c).

c. ’b-dākhl as-sayārah IA
in-inside DEF-car
‘inside the car’

Therefore, based on their semantic properties and the word order they have when appearing with the semi-prepositions, these true prepositions seem to lexicalise the syntactic head of Rel_{PLACE}. Thus, a PP construction such as *fī wasaṭ alghurfah* ‘in the middle of the room’ would have the following tree structure:

(44)



As can be seen, I have inserted *wasaṭ* ‘middle’, which is a semi-preposition, under the AxPart node. This is because it has the semantic property of identifying a specific relative frame of reference, the middle Space or part of a Ground. Next, I will examine in detail the syntactic and semantic properties of the semi-prepositions. I will show that semi-prepositions are not all the same because they lexicalise two different nodes in the P projection.

2.5.3 *Semi-prepositions: different lexicalisation*

The semi-prepositions seem to be of two types in terms of displaying nominal features, frames of reference and co-occurrence with true prepositions. For example (examining the MSA forms), *wasaṭ* ‘middle’, *’a‘lā* ‘up’, *’asfal* ‘down’, *’amām* ‘front’, *khalf* ‘back’, *dākhl* ‘inside’, *khārj* ‘outside’, *yamīn* ‘right’, *yasār* ‘left’ and *jānb* ‘side’ seem to display properties that justify treating them as AxParts, whereas *fawq* ‘above’, *taḥt* ‘below’, *qurb* ‘near/beside’, *bein* ‘between/among’, *qabl* ‘before’ and *ba‘d* ‘after’ are not likely to be AxParts. For easy reference, I will refer to the former elements as Group A and the latter examples as Group B.

For elements to be categorised as AxParts, they should display specific syntactic and semantic patterns as outlined in Svenonius (2006) (see section 2.3.1). Syntactically, they should display specific nominal properties and be licit in the position below Rel_{PLACE} in a prepositional hierarchy. Semantically, they should define a relative frame of reference – a specific Space or part of a Ground. Examples of Group A meet these two conditions. They can be used as nouns and AxParts. As nouns, as in (45a), they can function as a DP Ground, while as AxParts, as in (45b), they define a specific Space projecting from a DP Ground, e.g. *'asfal* 'down' denotes the bottom Space, *'a'lā* 'up' the top, *khalf* 'back' the back and so on.

(45) a. waḍa'tu al-kitāb-a fī al-'asfal MSA
put.PST.1SG DEF-book-ACC at DEF-bottom
'I put the book at the bottom.'

b. waḍa'tu al-kitāb-a fī 'asfal al-maktabah MSA
put.PST.1SG DEF-book-ACC at bottom DEF-book cupboard
'I put the book at the bottom of the book cupboard.'

In addition, Group A can co-occur with the true prepositions *fī* 'in', *bi-* 'at/in' and *'alā* 'on', as shown in examples (43a-c) and (45b). In fact, a search in the arabiCorpus reveals further examples made up of *'alā* 'on', *fī* 'in' and a semi-preposition (some are given in (46), the relevant elements are in bold). These combinations are not common in IA, though.

(46) a. yadu-hā an-naḥīlah taqbiḍ **'alā** **'asfal** al-wajh
hand-POSS.F3SG DEF-thin hold.PRS.F3SG on down DEF-face
'Her thin hand was holding the bottom of her face.' (arabiCorpus, Hayat96)

b. tamtad 'aswāru-hā **'alā** **'a'lā** qimam
strecth.PRS.3SG fences-POSS.3SG on top peaks
al-jibāl
DEF-mountains
'Its fences stretch out on top of the mountains.' (arabiCorpus, Hayat96)

c. **fī** **khārj** al-manṭiqah aw **fī** **dākhl**-hā
in outside DEF-area or in inside-POSS.3SG
'outside or inside the area' (arabiCorpus, sayd)

d**. fī** **’amām** ma‘bad al-malikah
in front temple DEF-queen
‘in front of the queen’s temple’ (arabiCorpus, Hayat97)

The semi-prepositions in Group B (using MSA traditional forms) are *fawq* ‘above’, *taḥt* ‘below’, *qurb* ‘near/beside’, *bein* ‘between/among’, *qabl* ‘before’ and *ba‘d* ‘after’. They share a single feature with nouns, which is case inflection. As mentioned earlier, the semi-prepositions can receive inflectional cases such as accusative and genitive according to their syntactic positions in the sentence (recall the MSA example in (38b) above). These case markers, however, are only apparent in classical and to some extent in standard Arabic, not the colloquial varieties such as IA. Thus, these semi-prepositions seem to be dropping their nominal properties and shifting class historically. Moreover, none of them suggest a Space or subpart of a Ground or co-occur with any of the true place prepositions either in IA or MSA, hence **fī fawq* ‘in above’, **fī taḥt* ‘in below/under’, **‘alā fawq* ‘on above’. As a result, Ps within Group B cannot be said to lexicalise the AxPart head.

Instead, I assume that these semi-prepositions are more like the true prepositions *fī* ‘in’, *bi-* ‘at/in’ and *‘alā* ‘on’, syntactically and semantically. They relate Figures to specific Spaces with reference to a Ground, such as a relative vertical position in case of *fawq* ‘above’ and *taḥt* ‘below’, closeness such as *qurb* ‘near’, *‘nd* ‘at’, etc. Table 2.4 shows the categorisation of the members of the true and semi-prepositions that lexicalise the Rel_{PLACE} and AxPart heads. The forms given are those of MSA since the nominal features of the AxParts are more apparent there.

Rel$_{PLACE}$	**AxPart**
fī 'in'	*'amām* 'in front of'
bi- 'at/in'	*khalf* 'behind'
'alā 'on'	*wasaṭ* 'middle'
fawq 'above'	*dākhl* 'inside'
taḥt 'below'	*khārj* 'outside'
qurb 'near/beside'	*'a'lā* 'up'
bein 'between/among'	*'asfal* 'down'
qabl 'before'	*yamīn* 'right'
ba'd 'after'	*yasār* 'left'
'nd 'at'	

Table 2.4 Distribution of place-denoting Ps in MSA

Under the column Rel$_{PLACE}$, the first three elements, i.e. *fī* 'in', *bi-* 'at/in' and *'alā* 'on' are true prepositions, while the rest are semi-prepositions. Under the column of AxPart, all the elements belong to the semi-preposition class. In the next section, I show the differences between the elements that lexicalise the Rel$_{PLACE}$ element in terms of (1) co-occurrence with an overt AxPart, (2) allowing null DP complements and (3) degree modification.

2.5.4 *Rel$_{PLACE}$: true vs semi-prepositions*

The semi-prepositions in the Rel$_{PLACE}$ column differ from the true prepositions listed there in several respects. First, unlike true prepositions, they do not allow lexicalised AxParts, hence the ungrammaticality of **fawq 'amām* 'above front', **qurb khalf* 'near behind' and **qabl yasār* 'before left'. This is probably due to the fact that both elements belong to the semi-preposition class. An implication of this is that since both e.g. *fawq 'amām* 'above front' have nominal features and belong to the same class, the sequence [N + AxPart + DP] renders ungrammaticality.

Second, none of the true place prepositions can occur without a phonologically realised DP complement. The complement can be a full NP (47a-b) or a pronominal clitic (47c), yet not a null element.

(47) a. kitāb-uk ‘alā *(ar-raf) MSA
book-POSS.2SG on DEF-shelf
‘Your book is on the shelf.’

b. kitāb-ak bi-*(al-jarār) IA
book-POSS.2SG in-DEF-drawer
‘Your book is in the drawer.’

c. wigafna ‘ale-hum IA
stand.PST.1PL on-PC.3PL
‘We stood on them.’

In contrast, some Rel_{PLACE} semi-prepositions, such as *fawq* ‘above’ and *taḥt* ‘below’ can occur without a DP complement. In such case, they are mostly treated as locative adverbs (see e.g. Badawi, Carter & Gully 2004; Ryding 2005, 2014). Illustrative examples are:

(48) a. kitāb-ak fog IA
book-POSS.2SG above
‘Your book is above.’

b. sarū sharqan MSA
walk.PST.3PL east
‘They walked to the east.’

A third difference can be identified in terms of degree modification. The true and semi-prepositions listed in table 2.4 under Rel_{PLACE} can both be preceded by modification expressions. However, the syntactic position of the degree modification seems to differ in the two cases. Consider the examples below.

(49) a. sa-yazīd ʾirtifāʿ al-mabnā thamāniyatah
will-increase height DEF-building eight
ʾamtār ʿalā ʾaʿlā mabnā fī al-ʿālam
metres on higher building in DEF-world
'The building will be eight metres higher than the highest building in the world.' (arabiCorpus, Hayat97)

b. as-sad sa-yubnā […] ʿalā ʿumq sabʿat ʾamtār fī al-baḥr
DEF-dam will-build on depth seven metres in DEF-sea
'The dam will be built at a depth of seven metres in the sea.' (arabiCorpus, Hayat96)

In (49a), *thamāniyatah ʾamtār* 'eight metres' specifies the height difference between the new building and the currently highest building. In (49b), *sabʿat ʾamtār* 'seven metres' specifies the depth of the dam that will be built in the sea. Although these examples may superficially look like having modified Ps, they are actually not. The modifiers in (49a-b) are in construction with the preceding constituents, and the PPs just identify a location. Contrary to these, consider:

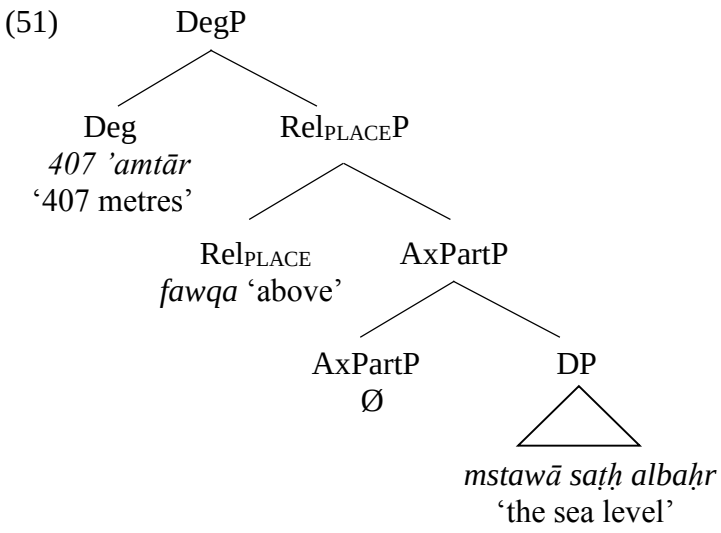
(50) a. yablugh ʾaqṣā ʾirtifāʿ fī al-jazīrah 407
amount.PRS.3SG maximum height in DEF-island 407
ʾamtār fawq-a mstawā saṭḥ al-baḥr
metres above-ACC level surface DEF-sea
'The maximum height in the island is 407 metres above the sea level.' (arabiCorpus, Hayat96)

b. tamtad li-ʾamtār taḥt-a al-ʾarḍ
stretch.PRS.3SG for-metres under-ACC DEF-earth
'It stretches for metres under the earth.' (arabiCorpus, Masri2010)

In (50a-b), the preceding measure phrases seem to define the length of the upward and downward vectors suggested by *fawq* and *taḥt*, respectively. It can, therefore, be said that the projection Deg, following Svenonius (2010), can be present phonologically (or morphologically) in an Arabic PP made up of $\text{Rel}_{\text{PLACE}}$ and DP Ground, provided the $\text{Rel}_{\text{PLACE}}$ is lexicalised by a semi-preposition. (But there are exceptions, such as *yam/qurb* 'near' and *ʿd/ʿnd* 'at'; these do not allow modification because they denote

adjacent distance that cannot be measured). The position of the Deg is above Rel_{PLACE} in a PP structure. This can be illustrated in the following structure for the PP in (50a):

(51)



The differences between the Place Relator true prepositions *fī* 'in', *bi-* 'at/in' and *'alā* 'on', on the one hand, and the Place Relator semi-prepositions, on the other hand, are summarised in table 2.5.

Property	**True Prepositions**	**Semi-prepositions**
Co-occurrence with lexicalised AxParts	+	−
Null DP Complement	−	− (+ in case of *fawq* 'above' and *taḥt* 'below')
Degree modification	−	+ (− in case of *yam/qurb* 'near' and *'d/'nd* 'at')

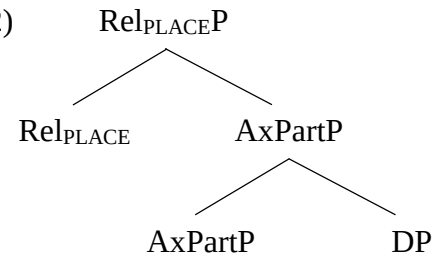
Table 2.5 Rel_{PLACE}: true vs semi-prepositions

2.5.5 *Interim summary*

In this section, I have examined the internal syntax and semantics of PPs headed by Place Relators as used in Arabic. The discussion showed that Arabic has a morphological representation for the functional projections Rel_{PLACE} and AxPart. True prepositions always lexicalise the Rel_{PLACE} functional head, while elements within semi-prepositions are distributed between the Rel_{PLACE} and AxPart terminal nodes. For example, elements such as *fawq* 'above', *taḥt* 'below' and *qurb* 'near/beside'

(represented as Group B) can lexicalise Rel_{PLACE}, while semi-prepositions such as *wasaṭ* 'middle', *'a'lā* 'up', *'asfal* 'down' and *'amām* 'front' (represented as Group A) are lexical representations of AxPart. As to the K functional head, it lacks a lexical representation in Arabic, and I have therefore not included it in the P projection for notational simplicity. Thus, the minimal structure of a place P projection for Arabic is as in (52), repeated from (41):

(52)



I also distinguished between the true prepositions and semi-prepositions that lexicalise the Rel_{PLACE} element in terms of co-occurrence with lexicalised AxParts, null DP complement and modification. True prepositions can co-occur with lexicalised AxParts, while semi-prepositions do not. True prepositions always require a DP complement, whereas semi-prepositions can appear without one in which case they can be viewed as adverbs. With regard to degree modification (Deg), it can appear when the Rel_{PLACE} is lexicalised by semi-prepositions only, not true prepositions. Finally, it is worth mentioning that except for some uncommon examples, the Rel_{PLACE}P structures in MSA and IA follow the same patterns.

2.6 Summary and Conclusion

In this chapter, I have examined elements such as English *in, on, at, near, inside, upon, next to, below, beside, behind, beyond, between, above, among, in front of* and *on top of*, and their equivalents across Kurdish and Arabic. Based on their semantic functions, I have proposed the term Place Relator to refer to them. Semantically, Place Relators relate a Figure to a Space, which is defined with reference to a Ground. I have also examined their morphological decomposition and the minimal functional projections available in a Place Relator projection. The model I adopted is a modification of Svenonius' (2010) model of P projection, featuring the way I viewed these elements.

In the model, the $Rel_{PLACE}P$ is decomposed into several functional projections, primarily Rel_{PLACE}, AxPart and K. Each of these has a semantic role on the basis of which a syntactic functional head is assigned. Moreover, based on the cartographic framework, the realisation of the syntactic heads has been based on the availability of lexical and/or morphological evidence across the languages under investigation.

Svenonius' (2010) revised model has been applied to place adpositions in Kurdish and Arabic. The investigation has led to the conclusion that the model of place P projection holds up well for data in both languages, although a few modification were suggested. In Kurdish, a syntactic analysis was proposed for the bound morphemes *-awa, -dā* and *-řā* which come at the end of the DP complement in some PPs. I proposed that they lexicalise a PLACE element, building on insights from e.g. Terzi (2010) and Romeu (2014). And in Arabic, for simplicity of notation, since K is not represented lexically, I did not include it in the place P projection assumed for Arabic.

In general, there is morphological evidence for almost all the functional heads identified and in the same order. There is some variation in terms of phonological presence of the terminal nodes and co-occurrence of combinations of elements. For example, in Arabic, semi-prepositions that lexicalise the Rel_{PLACE} element do not co-occur with elements that lexicalise AxPart because they belong to the same class.

In the next chapter, I examine Ps used in a path domain from a semantic, syntactic and morphological perspective. The analysis will again take account of data from English, Kurdish and Arabic.

Appendix A: Adpositions in Kurdish

Simple	Compound
la 'in/at'	*labo* 'for'
lagał 'with'	*lasar* 'on/above/on top of'
labar 'because of'	*lazher/labin/lakhwār*
lajyātī 'instead of'	'under/underneath/below'
	lanāw 'inside/among'
	ladarawa 'outside'
	lanewān 'between/among/in the middle of'
	lapāsh 'after'
	lapesh 'before'
	lapisht 'behind'
	ladwāī 'after'
	labardam/labarānbar 'in front of/opposite'
	labeinī 'between'
	latanisht 'beside/next to'
	lakin/lalā 'beside/with'
	lanizīk/lakin 'near'
	lasar tā sar 'all over/throughout'
	lawbarī 'across/on the other side of'
ba 'by/with'	*babe* 'without'
baraw 'towards'	*badawrī* 'around'
	badrezhāyī 'along'
	balāī 'along/by the side of'
	batanisht 'beside'
be 'without'	*bela* 'in addition to'
bo 'to/for'	
tā/tākū 'until/as far as'	
wak/wakū 'like'	

Appendix B: Adpositions in MSA

True prepositions		**Semi-prepositions**
Separable	**Inseparable**	
fī ‘in’	*bi-* ‘at/in/by’	*’amām* ‘in front of’
‘alā ‘on’	*li-* ‘to/for’	*khalf/wara’* ‘behind’
’ilā ‘to’	*ta-* ‘by’ (for oath)	*fawq* ‘above’
min ‘from/of’	*wa-* ‘by’ (for oath)	*taḥt* ‘below’
‘an ‘away from’	*ka-* ‘like’	*qabl* ‘before’
ḥatā ‘until/up to’		*ba‘d* ‘after’
‘nd ‘at/with’		*bein* ‘between/among’
ma‘a ‘with’		*ḥawla* ‘around/about’
mundhu/mudh ‘since/so far’		*ladā/ladun* ‘with’
		wasaṭ ‘middle’
ḥāshā ‘except’		*dākhl* ‘inside’
‘adā ‘except’		*khārj* ‘outside’
khalā ‘except’		*’a‘lā* ‘up’
		’asfal ‘down’
		qurb ‘near/beside’
		yamīn ‘right’
		yasār ‘left’
		‘abra ‘across’
		khilāl ‘through’
		muqābil ‘opposite’
		dūn/bidūn ‘without’

Appendix C: Adpositions in IA[40]

True prepositions		**Semi-prepositions**
Separable	**Inseparable**	
fī 'in'	*bi-* 'at/in/by/with'	*gubāl/'amām* 'in front of'
'alā 'on'	*li-/'il-* 'to/for'	*wara* 'behind'
min/m- 'from'	*'a-* 'on'	*fog* 'above'
'an 'from/about'	*ta-* 'by' (for oath)	*jawa* 'below'
'ilḥad 'until/up to'	*wa-* 'by' (for oath)	*gabl* 'before'
'd 'at/with'		*ba'd* 'after'
ma'a/waya 'with'		*ben* 'between/among'
mā'adā 'except'		*ḥawl* 'about/around'
		wasaṭ 'middle'
		dākhl/juwa 'inside'
		bara 'outside'
		'asfal 'down'
		'a'lā 'up'
		yam 'near/beside'
		yamīn 'right'
		yasār 'left'
		'abr 'across'
		khilāl 'through'
		muqābīl 'opposite'
		bidūn 'without'

[40] Some prepositions are missing in IA list because of the productive use of one preposition in Iraqi Arabic in a number of contexts, for instance *min* 'from' can express the meaning denoted by the preposition *mundhu* 'since' which exists in MSA but not IA.

Chapter 3. Adpositions in the Path Domain

3.1 Introduction

This chapter deals with the syntactic and semantic properties of adpositions such as English *to/from/through* and their equivalents in Kurdish and Arabic. It mainly aims at defining the semantic function or role of these elements in a spatial relationship which involves a path. For this purpose, first some previous accounts will be reviewed in an attempt to define the path notion and its components. Based on the discussion I propose that these elements function as Relators too (on a par with *in/on/above*, discussed in chapter 2) but in a path domain. More precisely, I propose that *to/from/through* relate a Figure to a specific point of a path. This point (be it a starting point, an end point or points in between) is represented by the DP Ground. Syntactically, I represent *to/from/through* as Rel_{PATH} which in return dominates the Rel_{PLACE} in a complex spatial relationship.

The chapter includes also a typology of these elements. For this, I adapt Pantcheva's (2011) typology of path adpositions. She identifies 8 types of path adpositions determined on the basis of three properties: ±TRANSITION, ±ORIENTATION and ±DELIMITATION. These types are distributed among the three canonical types of path adpositions: Goal, Source and Route. Based on the view that such elements are Relators in a path domain, I will refer to these three main types as: GoalRel, SourceRel and RouteRel, respectively. Furthermore, these proposals will be examined and tested on data from Kurdish and Arabic. In particular, I examine the types of Path Relators available in Kurdish and Arabic. Finally, I examine the co-occurrence of elements that lexicalise Rel_{PATH} and Rel_{PLACE}. The discussion of Kurdish and Arabic data reveals the specific behaviour and restrictions of such combinations.

The structure of the chapter is as follows. In section 3.2, I present a descriptive analysis and discussion of the notion of path and what counts as its components. Section 3.3 includes an overview of some studies in the semantics of adpositions such as *to/from/through* (e.g. Nam 1995, 1996; Fong 1997, 2001; Zwarts 2005; Romeu 2014). The discussion of the proposals in these studies provides the basis for my proposal that elements such as English *to/from/through* are Relators in a path domain, which is presented in section 3.4. Advantages and empirical evidence in support of the proposal

will also be presented. Section 3.5 reviews Pantcheva's (2011) typology of path adpositions. The three canonical types of Rel_{PATH} adpositions examined are GoalRel, SourceRel and RouteRel. The syntactic structure of Rel_{PATH} is given in section 3.6. In section 3.7 a detailed investigation of equivalent elements in Kurdish is carried out. A similar investigation is given for parallel elements in Arabic (both MSA and IA) in section 3.8. Combinations of lexicalised Rel_{PATH} and Rel_{PLACE} are examined and discussed in section 3.9. Finally, section 3.10 summarises and concludes the chapter.

3.2 Path vs Directional

In the literature on adpositional elements that denote non-locative spatial meanings, such as English *to, up to, towards, from, out of, through* and *across*, several labels have been used. The two main terms commonly employed are *path* (e.g. Jackendoff 1983; Gehrke 2008; Svenonius 2010; Pantcheva 2010, 2011) and *directional* (e.g. Zwarts & Winter 1997; van Riemsdijk & Huybregts 2002; Helmantel 2002; Koopman 2010; den Dikken 2010; Noonan 2010). The relevant elements are taken to lexicalise the head of a Path projection, represented as PathP (Svenonius 2010; Koopman 2010; Pantcheva 2010, 2011), DirP (Helmantel 2002) or PP_{Dir} (Kracht 2008; den Dikken 2010).

These elements are usually used in dynamic constructions that include a motion verb and a DP Ground which defines a specific point in a path. This can be the end point of a path, (1a), the starting point, (1b), or intermediate point(s), (1c). For explanatory purposes, the PPs are in bold.

(1) a. This is the time we went **to the beach** in Italy. (BNC, S_conv)
b. I'm not being facile, but we came **from the sea.** (BNC, W_biography)
c. Benny ran **through the tunnels.** (BNC, W_fict_prose)

In evaluating the appropriateness of the different terms, it needs to be pointed out that the labels path and/or directional do not seem to reflect the exact semantic function of elements such as *to/from/through*. Besides, labelling them as path and directional makes two different assumptions about the nature of these elements; a path is not a direction and a direction is not a path. Below I will try to define the notions of path and direction more precisely and identify their interrelation. The main questions I deal with are: are path and directional interchangeable? If not, is one of them a component of the other?

And most importantly, do English *to, up to, from, out of, through, across*, etc. denote a path or a direction or both? Based on the descriptions and analyses, I reach the conclusion that to*/from/through* should not be referred to as path or directional adpositions because they do not denote a path, and not all of them denote a direction either. Hence, labelling them as path or directional adpositions gives a wrong depiction of the lexical semantics of these elements.

To start with, as an answer to the question 'what is path?', several definitions are proposed in the literature.[41] For example, path has been defined as a sequence of places (Herweg & Wunderlich 1991), a "sequence of regions" (Nam 1995: 77), or a "collection of points in space" (Krifka 1998: 197). A common point shared by these definitions is that path basically consists of a set of points. Most importantly, these points are ordered in a linearly homogenous way (Verkuyl & Zwarts 1992: 498). This can be represented schematically as in figure 3.1.

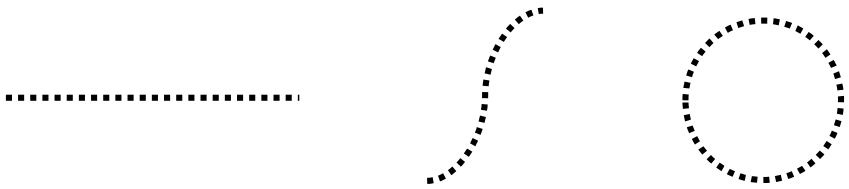


Figure 3.1 The schematic representations of different shapes of path

There are some further components or features of path that are highlighted in the literature. Zwarts (2005: 743) defines path as a "directed stretch of space, typically the trajectory or orbit along which an object moves". Moreover, he adds that a path has "a starting point, an end point and points in between" (Zwarts 2005: 744). Similarly, Piñón (1993: 287) refers to path as a "quantity of space that extends between a starting point and an endpoint" and that it is traversed by an entity. Such definitions entail that a path comprises a direction, a starting point, an end point and a moving object. Another -no less important- component is the middle point(s). Thus, a revised schematic representation of the leftmost path shown in figure 3.1 would look like the one in figure 3.2. A represents the starting point, B represents the middle points, C the end point, X is the object that undergoes movement and the arrow signals the direction followed by the object in the specified path (in this case moving from left to right).

[41] It should be noted that we are dealing with the abstract concept of path.

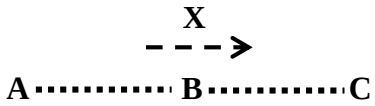


Figure 3.2 The schematic representation of (one shape of) path and its components

Based on these observations, one conclusion is that direction is a component of path and not the reverse. This, however, does not imply that every path necessarily involves a direction, or even a specified starting point or an end point, as was shown in (1). It rather depends on the lexical semantics of the adposition in use, with e.g. *to* suggesting a direction and an end point; *from* suggesting a starting point, but not necessarily a direction and so on. Another conclusion is that these adpositions do not denote a path (a set of points). They rather serve a specific function in a path domain. This will be made clearer in the subsequent sections.

In connection with the term *directional*, it seems it has been used as a cover term to refer to these adpositions which are non-locative. For Helmantel (2002: 8), directional adpositions "denote a movement of the located object [=Figure]... from location x to location y". Directionality, however, is restricted to a small set of adpositions which are inherently associated with it, such as English *to, towards, up to,* and their equivalents cross-linguistically. In contrast, adpositions such as *from, off, out of, through, past, across, along* and *around* do not denote a direction. In fact, the word 'direction' entails movement 'in the direction of', not 'in the direction from' or 'in the direction through'. In Dutch the word *richting* 'direction' is developing into an adposition which has the meaning of 'in the direction of' (see Helmantel 2002). An illustrative example is:

(2) Jan fietst richting het station (Helmantel 2002: 15)
Jan cycles direction the station
'Jan cycles in the direction of the station.'

What this example suggests is that direction is always taken to be a forward process not backward. It can be up to down, down to up, left to right, right to left, yet not left from right, bottom from top, etc. Therefore, using the label *directional* to refer to source and route adpositions wrongly attributes a directionality feature to them, especially route elements.

Having shown the difference between path and directional and that neither of them reflects accurately the value of these adpositions, in the next section I review some earlier and current studies that try to account for the semantics of such adpositions.

3.3 Previous and Recent Studies

3.3.1 *Nam (1995, 1996)*

In Nam (1996) elements such as *to, from, into, out of, towards* are referred to as *directional locatives*, while elements such as *through, across, around, past* as *symmetric locatives*. Nam's (1995, 1996) semantic analysis of these elements is based on a specific logic of space. His semantics involves a mereology of space which is structured by the primitive part-to-whole relation.[42] For Nam (1995: 77) paths are "sequences of regions, which are time-free". Moreover, paths intuitively involve a movement of an object which traverses the path. This movement is represented through the predicate TRAV (for traverse), which is used to "interpret sentences referring to a path and a movement" (Nam 1995: 81). For instance, in his interpretation of *John ran into the house*, Nam takes it to be true "iff 'John ran' and 'John traversed the path π … such that the source of the path is outside the house and the goal is inside the house'" (Nam 1995: 81).

Nam (1996) takes directional locatives such as *to/into/from/out of* to denote different paths. For example, *into* X refers to a path whose source is a region outside X and whose goal is a region inside X. As to the symmetric locatives (e.g. *through/across/past*), Nam (1995, 1996) claims that they involve a *betweenness* relation in that they inherently involve three regions. Moreover, they determine a "set of paths which is closed under [the] "path-converse" relation" (Nam 1996: 12). For example, the PP *across the street* "determines a path π such that BETWEEN (®(the street), π_s, π_g), and since BETWEEN is symmetric on second and third arguments, BETWEEN (®(the street), π_g, π_s)" (Nam 1996: 12; see also Nam 1995: 71). In Nam (1995, 1996) the function ® is introduced to assign "a unique region to each individual object at an interval" (Nam 1996: 7). π_g represents the source of π and π_s represents the goal of π. According to this formula, the street is between the source (start) and goal (end) of the path.

[42] For the formal and mathematical representations, the reader is referred to Nam's (1995) work.

3.3.2 *Fong (1997, 2001)*

In her analysis of elements such as English *into* and *out of* and their equivalents in Finnish,[43] which she refers to as directional locatives (DLs), Fong (1997) argues that these elements do not refer to paths. Instead she takes them to have a more abstract semantics than is assumed in the literature. For Fong these elements (DLs) denote ordered structures. Fong's claims are based on examples where directional locatives are used with no motion verbs or any movement being involved. These are illustrated in (3), cited from Fong (1997: 27, 28) (INE = Inessive):

(3) a. Tuovi löys-i kirja-n laatiko-sta/ *laatiko-ssa
Tuovi find-PAST-3P book-GEN box-ELA(tive) box-INE
'Tuovi found a/the book in (lit. 'out of'/*'in') a/the box.'

b. silta San Francisco-on
bridge San Francisco-ILL
'a/the bridge into San Francisco'

c. silta San Francisco-sta
bridge San Francisco-ELA
'a/the bridge out of San Francisco'

In (3a), the occurrence of 'find' with ELA 'out of' is permissible in Finnish, although not in English. In (3b & c), both in Finnish and English the adpositional phrase functions as a modifier of a noun. According to Fong, the Figures *the book* or *the bridge* do not undergo a change of location or traverse a path.

To account for the semantics of directional locatives, Fong (1997, 2001) interprets them within the diphasic structure introduced in Löbner (1989). Diphasic involves a transition between two phases: the phase of p and the phase of not-p (~p). This phase transition is monotone, so when p or ~p is attained there is no change back to the opposite phase. The monotonic phase change is represented as the ADMISSIBLE PHASE-INTERVAL (Fong 1997: 29). This is defined in (4):

[43] In Finnish, *into* is realised as Illative case and *out of* as Elative.

(4) Any admissible interval starts with a phase of not-p and is monotone in terms of p; starting with points s for which p(s)=0, it may extend to later points s' with p(s')=1, but must not contain yet later points s" with p(s")=0 again.

(Fong 2001: 5)

Accordingly, the admissible intervals of *into* and *out of* and their parallel Finnish cases are as in (5) and (6), respectively. These are cited from Fong (1997: 30).

(5) 'Into'/Illative predicates take as their admissible interval the monotone development from ~p to p (or p to ~p), where the truth of LOC-IN (a,b) is evaluated in the second phase.

(6) 'Out of'/Elative predicates take as their admissible interval the monotone development from ~p to p (or p to ~p), where the truth of LOC-IN (a,b) is evaluated in the first phase.

Note that Fong (1997: 34) defines phases in terms of locations. Accordingly, in (3b), the truth of *into/*ILL is evaluated in the second phase which is San Francisco. In (3c), the truth of *out of/*ELA is evaluated in the first phase which is a place outside San Francisco. Interpreting directional locatives in terms of diphasic structure helps account for the difference between Finnish and English directional locatives. For instance, in Finnish (not English) directional locatives can be used with non-motion verbs such as *löys* 'find' and *unoht* 'forget' which have anterior/posterior entailment properties. Most importantly, it accounts for the contexts where no motion verbs are used.

3.3.3 *Zwarts (2005)*

Zwarts (2005) assumes that elements such as *to, towards, from, across, over, through, around,* etc. are directional prepositions which map reference objects (the DP Ground) to sets of paths. The sets of paths in turn are represented by the directional PPs. Zwarts' (2005) applies an algebraic approach to account for the semantics of these elements. For example, he defines source and goal PPs as in (7) and route PPs as in (8), cited from Zwarts (2005: 761-763):

(7) { **P:** there is an interval $I \subset [0,1]$ including . . .
. . . 0 and consisting of all the $i \in [0,1]$ for which **p**(i) is at x } = [[from x]]
. . . 0 and consisting of all the $i \in [0,1]$ for which **p**(i) is on x } = [[off x]]
. . . 0 and consisting of all the $i \in [0,1]$ for which **p**(i) is in x } = [[out of x]]
. . . 1 and consisting of all the $i \in [0,1]$ for which **p**(i) is at x } = [[to x]]
. . . 1 and consisting of all the $i \in [0,1]$ for which **p**(i) is on x } = [[onto x]]
. . . 1 and consisting of all the $i \in [0,1]$ for which **p**(i) is in x } = [[into x]]

(8) { **p**: there is an interval $I \subset [0,1]$ that includes neither 0 nor 1 and that consists of all the $i \in [0,1]$ for which **p**(i) is . . .
. . . on/above x } = [[over x]]
. . . in x } = [[through x]]
. . . on x } = [[across x]]
. . . at x } = [[via x]]
. . . near x } = [[past x]]

Here **P** denotes the set of paths, 0 is the starting point of a path, 1 is the end point and *i* is any point between 0 and 1. So the source PPs include the starting point 0, the goal PPs include the end point 1 and the route PPs include those points in between.

Applying the algebraic model, according to Zwarts (2005), provides a more principled and compositional way of the account of directional prepositions in event structure and also accounts for the parallelism between the prepositional domain and the verbal and nominal domains. For example, in his analysis of the tenseless sentence *Alex walk to the capitol* he provides the following algebraic definitions, cited from Zwarts (2005: 758):

(9) a. a. Alex walk to the capitol
b. { e: WALK(*e*) and THEME(*e*) = [A]lex and TRACE(*e*)(1) is at the capitol }
c. { **p: p**(1) is at the capitol }

In the interpretation of this sentence, the walking event (*e*) (which belongs to the verbal domain) is related to the path **P** (which belongs to the prepositional domain *to the capitol*) through the thematic role TRACE. For Zwarts, the preposition *to* only identifies the end point of the path **P**.

Moreover, Zwarts takes prepositions to be parallel to verbs and nouns in that like the latter categories, prepositions can be telic (bounded) or atelic (unbounded). This distinction is referred to as prepositional aspect (Zwarts 2005: 742). Examples of Ps expressing these two prepositional aspects and those which show both aspects are given in (10):

(10) Bounded, telic: *to, into, onto, from, out of, off, away from, past, via*
Unbounded, atelic: *towards, along*
(Un)bounded, (a)telic: *across, around, down, over, through, up*
(Zwarts 2005: 742)

In Zwarts (2005), boundedness/(a)telicity in the prepositional domain is identified on the basis of cumulativity. Cumulativity in turn is based on the concatenation operation (the sum of paths). What makes a PP bounded is that it should not have cumulative reference. For example, a *to*-phrase does not have two paths that can be concatenated. In contrast, unbounded PPs have cumulative reference because they allow concatenation of the subpaths that may be involved, as is the case with a *toward*-phrase (see Zwarts 2005 for more details).

3.3.4 *Romeu (2013, 2014)*

In recent work on spatial adpositions in Spanish, Romeu (2013, 2014) argues that spatial adpositions are always locative.[44] Therefore, he does not postulate any projection such as path to represent elements such as *a* 'to', *hasta* 'up to', *hacia* 'towards' and *de* 'from'.[45] Instead, he claims that these elements lexicalise a modifier element in the P projection. For him, path and directionality can be entailed by other means, such as modifiers of place adpositions (my Rel_{PLACE}).[46]

[44] It is worth mentioning that Romeu's (2013, 2014) approach lies mainly within the Nanosyntax framework, which he follows to account for the syntax, semantics and the lexicon of such spatial elements. He also follows some ideas from the cartographic and minimalist approaches. For details the reader is referred to his thesis (2014).

[45] In the literature on spatial adpositions in Spanish, the status of *a* is debated. For example, Romeu (2014) takes it to be directional while for Fábregas (2007) it is locative. Another note with respect to *a* is that in Romeu (2014) while it is translated as 'to' in English, it seems it differs from English *to*. For example, *a* lexicalises the Disjoint modifier while *to* lexicalises the ScalarPoint modifier (for more details, the reader is referred to Romeu's (2014) thesis).

[46] Taking PPs as modifiers is also proposed in e.g. Cresswell (1978) and Beck (2005).

These modifiers are Conjoint, Disjoint, ScalarPoint and Dispersion. The main facts about them as mentioned in Romeu (2013, 2014) are as follow: (1) these modifiers alter the semantic properties of the elements they combine with or modify; (2) they are non-terminal in the PP structure; (3) they can be lexicalised by independent adpositions or together with the element they modify; (4) they are optional in the sense that in locative relationships no modifiers are required, but they have a central role in the semantic selection of the element they modify. Definitions of these modifiers are given in (11):

(11) **Conjoint** gives the interpretation that the element it combines with includes the points of another.

Disjoint determines that the element with which it combines is the second of an interval. To have Disjoint it is necessary that the first point of the interval can be identified. Therefore, Disjoint, in opposition to Conjoint, implies two separated points.

ScalarPoint gives the interpretation that the element it modifies belongs to a scale.

Dispersion takes a Region and divides it into multiple points.

(Romeu 2014: 306-307)

To make things more concrete, I explain these categories of modifiers with examples. First consider the cases with the modifier Conjoint *en* 'in' and the modifier Disjoint *a* 'to'. The examples in (12a-b) are from Romeu (2014: 72, the translations are his):

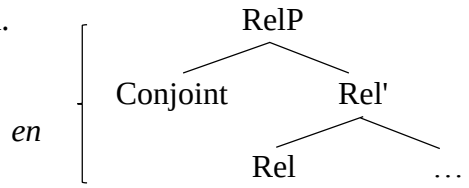
(12) a. La ciudad está en el norte de España
'The city is in the north of Spain.'

b. La ciudad está al norte de España
'The city is to the north of Spain.'

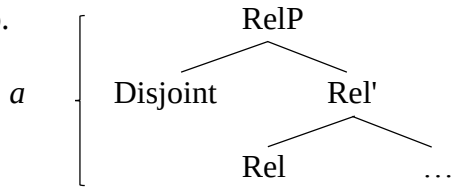
According to Romeu (2014), in (12a), *en* 'in' establishes the relation between the city and the north of Spain. The city is included in the north of Spain. According to Romeu's (2014) P projection *en* lexicalises both RelP and the modifier Conjoint. In (12b), there are two relations, one between the city and the north and another between the north and Spain. While the PP includes *a* 'to', no movement is entailed. The location of the city is identified with reference to another. The modifier *a*, which lexicalises both Disjoint and RelP, accounts for such a dislocation in a locative construction. These can be

represented structurally as in (13a-b), respectively, cited from Romeu (2014: 306). Romeu applies the Nanosyntax approach and phrasal spell-out in the lexicalisation of the elements in the PP structure. For example, one lexical item can lexicalise a chunk of projections.

(13) a.

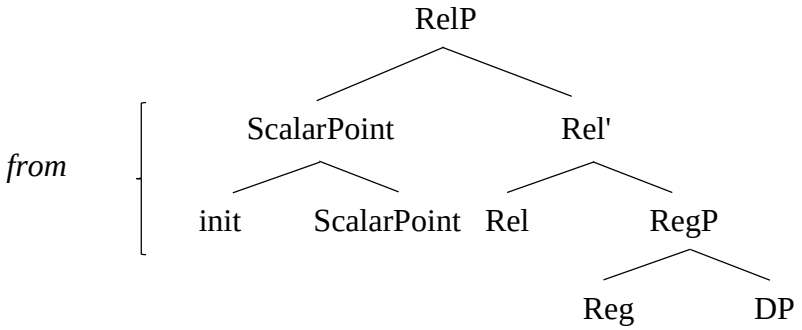


b.



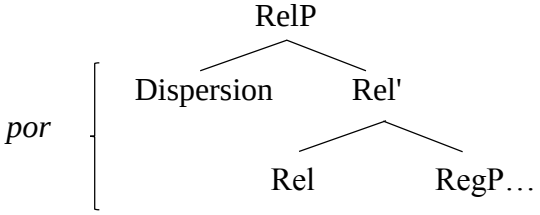
As for the ScalarPoint modifier, it gives a specific point which is interpreted as the initial, last or a middle point in a scale. An illustrative example is given in (14), cited from Romeu (2014: 307):

(14)



Finally, when a dispersion modifier combines with a locative adposition it takes the Region and "divides it into multiple points" (Romeu 2014: 307). The spatial relationship is then interpreted as being spread over multiple points. In Spanish *por* 'by' lexicalises this element. This is represented in (15). The structure is adapted from Romeu (2014: 310):

(15)



To sum up, in Romeu (2013, 2014), the structure of spatial constructions include modifiers such as Conjoint, Disjoint, ScalarPoint and Dispersion. These modifiers represent the directional elements that give information about the locative elements and can change the spatial relationship.

3.4 The role of *to/from/through,* etc.

In this section, I briefly discuss the main points I share or disagree with in the studies reviewed above. Later, I present my proposal that will be adopted in the thesis.

3.4.1 *Discussion*

First, I share with Nam (1995, 1996) the idea that path involves a set of regions which I take to be points ordered linearly and the idea that paths are non-temporal. Unlike Nam (1995, 1996), however, I do not take the adpositions in question to refer to a path. They are rather tools or elements used in a path domain. Therefore, the logical semantics assumed by Nam for these adpositions does not clearly show the semantic function of these elements.

Second, while I agree with Fong (1997, 2001) that directional locatives do not refer to paths or are restricted to motion events; I depart from him in terms of the abstract semantics assumed for them. To assume that elements such as *into* and *out of* and their Finnish equivalent cases denote an ordered structure, the focus is mainly on the phases in which the truth of the directional locative is evaluated. Nothing in the assumption reflects the exact role of such elements whether in a spatial or non-spatial relationship. Besides while *into* and *out of* involve a transition between two phases, elements such as *towards* and *away from* do not suggest such a transition in the way he views transition between phases, which raises questions about the wider validity of Fong's account.

Third, in Zwarts (2005), restricting directional prepositions to identify some extreme points or middle points of a path misses a real consideration of the role of these elements in a spatial relationship. Besides to claim that a directional PP denotes a set of paths ignores the fact that path can be denoted in non-prepositional domains such as *Tahir ran a mile* and *Tahir jumped in the pool* (under the directional reading).

Furthermore, having defined path as a set of points (see section 3.2), a directional PP cannot be taken to denote a set of paths. Finally, while the algebraic model may be useful within pure semantic studies, it does not fit well under a syntactic analysis. Therefore, I do not follow the assumptions made in Zwarts (2005). I rather take path to be an abstract notion implied by the use of adpositions such as *to, towards, up to, from, out of, through, across, past*, etc.

Finally, Romeu (2013, 2014) totally discards the Path projection and takes spatial adpositions always to be locatives. He treats elements in Spanish equivalent to English *to/from/through* as modifiers of the Place Projection (Romeu's RelP and my $Rel_{PLACE}P$). Romeu's proposals are in line with mine in that such adpositions do not refer to a set of points (i.e. path) and that they do not (all) denote directionality. Nevertheless, my proposal departs from his in what concerns the position and function of these elements syntactically and semantically (to be presented in section 3.4.2). A problematic issue in Romeu's proposal has to do with the concept of modifiers. It is not clear how *to/from/through* can modify elements in the same way as the conventional modifiers such as *quietly, two metres high, shortly, already,* etc. do.

3.4.2 *Proposal*

I propose that adpositions such as English *to/from/through* and their equivalents cross-linguistically are Relators in a path domain. They relate the Figure to a Ground which forms a specific component of a path, as was shown in (1a-c). For example,

- *to* relates a Figure to a Ground which defines the end point of a path.
- *from* relates a Figure to a Ground which defines the starting point of a path.
- *through* relates a Figure to a Ground which defines the middle point(s) of a path.

These points of a path are lexicalised by the DP Ground but the DP does not lexicalise the path as a whole. Svenonius (2010: 144) refers to the DP Grounds as locative expressions which name specific points of a path. Based on this proposal and the definition of path (see section 3.2), these adpositions do not denote the path itself. They are, however, elements used in the path domain. Evidence in support of this proposal comes from the fact that path can be denoted or implied without the presence of any of these adpositions:

(16) a. Tahir ran a mile.
b. Tahir entered the room.
c. Tahir jumped in the pool.
d. Tahir is running/walking.

In none of these examples is a non-locative adposition used and yet a path is implied. In each of them the Figure simply traverses a set of points while running, entering, jumping or walking. This means that path is an abstract notion that can be implied within the verbal domain as well, as shown in (16c and d) (cf. Zwarts 2005). The questions that arise here are: can path be lexicalised, and more importantly, should it be recognised as a grammatical category? In (16a) the DP *a mile* can be taken to represent the path. In Ramchand (2008) this DP is represented as PATH, which she takes as the DP complement of a process verb (see chapter 4 for details on Ramchand (2008)). An argument against taking *a mile* as PATH is that a mile represents a measure that delimits the distance the Figure has been running. Hence the ungrammaticality of **Tahir ran a road/a street/*etc. However, consider the examples in (17) where path seems to be overt.

(17) a. The road through the forest twists and turns like a corkscrew. (BNC, W_misc)
b. The road to the County finals is tough. (BNC, W_newsp_otehr_report)

There are two assumptions underlying these examples. On one hand, we can say that the Relators *through* and *to* relate the Figure *the road* to a specific point of a path. Under this interpretation *the road* is taken as a non-extended entity. On the other hand, *the road* can be taken to represent a set of points. For example, in (17a), *the road* defined is limited to the set of points that is located within the forest, and in (17b), *the road* is interpreted as the set of points that has its end at the County finals. It is hard to determine which assumption is the right one. In addition, if path is lexicalised, we need to assign it a specific syntactic position in a syntactic projection. More specifically, where to place a path projection in examples such as (1a-c) or (16a-d)? One assumption can be that the path notion is implied, but not lexicalised, neither by non-locative elements such as *to/from/through* nor by other elements (for a somewhat parallel idea see Noonan (2010)). Since the lexicalisation of path is not the aim of this thesis, I leave an investigation of this issue for future research. In the rest of the chapter I use

examples of DP Figures that represent 0-dimensional or 1-dimensional entities such as *the house, the car, Sara, Tahir*, etc.[47]

Finally, the advantages of taking adpositions such as *to/from/through* as Relators in a path domain are the following. First, the term reflects the semantic function of these elements. It makes it clear that they denote a specific role in the spatial relationship. Second, it provides a unified treatment of all spatial adpositions. In chapter 2 I argued that *in/on/above* are Relators in a place domain and in this chapter I claim that *to/from/through* are Relators too but in a path domain. What is distinct is the domain in which these adpositions are employed. Third, it accounts for cases where these elements are used in nominal constructions, such as *the bridge into San Francisco, the train to/from London, the city to the north*, etc. Contra studies which posit a movement or change of location with the use of such adpositions (e.g. Helmantel 2002) in these nominal cases the Figure is simply related to the Ground. Finally, the abstract notion of Relators can be extended to account for the temporal or metaphorical use of these adpositions, e.g. *to 8 o'clock, from early morning, through the day, to the decision, throughout the discussion,* etc.

It may be worth mentioning that my proposal can be understood as drawing on a train metaphor. The entities involved in a train model are parallel to the elements involved in a path domain. For example, the passengers are the Figure, the stations represent the Ground, the railway stands for the path (the set of points) and the train itself is the Relator. Metaphorically, the train (the Path Relators) serves as a means to relate the passengers (the Figure) to specific stations (the Ground) on a railway (the path).

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[47] Clear examples of a Figure-Ground relationship can also be found in sentences which involve a with-adjunct:

(i) a. With John in the library, we can use his flat for a party.
b. With London to our north, we can get to Bristol by going straight ahead.

In (ia) the spatial relation expressed is that of locative, with *John* being the Figure and *the library* the Ground. In (ib) the Figure is *London* and the Ground is *our north*; they are linked to each other via the Relator *to*. Examples like these support the idea that the semantic function of *in* and *to* is that of relating. However, some care should be taken in applying this test. Thus (ic), in which *to* is a Path Relator, is ungrammatical:

c. *With this road to Newcastle, we can get there without any trouble.

The ungrammaticality here is not due to any problem with the Figure-Ground relation in Paths but to the stative meaning imposed on a with-adjunct lacking a verb. Thus, (ic) is ruled out by the same principle that forbids sentences like (id), where the stative interpretation is imposed by the presence of the verb *be*:

d. *This road is to Newcastle"

To sum up, the entities involved in a spatial relationship that includes *to/from/through* are a Figure and a Ground. The Figure's location is determined with reference to a Ground. The Ground forms a specific point defined with reference to a path. It can be a starting point, an end point or some intermediate points. The main role or function of *to/from/through* is to relate the Figure to one of these points. Based on this function, I proposed the label Path Relators as a cover term for them. In the following section, I discuss the semantics and types of Path Relators in English.

3.5 Typology and Semantics of Path Relators

In section 3.4.2, I have proposed the term Path Relators to refer to elements such as *to, from, through,* etc. Below I will elaborate on the semantic properties of each of these elements and others. One way of analysing the semantics of Path Relators is through suggesting a typology of path. For this purpose, I follow Pantcheva's (2011) path typology, which to my best knowledge is the most recent and thorough study of path Ps across a large number of languages. Thus, I first review her account of path typology and then discuss its implications with reference to my proposal.

3.5.1 *Pantcheva (2011)*

Pantcheva's study is a development of path typologies proposed in Jackendoff (1983), Piñón (1993), Kracht (2002) and Zwarts (2008a). For instance, Jackendoff (1983: 165) identifies three basic types of path "according to the path's relationship to the reference object or place": Bounded, Directions and Routes. The first two are subdivided in turn into two types, so the total number of path types in Jackendoff's (1983) typology of path is five (recall that path is the covering term for the Ps *to/from/through* in Jackendoff (1983)). This can be represented as in figure 3.3 with representative examples from English, cited from (Pantcheva 2011: 13):

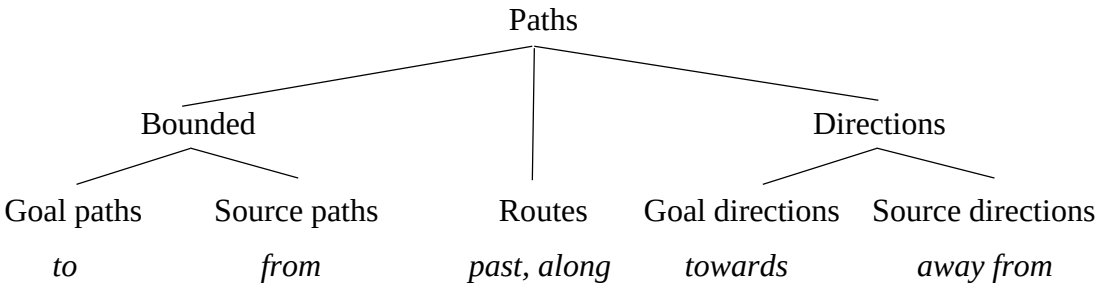


Figure 3.3 Jackendoff's (1983) typology of paths

Bounded path Ps include those Ps whose DP Grounds specify an extreme point in a path such as *to* and *from* in English. The Ground of *to* specifies the end of a Goal path whereas the Ground of *from* specifies the beginning of a Source path. Direction path Ps can also be subdivided into two: Goal and Source directions.[48] Contrary to bounded Ps, the Ground of a direction P does not form an extreme point in a path, "but would if the path were extended some unspecified distance" (Jackendoff 1983: 165). Examples of Direction Ps are *towards* and *away from.* Finally, Route path Ps include those Ps where the Ground occupies an intermediary point in a path with the extreme points of the path being unspecified. Moreover, the Figure will be located in or by the Ground at some point of time in the path. Typical Route Ps in English are *past, along, through* and *across*.

As mentioned earlier, Jackendoff's (1983) typology of path as well as the path typologies suggested in Piñón (1993), Kracht (2002) and Zwarts (2008a) have been further developed in Pantcheva's dissertation (2011: Chapter 2). On the basis of data from 81 genealogically different languages, Pantcheva (2011) identifies eight types of paths divided into three canonical path types (Goal, Source and Route), on the basis of the (non-)availability of specific properties. For the semantics of these adpositions, Pantcheva (2011) follows mainly proposals in Fong (1997) and Zwarts (2008a) according to which two phases are involved. Pantcheva's (2011) typology of path types is represented in the diagram in figure 3.4:

[48] It is worth noting that the distinction between Bounded and Direction Ps is not unproblematic. For example, *to* also denotes a direction on a par with *towards.* Moreover, in the sense of my proposal in 3.4.2 *from* and *away from* do not denote a direction.

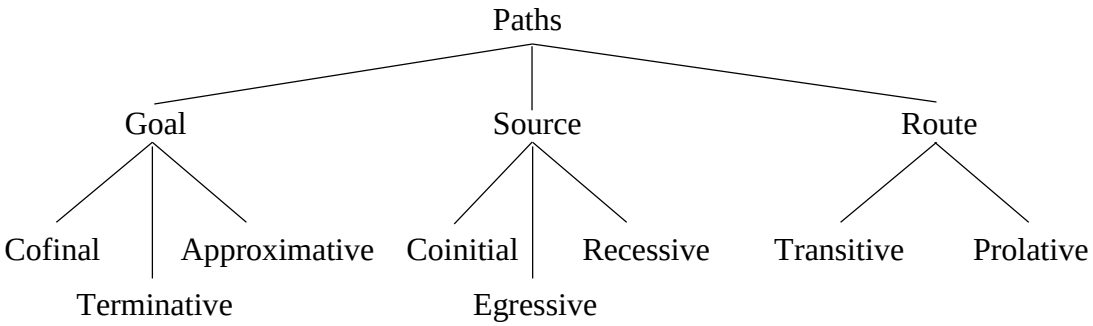


Figure 3.4 Pantcheva's (2011) typology of paths

Each of these path types is defined in terms of three properties: ±TRANSITION, ±ORIENTATION and ±DELIMITATION. By transition, she means paths may contain a "transition from one spatial domain to a complementary spatial domain" (Pantcheva 2011: 14). Some path adpositions have a transitional property and some do not; moreover, those with the transitional property can include one transition or two. Orientation, on the other hand, refers to the presence of direction in the movement denoted by a path adposition. Again, some path adpositions denote a specific direction while some do not. Finally, delimitation is related to the availability of an upper or lower boundary for a movement. Some adpositions (within Goal and Source types only) delimit the Figure's movement and some do not. The eight path types are given in (18-20) along with their properties and representative Ps from English (see Pantcheva 2011: 31).

(18) Goal

a. Cofinal (+TRANSITIONAL, +ORIENTED, –DELIMITED): *to the school*

b. Terminative (+TRANSITIONAL, +ORIENTED, +DELIMITED): *up to the school*

c. Approximative (–TRANSITIONAL, +ORIENTED, –DELIMITED): *towards the school*

(19) Source

a. Coinitial (+TRANSITIONAL, +ORIENTED, –DELIMITED): *from the school*

b. Egressive (+TRANSITIONAL, +ORIENTED, +DELIMITED): *starting from the school*

c. Recessive (–TRANSITIONAL, +ORIENTED, –DELIMITED): *away from the school*

(20) Route

a. Transitive (+TRANSITIONAL, –ORIENTED, –DELIMITED): *past the school*

b. Prolative (–TRANSITIONAL, –ORIENTED, –DELIMITED): *along the school*

A general observation about Jackendoff's (1983) and Pantcheva's (2011) typology of paths is that paths can have different shapes, but not different types as was shown in figure 3.1. There is no goal or source or route path type as such. Instead Goal, Source and Route can be said to represent the points involved in a path as was discussed in sections 3.2 and 3.4. That is, the Goal represents the end point of a path, the Source represents the starting point of a path and the Route represents the intermediate points. Thus, what Jackendoff (1983) and Pantcheva (2011) refer to as path types should be understood as types of Path Relators. They relate the Figure to one of these types of points of a path. Henceforth, I refer to the three main types of adpositions that represent Goal, Source and Route as GoalRel, SourceRel and RouteRel, respectively. Adapting proposals in Pantcheva (2011), below is a semantic analysis of *to, up to, towards, from, away from, out of, through, across, past* and *along*. While I share with Pantcheva the different properties displayed by the various elements used in a path domain, I will discuss these properties from a new perspective taking into account the way I view these elements as Relators.

3.5.2 *Goal Relators*

The Ps, *to*, *up to* and *towards* are referred to as Cofinal, Terminative and Approximative, respectively in Pantcheva (2011). They are all goal oriented paths according to Pantcheva (2011); however, they differ with respect to other properties. While *to* and *up to* involve a transition of a Figure from one location to another, *towards* does not. Besides, while *up to* suggests the end point as a termination of a path, *to* and *towards* do not. See examples below (the relevant elements are in bold):

(21) a. there's a burglar who got **to** the house. (BNC, S_meeting)

b. I'd like to go **up to** the house. (BNC, W_fict_prose)

c. They began to walk back **towards** the house. (BNC, W_fict_prose)

In (21a), *to* represents a Goal Relator of the type characterised as transitional, oriented and non-delimited. The element *to* involves a transition of a Figure from one location to

another. That is, according to Pantcheva (2011), with the use of *to*, the Figure *burglar* is transmitted from a location which is outside the Ground space (*the house*) to a location at or in the Ground space. Moreover, *to* denotes a movement oriented or directed to the end point of the path, hence the goal. However, *to* does not suggest a specific termination of the Figure's movement or path. That is, the Ground *the house* in (21a) is an end point of the path but not a final ending point.

The complex element *up to* in (21b) displays the same properties as *to* in (21a) in terms of transition and orientation. However, *up to* has a positive delimited property. Thus it seems to suggest a terminating end point. That is, in Pantcheva (2011), the only difference between (21a) and (21b) is that in the latter the Figure's movement or path terminates precisely at *the house*, while in (21a) no such specification is given. In English, this difference is obviously triggered by the aspectual use of *up*, which together with *to* suggest a termination meaning. Note that *up* does not have a vertical spatial meaning here; i.e. no higher position is entailed. With regard to (21c), *towards* shares one property with the previous Goal Relators, which is its goal-orientation. But *towards* neither involves a transition from one location to another nor delimits the Figure's intended movement. Although the Ground *the house* forms an end point of the path, it does not suggest that the Figure will be located within its dimension or that it is the upper boundary of the Figure's movement.

The Cofinal, Terminative and Approximative types are represented graphically as in (22) by Pantcheva (2011: 29). The minuses represent the negative phase of a path and the pluses represent the positive phase. 0 represents the starting point of a path and 1 represents its end point.[49]

(22) a. Cofinal 0 – – – – + + + + 1

b. Terminative 0 – – – – – – – + 1

c. Approximative 0 – – – – – – – – 1

[49] For further elaboration of these graphs, the reader is referred to Pantcheva (2011) and Zwarts (2008a).

3.5.3 *More on TO*

Before turning to Source Relators, a few words are due on the characterisation of the Goal Relator *to*. Unlike *towards*, *to* can be used with other elements giving *up to*, *into* and *onto*. Following Pantcheva (2011), *to, into* and *onto* are transitional, non-delimited and goal-oriented Ps, *up to* is a transitional, delimited and goal-oriented P and *towards* is a non-transitional, non-delimited and goal-oriented P. Given these characterisations, the questions that arise are: (1) Is the transitional property in *to, into, onto* and *up to* expressed by *to*? (2) Is the delimitation property in *up to* due to the presence of *up*?

In Pantcheva (2011), Ps such as *into, onto* and *up to* are treated as single elements; therefore nothing in her analysis illuminates the source of these properties (transitional and delimitation) in *into, onto* and *up to*. To distinguish between *to* and *up to*, Pantcheva represents the transitional property of *up to* as a single plus in its graphic representation (see 22b). She takes this single plus as the "only point where the location specified by the Ground holds" (Pantcheva 2011: 25). In contrast, she represents *to*-path as consisting of a sequence of pluses in the second phase to reflect the fact that the Figure can possibly be within the Ground spatial domain (see 22a). This analysis causes a contradiction: how can an element that has a transitional feature simultaneously express a delimitation, which is the case with *up to*? Moreover, given the analysis of *to*, Pantcheva's (2011) transition property entails two interpretations: the transition is either from one of the basic points of a path (e.g. from source to goal, from source to middle points, from middle points to goal or the reverses) or the transition involves a further transition (e.g. from the goal to a location within the spatial domain of the Ground). Following Pantcheva (2011) these two interpretations are probably true for *to*, but not for *up to*.

To put things in the right order, first I share with Pantcheva (2011) the idea that the lexical semantics of *to* and *up to* involve a transition, but this transition holds only between the phases (locations) in a path (cf. Fong 1997). These locations should be understood as positions in a path domain. For a Figure to become in a position within the spatial domain of the Ground, a Place Relator is required such *in*. That is, while Pantcheva (2011) takes transition in case of *to* to be from a position outside the Ground to a position inside, I take the transition property to be from a position that is not the

goal or end point of a path to the goal or end point. I extend this view of transition to the other Relators in a path domain.

I will continue representing *to* and *up to* as in Pantcheva's (2011) characterisation (see 18a-b). However, I propose that the transition property of *to* can be affected by the use of other elements. These can be PP-internal or PP-external. PP-internally, when an element such as *up* occurs with *to*, the transition property still holds but *up* imposes a boundary on the Figure's movement. This answers the question 'Is the delimitation property in *up to* due to the presence of *up*?' that delimitation is raised by *up* in *up to*. Contrary to *up*, when elements such as *in* or *on* are used with *to*, the transition property of *to* extends to allow for a further transition within the domain of the Ground. It can be the inner side or the upper surface of the Ground. This transition to the Ground spatial domain is due to the semantic function of *in* and *on* (recall the discussion in chapter 2, section 2.2.2). PP-externally, the transition property of *to* can be extended to a position where the Figure ends up within the spatial domain of the Ground. This can be done through the use of a specific type of motion verbs (namely +Res verbs) e.g. *Tahir went to the castle*. This is presented in detail in chapter 5.[50]

3.5.4 *Source Relators*

The path types given in (19a-c) are the opposites of those in (18a-c). The source elements include Coinitial, Egressive and Recessive. For example, the opposite of a Cofinal element is that of Coinitial. Although they display the same properties, they differ with regard to the type of extreme point each is related to. This is clear when we contrast the English Ps *to* and *from.* While *to* is associated with the end point of a path, *from* is associated with the starting point.

A Coinitial element, according to Pantcheva (2011), involves a transition of a Figure from a positive phase to a negative phase and a movement that proceeds from the starting point of a path. Similar to a Cofinal element, a Coinitial element does not specify the boundary of the starting point of a movement. Similar but not identical to a

[50] An implication of the assumption that the transition property in *up to* is only due to *to* is that *up* cannot co-occur with a non-transitional adposition such as *towards*. Also the latter cannot co-occur with adpositions such as *in* and *on*.

Coinitial element is an Egressive element. These two elements share the same characteristics except that while the former is not delimited, the latter is. That is, an Egressive adposition suggests that the Ground is the starting-point of the Figure's movement along a path. Pantcheva (2011) uses the expression *starting from* to represent the Egressive path type in English and distinguishes it from a Coinitial path represented by *from*. However, I think that the difference between Coinitial and Egressive, using the elements *from* and *starting from*, is not always obvious in English. Contrast (23a and b). The relevant elements are in bold.

(23) a. She had run **from** the exploding craft and collapsed. (BNC, W_fict_prose)
b. Gently smooth the fabric on to the card **starting from** the centre. (BNC, W_pop_lore)

In both examples, the Ground encodes the starting point of the path. Although the word *starting* in (23b) seems to explicitly refer to the Ground as the starting point of the path, it does not function as an adpositional element. Besides, its absence in (23a) does not entail that the Ground *the exploding craft* is not the starting point of the path. Accordingly, I would argue that *starting from* does not exemplify an Egressive element. Thus, English lacks a specific lexical or morphological adposition that expresses a transitional, delimited and source-oriented Relator. Examples of true Egressive paths can be found in the Permic languages, in which they are denoted by a case morpheme (the Egressive case) (see Pantcheva 2011: 25 for illustrative examples).

The third Source Relator is called Recessive, which forms a parallel path type with the Approximative one in Pantcheva (2011). They are parallel by being non-transitional, oriented and non-delimited, but different in terms of the extreme point they relate the Figure to. An Approximative P is a goal-oriented Path Relator, while a Recessive P is a source-oriented Path Relator.[51] In English, the element *away from* which is made up of the adverb *away* and the Coinitial Path Relator *from* can express a Recessive P. In my analysis, *from* relates a Figure to a starting point in a path, while *away* expresses distance. An illustrative example is:

[51] Although I mentioned in section 3.2 that source-denoting elements do not denote direction in comparison to goal-denoting elements, I refer to them as oriented elements here in line with Pantcheva (2008).

(24) The actors drifted away from the centre of the room. (BNC, W_fict_prose)

Graphic representations of the three SourceRel sub-types are given in (25), from Pantcheva (2011: 29):

(25) a. Coinitial 0 + + + + – – – – 1
b. Egressive 0 + – – – – – – – 1
c. Recessive 0 – – – – – – – – 1

Another element that can be described as source-denoting in English is *out of*. I will discuss its case in the next section.

3.5.5 The case of *OUT OF*

Following Pantcheva (2011), the preposition *out of* could well be a representative example of the Coinitial type on a par with *from*. Both *from*- and *out of*-phrases suggest a transition, no delimitation and source-orientation. However, contrast (26a and b) (example 26b is repeated from (23a)):

(26) a. Somebody came out of the room. (BNC, W_fict_prose)
b. She had run from the exploding craft and collapsed. (BNC, W_fict_prose)

While in both examples the DP Ground within the PP suggests a starting point, the Figure's original position differs in each case. In (26a), the Figure is transmitted from a location inside the Ground to an outer location. In contrast, in (26b), the Figure has not necessarily been inside or within the Ground spatial domain. The way Nam (1995) distinguishes between *from* and *out of* is through testing the entailment patterns expressed by each. The test shows that the Figure is in the interior region of the Ground in case of *out of* but not *from*. Examples (27a-b) are adapted from Nam (1995: 123) ((|=) means 'it entails' and (|≠) means 'it does not entail').

(27) a. Cindi walked from the market |≠ Cindi was in the market
b. Cindi walked out of the market |= Cindi was in the market

In Zwarts (2005), the difference between *from* and *out of* is reflected in terms of the location relative to the Ground each of these adpositions can relate to. For example, *from* relates to an AT location, whereas *out of* relates to an IN location (recall the definitions of source adpositions by Zwarts (2005: 761), given in (7) in this chapter). The case of *out of* is very similar to its Cofinal counterpart *into*. With both the Figure is within the spatial domain of the Ground at one point. In case of *out of,* the Figure is inside the Ground in its initial phase and in case of *into* the Figure is inside the Ground in its final phase (see also Fong 1997 and Kracht 2002).

In sum, similar to *from, out of* is a Coinitial element, but it differs in that the Figure exists within the spatial domain of the Ground before it moves out of it. This feature is not available in case of *from*.

3.5.6 *Route Relators*

I turn now to Ps such as *past, along, through, across* and *around*. These are usually referred to as route-denoting Ps (Zwarts 2005; Pantcheva 2011). Unlike Goal and Source Relators, these Ps involve no orientation; that is, no extreme points are defined. In other words, since the Ground forms the middle point of a route path, no direction is implied or specified. There are, however, certain differences among these elements. In contrast to Jackendoff's (1983) general route path type, Pantcheva (2011) identifies two subtypes of route path. These are Transitive and Prolative. The former is transitional whereas the latter is non-transitional. English examples of these two Path Relator types are *past* and *along,* respectively. Both of these Ps are negative in terms of orientation and delimitation.

(28) a. Mallachy had sailed past the beach. (BNC, W_fict_prose)
b. I could walk along the beach with you. (BNC, W_fict_prose)

In (28a), the Figure undergoes two transitions; first from a location outside the Ground to the Ground and then from the Ground to another location. All these locations are positions or phases in a path domain. In contrast, in (28b), the Figure does not undergo a transition as it follows a path by the beach. The association of transition with *past* but not with *along* is determined via telicity and temporal adverbials. For instance, telic VPs are compatible with frame temporal adverbials such as *in an hour* and *in two minutes,*

while atelic VPs are used with span temporal adverbials such as *for an hour* and *for two minutes*. However, when atelic VPs are used with transitional Path Relator adpositions, the latter can make them telic and thus license the time-frame adverbials *in an hour* and *in one minute*. In contrast, when atelic VPs accompany non-transitional Path Relator adpositions, the VP keeps its atelic feature and only time-span adverbials will be licit. See the pairs of examples below, cited from Pantcheva (2011: 28).

(29) a. The boy ran past the tree in one minute.
b. *The boy ran past the tree for one minute.

(30) a. *The children walked along the river in an hour.
b. The children walked along the river for an hour.

Both *run*- and *walk*-phrases are atelic; thus they should allow span temporal adverbials only. However, while the *walk*-phrase obeys this rule, (30b), the *run*-phrase does not, (29b). The latter accepts *in*-time adverbial modification as shown in (29a). This difference in behaviour is triggered by the use of a transitional Route Relator adposition, *past* in this case. Accordingly, *past* is a transitional Route Relator, while *along* is a non-transitional Route Relator. A further difference between *past* and *along* can be shown with respect to the Ground dimensional reading. The Ground of a *past* is usually perceived as a point of no dimension, while the Ground of an *along* is interpreted as an extended entity.

Examples of other Route Relators in English are *through, across* and *around*. Each of these relates a Figure to some intermediate points in a path domain. These points are represented by the DP Ground. Piñón (1993: 20) notes that *through* and *across* are compatible with both *for*- and *in*-phrasal modifications, i.e. with time-frame and time-span. Hence, these Ps can be characterised as either transitional or non-transitional. With regard to *around*, it behaves similarly to *through* and *across* in terms of being (non-)transitional since it allows both forms of temporal adverbials. Illustrative examples are:

(31) a. The seeds…passed through the gut in 13 hours. (BNC, W_ac_nat_science)
b. He walked through the mountains for seventy-two hours. (BNC, W_fict_prose)

(32) a. Across the world in 30 days. (BNC, W_news_script)
b. Windy' sessions' blast day and night across the gulf for 2 to 6 days. (BNC, W_misc)

(33) a. She travelled around the world in 88 days.
b. Patrick hovered around the door for a few moments. (BNC, W_fict_prose)

This, however, does not mean that these three Route Relators should be classified as a separate route type, because the identification of the transitional property is not apparent when these Ps are used without temporal adverbials. Pantcheva (2011: 28) does not elaborate on the case of *through* and *across* and leaves open the question as to which Route type they should belong (Transitive or Prolative). The telic/atelic nature of PPs headed by *through, across* and *around* is determined by the boundedness of the DP Ground. For example, in (31a) the DP Ground is a bounded entity which is perceived as a point so that the Figure passes through it in a specific amount of time. In (31b), *the mountains* is perceived as an extended bounded entity or space which can be walked through for a specific amount of time. Thus, in case of *through, across* and *around*, the choice between *in*- and *for*-phrases is based on the type of DP Ground or how we perceive it. A further example is given in (34).

(34) Tahir walked through the tunnel in one minute/for one minute.

In (34), the tunnel can be thought of as an extended bounded space which can be walked through (hence the acceptability of *for one minute*) or as a middle point in a path where the Figure enters it at one point and gets out of it on the other side (hence the acceptability of *in one minute*). The same is true for *across* and *around*. Based on this discussion, I will disregard the split of route path Ps suggested by Pantcheva (2011), which merely distinguishes between transitional and non-transitional Route Relators. Similar cases are found in Kurdish and Arabic (see sections 3.7 and 3.8).[52]

[52] In Finnish, the postposition *läpi* 'through' is an example of a Transitive route element. It is only used with time-frame phrases such as *in one minute/hour*. You can't say 'He walked through the park for one hour' in Finnish using that postposition (Anders Holmberg, p.c.).

3.5.7 *Interim summary*

In this section I have discussed the semantics of different types of Relators in a path domain as used in English. I have shown that the three basic types involved in a typology of Path Relator semantics are GoalRel, SourceRel and RouteRel. GoalRel elements relate a Figure to a Ground which forms the end point of a path. SourceRel elements relate a Figure to a Ground which forms the start point of a path. RouteRel elements relate a Figure to a Ground which forms some intermediate point(s) of a path. Within each of these three main types, several other types can be identified. Generally, nearly all the eight types (except Egressive) recognised in Pantcheva (2011) have representative elements in English.

The Ps examined are *to, up to, towards, from, away from, out of, past, along, through, across* and *around.* They all express a spatial relationship in a path domain. Each is associated with specific characteristics in terms of ±TRANSITION, ±ORIENTATION and ±DELIMITATION. The main issues discussed are the transition property of *to* and the effect other elements can have when combined with *to*. For example, I proposed that *up* delimits the transition property of *to* in *up to*, while *in* and *on* grants the Figure's access to the spatial domain of the Ground. Finally, I have shown that the transition property that splits the two types of RouteRel is not apparent in cases of Ps such as *through, across* and *around*. This is because their telicity is based on the boundedness of the DP Ground and/or the way we perceive it. In section 3.6, I examine the internal syntax of PPs involving these Path Relators.

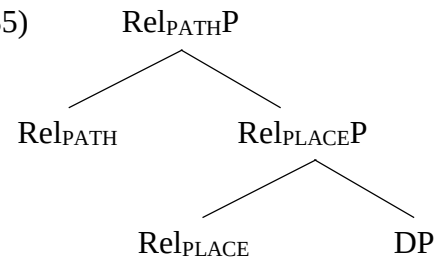
3.6 Syntactic Structure: $Rel_{PATH}P$

I have proposed that *to/from/through* are spatial Relators in a path domain. These elements relate Figures to Grounds which form specific components of the path, as stated above. I referred to them as Path Relators. Accordingly, I assume that *to/from/through* lexicalise a Path Relator grammatical category (Rel_{PATH}).[53] Moreover, the position where such elements (Rel_{PATH}) are introduced into the syntax of a complex prepositional phrase is above $Rel_{PLACE}P$. This order is in line with other proposals in the literature (see e.g. Jackendoff 1973, 1983, 1990; Koopman 2010; den Dikken 2010;

[53] But see also Romeu (2013, 2014), who assumes that there is no path projection as such.

Svenonius 2008, 2010). However, it differs in that while these authors represent these adpositions as the lexicalisation of the functional head involved in PathP or DirP, I take them to lexicalise Rel_{PATH}. This can be represented in the structure in (35), repeated from (3) in chapter 1:

(35)

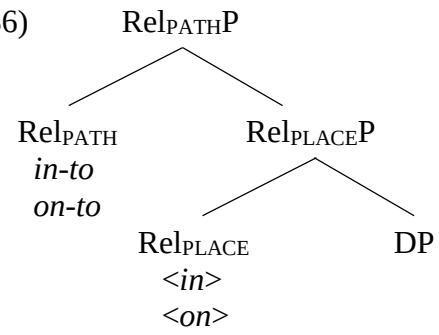


Syntactically, Path Relator Ps are more complex than Place Relator Ps, because in a complex spatial PP, Path Relators dominate the Place Relators and within the Place Relator projection several other functional heads can be identified, such as AxPart and K as was shown in chapter 2. Below I represent the syntactic structure of different types of Path Relators, focusing on those which display a morphologically complex make-up, such as *into, onto, up to, away from* and *out of*.

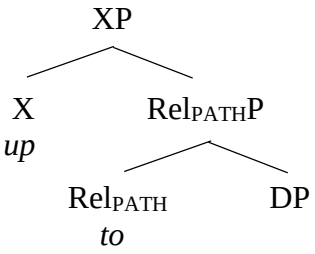
The prepositions *to, towards, from, past, along, through, across* and *around* are morphologically simplex items. They are introduced under the Rel_{PATH} terminal node in (35). Contrary to these, items such as *into, onto, up to, away from* and *out of* are composed of two elements. For *into*, following Folli and Ramchand (2005) I assume that *in* incorporates into *to* forming *into*. The same is true for *onto*. This is shown in (36). For *up to*, following Svenonius (2010), I take *up* to be a particle introduced in a suitable particle-like phrase above $Rel_{PATH}P$. I extend this analysis of *up to* to *away from* as well because both are made up of a particle and a Rel_{PATH} element. The tree structures of *up to* and *away from* are given in (37)-(38), respectively. Finally, for *out of* I assume *out* is a preposition introduced under the Rel_{PATH} node and *of* is under the K node, (39).[54]

[54] For more discussion of *out of* the reader is referred to Cappelle (2001).

(36)



(37)



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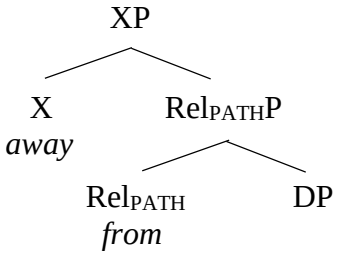

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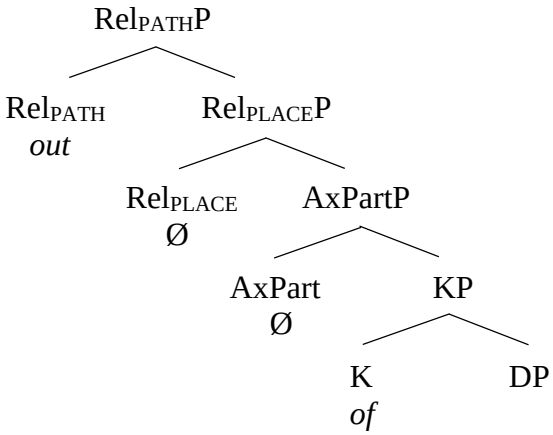


Finally, based on morphological evidence drawn from various languages, Pantcheva (2011: Chapter 4) decomposes the Path head of a PathP (which is equal to my Rel$_{PATH}$) into five functional heads: Goal, Source, Route, Scale and Bound. The functional sequence of the first three heads are as follows: Route>Source>Goal, while the position displayed by the Scale and Bound heads is not fixed (for details see Pantcheva 2011, chapter 4).

Each of these heads serves a syntactic and semantic function. For example, syntactically, GoalP takes PlaceP ($Rel_{PLACE}P$) as its complement, while SourceP takes GoalP as its complement. Semantically, each of these functional heads contributes a specific meaning distinct from all others. Pantcheva's (2011) decomposition is based on the assumption that "morphological complexity indicates syntactic complexity" (Pantcheva 2011: 63). That is, the morpho-syntactic properties of the path P determine its internal syntactic structure.

Furthermore, Pantcheva makes use of three assumptions that inform her analysis of the internal structure of the Path head (see Pantcheva 2011: 44). The first assumption is in line with the phrasal Spell-out model, which entails that a morpheme can lexicalise one or more than one syntactic element. The second assumption is the hypothesis assumed in the cartographic approach, which reflects the assumptions of Universal Grammar. That is, even if a syntactic head is not morpho-phonologically overt or lexicalised in a language, it is still present provided it exists in another language. The third assumption indicates that Spec-Head-Complement order is the only one valid in human language and that any other orders result from movement (see Kayne 1994 and Cinque 2005).

Since English, Kurdish and Arabic Path Relators do not display a very complex morphological structure that encodes each of these heads separately, I do not include discussion of this decomposition in this thesis. Interested readers are referred to Pantcheva's (2011) thesis.

To sum up, elements such as English *to/from/through* are used in a path domain to relate Figures to specific points of a path. They do not denote the path itself. Thus, I referred to them as Path Relators. Semantically, elements such as *to, up to* and *towards* relate a Figure to an end point of a path; *from, away from* and *out of* relate a Figure to a starting point; and *past, along, through, across* and *around* relate a Figure to some intermediate points of a path. Syntactically, I proposed the projection Rel_{PATH} to host the Path Relators.

In the following sections, I continue to use these terms in my examination of the adpositional system in two other languages: Kurdish and Arabic. I examine the lexical-semantic properties of their spatial-denoting adpositions as well as their syntactic structure. In doing so, I follow the general assumptions and proposals made and

developed in this chapter with respect to the semantics and syntax of spatial adpositions used in a path domain.

3.7 Kurdish

In Kurdish, path-relevant expressions can be denoted by the following adpositions: *bo/-a* 'to', *baraw* 'towards', *tākū* 'up to', *ba* 'by', *banāw* 'through', *badawrī* 'around', *badrezhāyī* 'along', *balāī* 'along/by the side of', *batanīsht* 'beside', *basar* 'over/across', *bazher* 'under', etc.[55] These adpositions can be divided into two main types based on the points that they relate a Figure to in a path domain, namely GoalRel and RouteRel as shown in table 3.1.

GoalRel	**RouteRel**
bo 'to'	*ba* 'by'
-a 'to'	*banāw* 'through'
baraw 'towards'	*ba…dā* 'across'
tākū/tāwakū/hatākū	*badawrī* 'around'
'up to'	*badrezhāyī* 'along'
	batanīsht 'beside'
	balāī 'along/by the side of'
	basar 'across/over'
	bazher 'under'

Table 3.1 Types of Path Relators in Kurdish

As can be seen, no elements have been recognised for SourceRel. This is because in Kurdish source can be denoted by a single element, *la*, which I characterised as a Rel_{PLACE} in chapter 2. In this chapter I elaborate more on this element. In section 3.7.1, I examine the semantics and syntax of the elements within GoalRel and in section 3.7.3 a similar analysis is carried out for elements within RouteRel. In section 3.7.2, I deal with the question of whether and how SourceRel is represented in Kurdish.

[55] The DP complement of most of these adpositions can end with one of the bound morphemes *-awa/dā/řā.* The most common among them is *-dā*, which accompanies almost all the RouteRel elements.

3.7.1 *GoalRel in Kurdish*

To start with, *bo*, *-a*, *tākū* and *baraw* are similar in the semantic function they denote. They relate a Figure to the end point/goal of a path. However, they differ in some respects. I use Pantcheva's (2011) proposed properties ±T(ransitional), ±O(riented) and ±D(elimited) to further classify these path elements in terms of the eight types listed in (18) to (20) in section 3.5.1. I also examine their morphological structure and the functional heads they lexicalise in a P projection. First, consider the case of *bo* and *-a*, both meaning 'to'.

(40) a. pro bo qutābkhāna chū-n (or: chūn bo qutābkhāna)[56]
to school go.PST-3PL
'They went to school.'

b. pro chū-n-a qutābkhāna
go.PST-3PL-to school
'They went to school.'

Following Pantcheva (2011), the Figure (which is represented as a null subject meaning 'they') in both examples in (40) undergoes a transition from one phase to another, and it is oriented towards the end point of a path. Meanwhile, there is not any indication that the Ground is the termination of the path. Both *bo* and *a-* are, thus, +T, +O and –D. Morphologically, *bo* is a simple morpheme and syntactically it lexicalises the Rel_{PATH} functional head. As to *-a*, this element is listed as a preposition in a few works, such as Kurdoev (1984) and Fattah (1997). *-a* is different from the other adpositional elements in that it appears as a clitic attached to the end of verbs, such as *chū* 'go'. In this thesis, based on the unique form of *-a* and its parallel meaning with *bo* 'to', I claim it is an allomorph of *bo*, displaying free variation. In chapter 5, I show a useful implication of this claim.[57]

[56] In Kurdish the order of PP and verb is mostly flexible, displaying PP scrambling. See chapters 5 for a discussion of the external syntax of PPs in Kurdish.

[57] It is worth noting that when the DP complement of the suffix *-a* is turned into a pronominal clitic, it is pronounced as *-e*. Examples (i) are adapted from (Thackston 2006: 67):

(i) a. 'ayawe bigāt-a shār
he/she reach.PRS.3SG-to town
'He/she wants to get to town.'

b. 'ayawe biygāt-e
he/she reach.PRS.3SG-to
'He/she wants to get to it.'

Consider next examples of *tākū* ‘up to’ and *baraw* ‘towards’:

(41) a. shaqām-ekī nwe drūst-krā newān sarkārez
street-INDF new make-PST between Serkarez
qatawī makhmūr tākū pird-ī newān … (Google search)
Qatawi Makhmoor up to bridge-EZ between
‘A new street was constructed between Serkarez, Qatawi and Makhmoor up to the bridge between…’

b. baraw qutābkhāna řā-mān-kird
towards school PRE-1PL-do.PST
‘We ran towards school.’

In (41a), *tākū* ‘up to’ suggests that the Ground *pird* ‘bridge’ forms a termination of a movement oriented to the end point of a path. It also suggests a transition of the Figure *shaqāmekī nwe* ‘a new street’, which is a metaphorical transition in this case. Its features are thus +T, +O and +D. Although *tākū* looks as if it is made up of the two elements *tā* ‘until’ and *kū* ‘as such’, semantic decomposition makes little sense here and I therefore assume the whole element to lexicalise the Rel_{PATH} node.[58]

Finally, in (41b), *baraw* ‘towards’ is again goal-oriented, but is non-transitional and non-delimited. The DP Ground *qutābkhāna* ‘school’ does not form the upper boundary of the Figure’s movement; *baraw* is, thus, –T, +O and –D. Morphologically, *baraw* is made up of two morphemes: *ba* ‘by’ and *raw* ‘face/direction’. The element *ba* ‘by’ can stand alone (as will be shown in section 3.7.3), and the morpheme *raw* seems to be an allomorph of *řū* ‘face’, so that the literal meaning of *baraw* can be something like ‘in the face or direction of’. Accordingly, I assume that *ba* lexicalises the Rel_{PATH} node and *raw* can be taken to represent the AxPart node based on its nominal properties. Hence, Kurdish has path elements that represent the three GoalRel subtypes; Cofinal, Terminative and Approximative.

The DP complement *shār* ‘town’ is represented as the pronominal clitic *-y* in (ib), therefore *-a* is pronounced as *-e*.

[58] The literal meaning of *tā*, as I suggest, is based on the observation that *tākū* is probably the short form of *tāwakū* or *hatākū* ‘up to’ (which is borrowed from Arabic *ḥatā*). These elements are made up of *tā/hatā* meaning ‘until’ and *kū/wakū* meaning ‘as such’.

3.7.2 *How SourceRel is expressed in Kurdish*

In Kurdish-English dictionaries, the element *la* is translated as 'in/at/from'. In chapter 2, *la* was introduced as a Place Relator relating a Figure to a space with reference to a Ground, as in *la qutābkhāna bū* 'she was at school'. However, when it accompanies specific motion verbs, it can suggest a source meaning. The question that arises is whether there are two versions of *la* (one locative and one non-locative) or that *la* is in essence locative but can suggest a source meaning in certain contexts. There are two possible answers to this question: (1) that *la* is a homonym with one form meaning 'in/at' and another 'from', or (2) that SourceRel is covertly expressed in Kurdish through the use of a null SourceRel element meaning 'from' derived from the occurrence of *la* with motion verbs. Below I discuss these two possibilities or assumptions, arguing the first one.

The first assumption is in line with Qadir's (2000) claim that *la* is an example of a homonym in Kurdish. The fact that supports this assumption is that *la* can be used with state verbs such as *būn* 'to be' and serving as a source element. Illustrative examples are as in (42). Note that in the glosses I will keep assigning *la* its English default meaning, which is 'in'.

(42) a. la min dūr bū
in me far be.PST.3SG
Intended meaning: 'She was far from me.'

b. la māł-awa bo qutābkhāna yak kātzhmer
in home-PLACE to school one hour
řoishtin-a
walking-be.PRS.3SG
Intended meaning: 'From home to school is one hour walking.'

In (42a-b), no motion verb is used and *la* implies a non-locative reading similar to that of 'from' in English. Accordingly, we can take the *la* used in these examples to be a mere homonym of *la* 'in/at', meaning 'from'.

I turn now to the second assumption, that *la* is a locative element but can give rise to a source meaning when used with specific motion verbs. Interestingly, when it expresses

a source reading, *la* usually accompanies specific motion verbs that imply 'returning', 'starting a path', 'going/coming out', 'escape' and the like. Illustrative examples are given in (43):

(43) a. la qutābkhāna gařā-n-awa (or: gařānawa la qutābkhāna)
in school come.PST-3PL-back
'They came back from school.'

b. la Karkuk-řā dastīpe-kird
in Kirkuk-PLACE start-do.PST.3SG
'It started from Kirkuk.'

c. řā-mān-kird la qutābkhāna
PRE-1PL-do.PST in school
'We ran away from school.'

d. la māł-awa hāt-in
in home-PLACE come.PST-3PL
'They came from home.' (In an answer to a question like 'where did they come from?)

In (43a-d), *la* seems to have the directional spatial meaning of source, which seems to be due to the motion verbs used, e.g. *gařānawa* 'came back' and *dastīpekird* 'started'. The question now is: how the use of *la* in (43) should be accounted for?

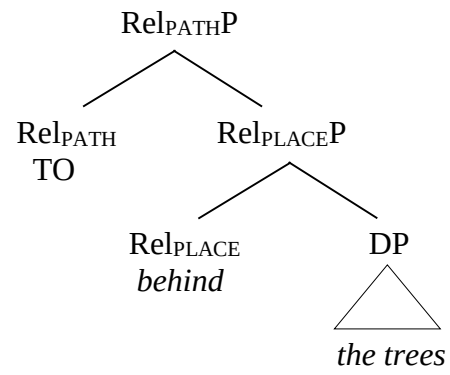
For English projective adpositions such as *behind, inside* and *below,* Svenonius (2010: 145) argues that they maintain their locative-denoting nature even if they occur with motion verbs. The examples in (44) are from Svenonius (2010: 129):

(44) a. The plane flew behind the trees.
b. The rabbit jumped inside the cage.
c. The submarine sailed below the ice.

He further assumes that the path meaning suggested by the sentences in (44) is due to the existence of a null path element, which is licensed by the motion verbs used (Svenonius 2010: 130). In English, for example, there is a null path element TO which is covertly present to denote a Goal path in contexts where place Ps are used. To illustrate, I present the syntactic structure of the PP in the example in (44a) as in (45).

Note that under my analysis, I take Svenonius' null path element to be parallel to my Rel_{PATH} element. (This proposal of Svenonius (2010) is revisited in section 5.4.2, see discussion there).

(45)



If we accept this line of analysis, then in Kurdish (43a-d), there could be a null Source element meaning FROM under the Rel_{PATH} head. This source meaning is triggered by the verbs used, hence the layered structure in (46) for the PP in the example in (43a):

(46) [$_{RelPATHP}$ 'FROM' [$_{RelPLACEP}$ *la* [$_{AxPartP}$ Ø [$_{KP}$ Ø [$_{DP}$ *qutābkhāna*]]]]] (lit. 'from in the school')

Semantically, the structure in (46) implies that the null Source element relates a Figure to the starting point of a path, and the Place Relator *la* relates the Figure to a specific space with reference to a Ground. Following Svenonius (2010), one can assume that Kurdish has a null SourceRel element which is triggered by motion verbs that denote 'movement from a starting point', such as *gařānawa/hātnawa* 'to come back/return'. This is in line with the Structural Ambiguity Hypothesis proposed in Gehrke (2008), according to which spatial Ps are locatives only and any ambiguity is taken to be structural and not lexical (see section 5.4.2 for details on Gehrke's (2008) hypothesis).

However, a problem with this assumption has to do with the plausibility of suggesting a null SourceRel element in a language that does not have an overt SourceRel element as such. In addition, while the second assumption of the null element may work nicely for (43), it does not for (42) due to the absence of a motion verb. Therefore, based on the discussion so far, I adopt the first assumption that *la* is a case of homonym. Moreover, on a par with its English equivalent 'from', the properties displayed by *la* 'from' are +T, +O and –D. Hence, it denotes the Coinitial type in Pantcheva (2011). With regard to the

other two subtypes of Source Relators, i.e. Egressive and Recessive, no elements are available in Kurdish.

3.7.3 *RouteRel in Kurdish*

To denote Route Relator type, Kurdish has several adpositional elements: *banāw* 'through', *ba…dā* 'across', *badawrī* 'around', *badrezhāyī* 'along', *batanīsht* 'beside', *balāī* 'along/by side the of', *basar* 'over/across' and *bazher* 'under'. Two general notes on these Ps are that first they all have the P *ba* as their initial element, and second in almost all of them the second morpheme is a nominal element that is identical to the second element in compound adpositions starting with *la* 'in/at', which I analysed as lexical realisation of AxPart (recall the discussion of the Kurdish data in chapter 2). Among the other non-spatial uses of *ba* are means, temporal and figurative. For example, *ba taxi bigarewa* 'go back by taxi', *ba yak kātzhmer* 'in one hour', *ba bāwkim błe* 'tell my father' (lit. 'say this to my father'). *ba* has the allomorph *pe*, which is used when the DP complement is in the form of a pronominal clitic, for example:

(47) a. nām-aka-m ba bāwk-im nārd
letter-DEF-1SG by father-POSS.1SG send.PST.1SG
'I sent the letter by my father.'

b. nām-aka-m pe-y nārd
letter-DEF-1SG by-PC.3SG send.PST.1SG
'I sent the letter by him.'

Turning now to the RouteRel elements, semantically none of them suggests an orientation or delimitation. However, they differ in terms of denoting transition, for which I will be applying the test of telicity and/or temporal modification. First consider the following examples:[59]

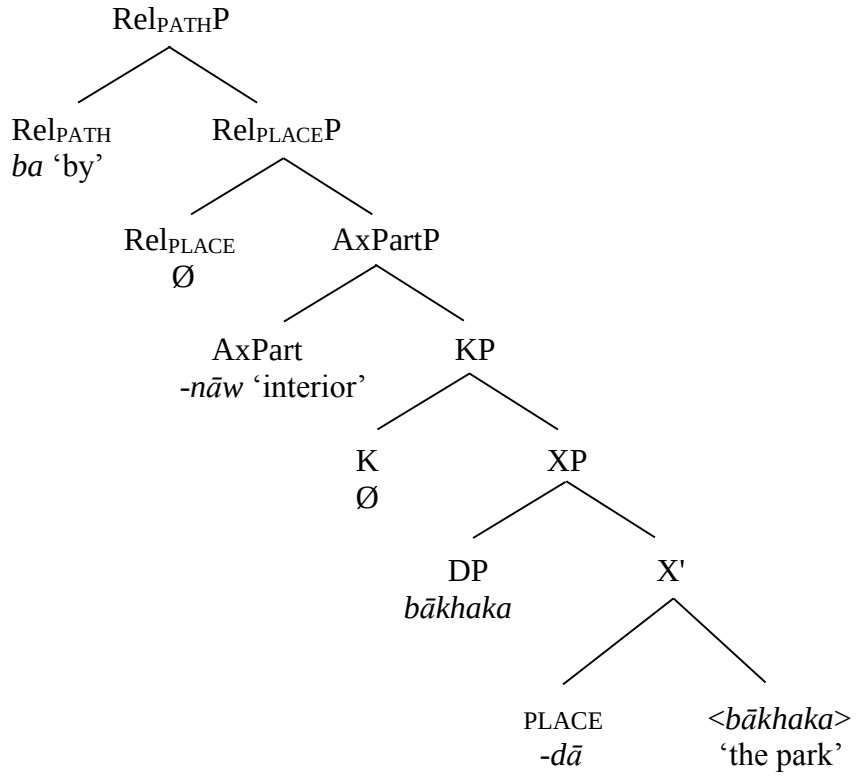
(48) a. banāw bākh-aka-dā řoisht-īn
through park-DEF-PLACE go.PST-1PL
'We went through the park.'

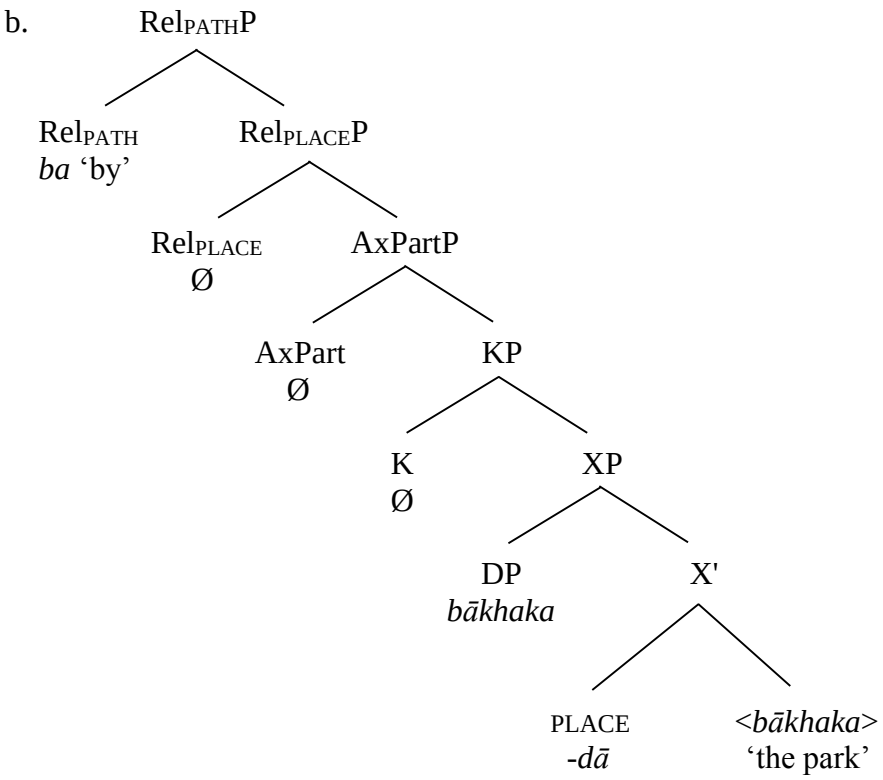
[59] I will use the adpositional elements that suggest the most precise meaning aimed at. For example, although the 'through' meaning of *banāw* in (48a) can also be expressed by *ba…dā*, I only exemplify *banāw.*

b. ba bākh-aka-dā tepař-īn
by park-DEF-PLACE cross.PST-1PL
'We went across the park.'

The preposition *banāw*, (48a), is composed of *ba* 'by' and *-nāw* 'interior' and literally means 'by the inner side of'. Its semantic function is to relate a Figure to the intermediate points with reference to a path. This meaning is encoded mainly by the first element: *ba*, while *-nāw* represents the inner side relevant to the Ground. The bound morpheme *-dā* denotes the PLACE occupied by the Ground. In (48b), the semantics of *ba …dā* suggests the notion of a Figure moving across an open area. Contrary to *banāw* in (48a), *ba …dā* does not suggest an inner side of the Ground. That is, the Ground is not conceived of as a bounded entity or area, but rather an open passage or a point in a path. The position of the adpositional elements shown in (48a-b) in a P projection can be diagrammed as in (49a-b), respectively. Again, I adopt the general structure I proposed in chapter 2 and also the idea that the clitic *-dā* is a PLACE head. The DP *bākhaka* 'the park' starts out as complement to *-dā* but then moves to its specifier position.

(49) a.





Other Route Relators are exemplified in (50a-c):

(50) a. badawr-ī bākh-aka-dā sūřā-n-awa
around-EZ park-DEF-PLACE go.PST-3PL-again
'They went around the park.'

b. badrezhāy-ī řūbār-aka-dā řā-m-kird
along-EZ river-DEF-PLACE PRE-1SG-do.PST
'I ran along the river.'

c. batanīsht māł-yān-dā řoisht-im
beside house-POSS.3PL-PLACE go.PST-1SG
'I went beside their house.'

In (50a), *badawrī* 'around' expresses the notion of a Figure moving at the outer side of a Ground in a circular manner. In (50b), *badrezhāyī* 'along' denotes the Figure's movement by the side of the Ground *řūbāraka* 'the river' in a more or less straight line. The same is true for *batanīsht* 'beside'. The Figure moves by the side of the Ground. In the cases of *badawrī* 'around', *badrezhāyī* 'along' and *batanīsht* 'beside', the Figure does not undergo a transition from a specific phase to another. Its path is rather at an outer side of the Ground, and the latter has a reference function only. The linear structures of the PPs in (50a-c) can be illustrated as in (51a-c), respectively. For

simplicity, I apply the trace theory to represent the movement of the DP Ground to a position before the PLACE element.

(51) a. [$_{\text{RelPATHP}}$ *ba* [$_{\text{RelPLACEP}}$ Ø [$_{\text{AxPartP}}$ *dawr* [$_{\text{KP}}$ *-ī* [$_{\text{DP}t}$ *bākhaka* [$_{\text{PLACE}}$ *-dā* [t_{DP}]]]]]]]
b. [$_{\text{RelPATHP}}$ *ba* [$_{\text{RelPLACEP}}$ Ø [$_{\text{AxPartP}}$ *drezhāy* [$_{\text{KP}}$ *-ī* [$_{\text{DP}t}$ *řūbāraka* [$_{\text{PLACE}}$ *-dā* [t_{DP}]]]]]]]
c. [$_{\text{RelPATHP}}$ *ba* [$_{\text{RelPLACEP}}$ Ø [$_{\text{AxPartP}}$ *tanīsht* [$_{\text{KP}}$ Ø [$_{\text{DP}t}$ *māłyān* [$_{\text{PLACE}}$ *-dā* [t_{DP}]]]]]]]

In each case in (51), *ba* is the Rel_{PATH} head, the second part of the P is an AxPart (e.g. *dawr* 'circle', *drezhāy* 'length' and *tanīsht* 'side') and *-dā* is the PLACE head (with the complement DP moving to Spec-PLACE).

Finally, *basar* 'over/across' and *bazher* 'under' are also used to denote Route Relators. They can be compared with their English counterparts *over* and *under*, but are not quite parallel to them. English *over* and *under* are analysed as locative Ps (my Place Relator) (see Gehrke 2008; Tungseth 2008), but when accompanying motion verbs, they can denote a locative and directional reading. As we saw above, Svenonius (2010) attributes the goal meaning of these Ps to a null TO element, which is licensed by the use of motion verbs. In contrast, Kurdish *basar* 'over/across' and *bazher* 'under' are inherently Route Relators and they only accompany motion verbs. They can be literally translated as 'by the upper side of' and 'by the lower side of', respectively. Illustrative examples are given in (52).

(52) a. basar pird-aka-dā řoisht-īn
over bridge-DEF-PLACE go.PST-1PL
'We went over the bridge.'
b. bazher pird-aka-dā řoisht-īn
under bridge-DEF-PLACE go.PST-1PL
'We went under the bridge.'

As mentioned earlier, none of these RouteRel adpositions implies orientation or delimitation of the Figure's path with reference to the Ground. In terms of the transitional characteristic, I have ignored Pantcheva's (2011) split between Transitive and Prolative adpositions for the English parallel data, because these Route Relators display different behaviour in terms of allowing time-frame and time-span adverbial

phrases. Similarly, in Kurdish the choice between these temporal phrases mostly depends on the VP. Consider:

(53) a. *ba/bo yak kātzhmer banāw bākh-aka-dā
in/for one hour through park-DEF-PLACE
řā-mān-kird
PRE-1PL-do.PST
'We ran through the park *in/for one hour.'

b. ba/*bo yak kātzhmer ba bākh-aka-dā tepař-īn
in/for one hour by park-DEF-PLACE cross.PST-1PL
'We went across the park in/*for one hour.'

c. ba/bo yak kātzhmer badawr-ī bākh-aka-dā
in/for one hour around-EZ park-DEF-PLACE
sūřā-n-awa
go.PST-3PL-again
'They went around the park in/for one hour.'

d. *ba/bo yak kātzhmer badrezhāy-ī řūbār-aka-dā
in/for one hour along-EZ river-DEF-PLACE
řā-m-kird
PRE-1SG-do.PST
'I ran along the river *in/for one hour.'

e. ba/*bo yak daqa batanīsht māł-yān-dā
in/for one minute beside house-POSS.3PL-PLACE
tepař-īm
cross.PST-1SG
'I passed by their house in/*for a minute.'

As shown in these examples, the use of *ba-* and *bo*-phrases is not quite helpful to show if a Route Relator is Prolative or Transitive because the grammaticality of either temporal phrase is based on its compatibility with the VP. For example, a VP headed by a verb such as *řākirdin* 'to run' is atelic, hence *bo*-phrases are allowed, as in (53a). In contrast, a VP headed by e.g. *tepařīn* 'to cross' allows a *ba*-phrase since it is telic, as in (53b). In addition, in cases such as (53c) both temporal phrases are allowed; with a *ba*-temporal phrase, the Figure moves around the Ground once only, and with a *bo*-temporal phrase, the Figure quite likely moves around the Ground more than once. On

this basis and as a way out of this dilemma, I disregard the split between Transitive and Prolative RouteRel elements.

3.7.4 *Interim summary*

Along section 3.7, I have examined the semantic and syntactic structure of different types of Path Relators as used in Kurdish. Close attention was given to the denotation of SourceRel in Kurdish. I have assumed that *la* is a homonymous element that can be used to mean 'in/at' or 'from'. I have shown that Kurdish has adpositional elements for the following types of Path Relators: Cofinal, Terminative, Approximative, Coinitial and RouteRel. Below is a summary of the characterisation of these elements in terms of the properties ±TRANSITION, ±ORIENTATION and ±DELIMITATION.

(54) a. *bo/-a* 'to': +T, +O, –D = Cofinal
b. *tākū* 'up to': +T, +O, +D = Terminative
c. *baraw* 'towards': –T, +O, –D = Approximative
d. *la* 'from': +T, +O, –D = Coinitial
e. *banāw* 'through', *ba…dā* 'across', *badawrī* 'around', *badrezhāyī* 'along', *balāī* 'along/by the side of', *batanīsht* 'beside', *basar* 'across/over', *bazher* 'under': +/–T, –O, –D = RouteRel

3.8 Arabic

In this section, I analyse the prepositional elements used in a path domain in Arabic, aiming to capture their typology, semantic and syntactic properties. The forms of the relevant adpositions will be cited from both MSA and IA. In MSA, there are only a few Ps that relate Figures to the three canonical points in a path: GoalRel, SourceRel and RouteRel. These are *'ilā/li-* 'to', *ḥatā* 'until/up to', *naḥwa* 'towards', *min* 'from', *'an* 'away from', *khilāl* 'through', *'abra* 'across' and *ḥawla* 'around'.[60] In IA, there are even fewer such Relators; these are *'il/li-* 'to', *'ilḥad* 'until/up to' and *min/m-* 'from' and some RouteRel elements. Due to the small number of Path Relators in IA, I will use

[60] Although in most of the Arabic references *naḥwa* 'towards' is not categorised as a true or semi-preposition except in Ryding (2005) who lists it among the semi-prepositions, I include it in this thesis since it behaves similar to prepositions in terms of allowing a DP complement.

MSA data mainly. The distribution of these Ps in MSA over the three canonical Path Relator types is given in table 3.2:

GoalRel	**SourceRel**	**RouteRel**
'ilā/li- 'to'[61]	*min* 'from'	*khilāl* 'through'
ḥatā 'until/up to'	*'an* 'away from'	*'abra* 'across'
naḥwa 'towards'		*ḥawla* 'around'

Table 3.2 Types of Path Relators in MSA

While *'ilā/li-* 'to', *ḥatā* 'until/up to', *min* 'from' and *'an* 'away from' are true prepositions, *naḥwa* 'towards', *khilāl* 'through', *'abra* 'across' and *ḥawla* 'around' are semi-prepositions (Badawi, Carter & Gully 2004; Ryding 2005). The elements listed within each of the columns, however, do differ in terms of specific properties and need further classification. Below I examine the Ps in table 3.2 in terms of Pantcheva's (2011) three properties (±TRANSITION, ±ORIENTATION and ±DELIMITATION) in an attempt to see how many types of Path Relators exist in Arabic.

3.8.1 *GoalRel in Arabic*

The Ps listed in the leftmost column in table 3.2, which includes *'ilā/li-* 'to', *ḥatā* 'until/up to' and *naḥwa* 'towards', belong to the type of Goal Relators. See the MSA examples below:

(55) a. waṣalat ʾakhīran ʾilā maḥaṭat al-metro
arrive.PST.F3SG finally to station DEF-metro
'At last she arrived at the metro station.' (arabiCorpus, Chicago)

b. mana'ū ʾaḥad al-mushaji'-īn mina an-nzūl li-
prevent.PST.3PL one DEF-fans from DEF-descending to-
al-mal'ab
DEF-stadium

[61] *'ilā* is a separable preposition, while *li-* is an inseparable form that is prefixed to its noun complement. There is not a specific difference between them, other than the former being probably more common in formal use than the latter.

‘They prevented one of the fans from descending into the stadium.’
(arabiCorpus, Ghad02)

c. taqa‘ ‘alā nahr za’īr ’ladhī yaṣil ḥatā
locate.PRS.3SG on river Zaire which reach.PRS.3SG up to
al-‘āṣimah kinshasa
DEF-capital Kinshasa
‘It is found on the river Zaire, which reaches up to the capital city Kinshasa.’
(arabiCorpus, Hayat97)

d. thuma ’itajaha naḥwa as-sayārah
then go.PST.M3SG towards DEF-car
‘He then went towards the car.’ (arabiCorpus, AhlamFawda)

The basic use of all these Path Relator Ps is to relate a Figure to the end point (the goal) of a path. Thus, they are all goal-oriented elements. Differences among them do exist, though, in terms of Pantcheva’s (2011) other properties: transition and delimitation. For example, *’ilā* and *li-* ‘to’, (55a-b), display the properties +T, +O and –D. That is, e.g. in (55a), the Figure (represented by *she*) is supposed to undergo a transition from one phase to another. However, *’ilā* and *li-* ‘to’ do not suggest the end point represented by the Ground *maḥaṭat almetro* ‘the metro station’ to be a termination of a path. Thus, they can be characterised as a Cofinal path type, in Pantcheva’s (2011) typology of path. The same is true for the IA parallel elements *’il/li-* ‘to’. Thus, they can be taken as Cofinal prepositional elements.

ḥatā ‘until/up to’, (55c), on the other hand, involves a Figure’s transition also, but contrary to *’ilā* and *li-* ‘to’, the end point forms the termination of the movement. That is, the Figure’s path ends at the Ground identified. For example, in (55c), the DP Ground *al‘āṣimah kinshasa* ‘the capital city Kinshasa’ is taken as the upper boundary of the Figure’s path. Accordingly, *ḥatā* ‘until/up to’ can be said to display the properties +T, +O and +D, and can thus be considered a Terminative element. In IA, *’ilḥad* ‘until/up to’ is used and again it is similar to *ḥatā* ‘until/up to’ in all the properties associated with *ḥatā*. Interestingly, the element *’ilḥad* is made up of the preposition *’il* ‘to’ and *ḥad* ‘end’, literally meaning ‘to the end’.

Finally, *naḥwa* ‘towards’ is non-transitional and non-delimited. The PP *naḥwa assayārah* ‘towards the car’ in (55d) neither suggests a transition of the Figure’s

movement from one phase to another nor delimits its movement in the path. *naḥwa* is thus –T, +O and –D and exemplifies an Approximative element in Pantcheva (2011).

3.8.2 *SourceRel in Arabic*

The Path Relator elements listed in the middle column in table 3.2 (that is, *min* 'from' and *'an* 'away from') relate a Figure to the starting point or the source of a path. Thus, they are source-oriented. In terms of transition and delimitation, *min* 'from' displays the same properties as its corresponding GoalRel elements *'ilā* and *li-* 'to'. It suggests a transition of a Figure from the source phase to another phase; besides the Ground is not set as the lower boundary of the Figure's movement. Accordingly, *min* 'from' is a Coinitial element associated with the properties +T, +O and –D. An illustrative example is:

(56) lan takhruǰī min al-beit al-yawm
not go.PRS.F2SG from DEF-house DEF-today
'You will not go out of the house today.' (arabiCorpus, Madbuli)

As to *'an* 'away from', it is similar to *min* 'from' in terms of being source-oriented and suggesting a non-delimitation. However, it differs with respect to transition. Contrary to *min* 'from', *'an* does not involve a Figure's transition. This entails that *'an* is –T, +O and –D, exemplifying thus the Recessive type in Pantcheva's (2011) typology of path.[62] In IA, there is only one source-oriented Path Relator P, which is *min/m-* 'from'; *min* is a non-separable form, while *m-* is a separable form. Both are of the Coinitial type.

3.8.3 *RouteRel in Arabic*

I turn now to the elements listed in the third column under Route Relator type. These are *khilāl* 'through', *'abra* 'across' and *ḥawla* 'around'. Example sentences with these Ps are:

[62] *'an* is also used to denote distance, occurring with non-motion verbs, as in *yajlisu ba'īdan 'an-hum* 'He is sitting far away from them'.

(57) a. ʾamshī khilāl ad-dār
walk.PRS.1SG through DEF-house
'I walk through the house.' (arabiCorpus, Aghani)

b. ʾiṣṭaḥaba-nī ʿabra rudhāt al-qism
accompany.PST.M3SG-1SG across lobbies DEF-department
'He accompanied me across the lobbies of the department.' (arabiCorpus, Chicago)

c. ʾinḍmamtu ʾilā al-jalsīn ḥawla ar-radyo
join.PST.1SG to DEF-sitting around DEF-radio
'I joined those sitting around the radio.' (arabiCorpus, Miramar)

All three relate a Figure to the intermediate points involved in a path; besides, all three lack orientation and delimitation. With respect to the transitional property, *khilāl* 'through' suggests a transition of the Figure from a position outside the Ground to a position inside it and then out of it. Therefore, I assume that it displays transition. The same applies to *ʿabra* 'across'. The difference between them is in terms of the Ground dimensional type; it is bounded in the case of *khilāl* and unbounded in the case of *ʿabra*. As to *ḥawla* 'around', the Figure does not undergo a transition as it occupies the whole middle sets of points of the path. Thus, it can be said to be a non-transitional element. Accordingly, while *khilāl* and *ʿabra* can be classified as Transitive elements, *ḥawla* can be a Prolative element. However, applying the test of temporal modification reveals different behaviours in terms of the association of these Ps with a transitional property. For example, *khilāl* occurs with time-span adverbial phrases such as *liniṣfi sāʿa* 'for half an hour', but not time-frame phrases such as *fi niṣfi sāʿa* 'in half an hour', (58a-b); *ʿabra* does not allow either time phrases; and *ḥawla* seems to allow both types of time phrases provided the verb is atelic, (59a-b).[63]

(58) a. sa-ʾasīru khilāl al-malʿab li- niṣfi sāʿa
will-walk through DEF-stadium for half hour
'I will walk through the stadium for half an hour.'

b. #sa-ʾasīru khilāl al-malʿab fī niṣfi sāʿa
will-walk through DEF-stadium in half hour
'I will walk through the stadium in half an hour.'

[63] Thanks to the native speakers whom I consulted on this issue.

(59) a. sa-ʾarkuḍu ḥawla al-malʿab li- niṣfi sāʿa
will-run around DEF-stadium for half hour
'I will run around the stadium for half an hour.'

b. sa-ʾarkuḍu ḥawla al-malʿab fī niṣfi sāʿa
will-walk around DEF-stadium in half hour
'I will run around the stadium in half an hour.'

It is worth mentioning that the native Arabic informants I consulted did not all agree about the acceptability of these sentences and no unanimous agreement was gained. To avoid drawing premature conclusions, I will disregard the two subtypes of Route suggested in Pantcheva (2011) and classify *khilāl, ʿabra* and *ḥawla* as Route Relator Ps. The same analysis is true for *khilāl, ʿabra* and *ḥawla* in IA, although they are not very commonly used. Instead, other ways are usually used to express their meanings and uses. For example, the meaning of *khilāl almalʿab* 'through the stadium' can be expressed by *ʾb nuṣ almalʿab* 'in the middle of the stadium' and *ḥawla almalʿab* 'around the stadium' is usually expressed as *dāyr madāyr almalʿab* 'at the outer circle of the staudium'.

3.8.4 *Interim summary*

In this section, I examined the Arabic Relators used in a path domain, e.g. *ʾilā/li-* 'to', *ḥatā* 'until/up to', *naḥwa* 'towards', *min* 'from', *ʿan* 'away from', *khilāl* 'through', *ʿabra* 'across' and *ḥawla* 'around'. Examining the morphological structure of these elements has not revealed a rich or complex syntactic structure. That is, most of the path elements are mono-morphemic and encode a single terminal node in the Rel_{PATH} projection, which is the Rel_{PATH} head. Furthermore, in the spirit of Pantcheva's (2011) typology of path, I have shown that MSA has lexical representatives of six path types identified in Pantcheva's (2011) typology of path Ps. In IA, there are only four types. These are summarised in (60) for MSA and (61) for IA:

(60) a. *ʾilā/li-* 'to': +T, +O, –D = Cofinal
b. *ḥatā* 'until/up to': +T, +O, +D = Terminative
c. *naḥwa* 'towards': –T, +O, –D = Approximative
d. *min* 'from': +T, +O, –D = Coinitial

e. *ʻan* ‘away from’: –T, +O, –D = Recessive

f. *khilāl* ‘through’, *ʻabra* ‘across’ and *ḥawla* ‘around’: +/–T, –O, –D = RouteRel

(61) a. *ʾil/li-* ‘to’: +T, +O, –D = Cofinal

b. *ʾilḥad* ‘until/up to’: +T, +O, +D = Terminative

c. *min/m-* ‘from’: +T, +O, –D = Coinitial

d. *khilāl* ‘through’, *ʻabra* ‘across’ and *ḥawla* ‘around’: +/–T, –O, –D = RouteRel

3.9 Combinations of Rel_{PATH} and Rel_{PLACE}

One last issue to be discussed in this chapter is that of Rel_{PATH}-Rel_{PLACE} combinations. For this purpose, I focus on data from Kurdish and Arabic. I will show that in Kurdish, such combinations are very restricted. For example, for a Rel_{PLACE}P and Rel_{PATH}P to co-occur, the head of the former should be covert. And in Arabic I will show that such combinations are restricted to *ʾilā/li-* ‘to’ and *min* ‘from’. Consider examples below from Kurdish:

(62) a. bo (*la) qutābkhāna
to at school

b. tākū (*la) park-aka
up to at park-DEF

(63) a. bo (*la) sar mez-aka
to at above table-DEF

b. bo (*la) nāw zhūr-ek
to at inside room-INDF

The PPs in all these examples are made up of a Rel_{PATH} P and a Rel_{PLACE} P. The first observation to be made is that Rel_{PLACE} Ps from the simple class (i.e. *la* ‘in/at’) cannot co-occur with lexicalised Rel_{PATH} elements, (62a-b). This in turn leads to the second observation which is that the first element in compound Ps (*la* ‘in/at’) cannot be present phonologically with a lexiclised Rel_{PATH}P as shown in (63a-b). This shows that the AxParts which represent the second element of the compound P class, here *sar* and *nāw*, are sufficient to get the semantics of the missing locative element to work. In brief, in Kurdish, Rel_{PATH} Ps can co-occur with Rel_{PLACE} Ps from the compound class only, provided that the first element of the compound Ps is dropped. Syntactically, in Rel_{PATH}-

Rel_{PLACE} combinations, Kurdish spatial adpositions demonstrate the following restrictions:

- The Rel_{PLACE} element under the Rel_{PLACE} head is always null
- The AxPart element under the AxPart head is always lexicalised

In Arabic, specific restrictions also hold in terms of Rel_{PATH}-Rel_{PLACE} combinations. Except for *'ilā/li-* 'to' and *min* 'from', Path Relators do not allow Rel_{PLACE} or AxPart elements. *'ilā/li-* 'to' allow lexicalised AxParts only, while *min* 'from' allows lexicalised Rel_{PLACE} and AxPart in their P projection (one exception being **min fī* 'from in'). See examples below, from MSA:

(64) a. 'ilā dākhl maḥaṭat al-metro
to inside station DEF-metro
'to inside the metro station'

b. 'ilā waṣaṭ al-madīnah
to middle DEF-city
'to the middle of the city'

(65) a. min 'alā at-tal
from on DEF-hill
'from the top of the hill'

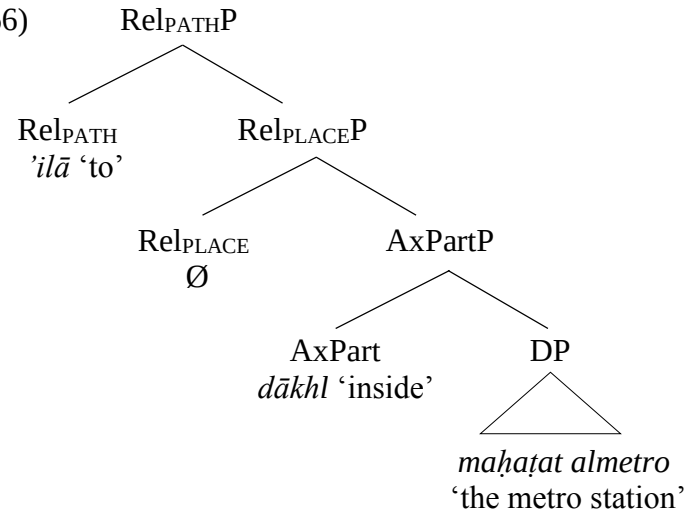
b. min fawq at-tal
from above DEF-hill
'from the top of the hill'

c. min khārj al-madīnah
from outside DEF-city
'from outside the city'

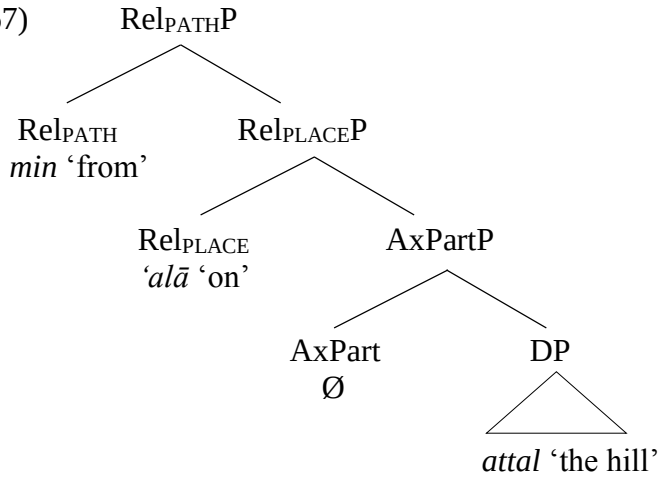
In (64a-b), *'ilā* lexicalises the Rel_{PATH} functional head. The elements *dākhl* 'inside' and *wasaṭ* 'middle' are semi-prepositions and they lexicalise the AxPart head. In (65a-b), *min* 'from' is the Rel_{PATH} element, while *'alā* 'on' and *fawq* 'above' are under the Rel_{PLACE} node. The difference between the two is that *'alā* 'on' is a true preposition and *fawq* is a semi-preposition. In (65c), *khārj* 'outside' is a lexicalisation of the AxPart

element. I summarise by presenting the syntactic structures of the examples in (64a) and (65a) as in (66) and (67), respectively.

(66)



(67)



3.10 Summary and Conclusion

In this chapter, I defined the notion of path and identified its components. Path represents a set of points and involves a direction, a starting point, an end point, some middle points and a moving object. The availability of these components varies among relevant adpositions. I also reviewed the semantic analysis of adpositions such as English *to/from/through* and their equivalents across languages in studies such as Nam (1995, 1996), Fong (1997, 2001), Zwarts (2005) and Romeu (2014). I reached the conclusion that these adpositions function as Relators in a path domain and referred to them as Rel$_{PATH}$ in the P projection. These adpositions relate the Figure to a specific point of a path. On this basis I rejected the idea that these adpositions denote path or direction (excepting GoalRel adpositions, which denote direction).

Pantcheva's (2011) typology of path adpositions was reviewed and adopted to account for the types of Path Relators available in English, Kurdish and Arabic. She identifies eight path types on the basis of three properties: ±TRANSITION, ±ORIENTATION and ±DELIMITATION. I applied these three properties to determine the typology of Kurdish and Arabic Rel_{PATH} elements. Kurdish lexicalises five Rel_{PATH} types; these are Cofinal, Terminative, Approximative, Coinitial and RouteRel. For Arabic, I examined data from MSA and IA. MSA has lexical representations of Cofinal, Terminative, Approximative, Coinitial, Recessive and RouteRel, whereas IA has examples of Cofinal, Terminative, Coinitial and RouteRel. I classified the route-denoting elements in English, Kurdish and Arabic as RouteRels, ignoring the split suggested by Pantcheva (2011) between Transitive and Prolative Routes. This was due to the underspecification of several RouteRel adpositions with regard to transition and non-transition in these languages.

Finally, I examined combinations of Rel_{PATH}P and Rel_{PLACE}P in Kurdish and Arabic. Data from these languages show restrictions in terms of the availability of favored vs. disfavored spatial elements in a complex syntactic structure. For example, a lexicalised Rel_{PATH} and a lexicalised Rel_{PLACE} is not allowed in Kurdish. When a Rel_{PATH} is used, the Rel_{PLACE} node should be null (see the examples in (62) and (63)). Similarly, in Arabic, the Rel_{PATH} element *'ilā/li-* 'to' does not allow a lexicalised Rel_{PLACE} node (see the structure in (66)).

Chapter 4. Event Structure and Motion Verbs

4.1 Introduction

In chapters 2 and 3, I examined and defined the syntactic and semantic role of adpositions used in the place and path domains, respectively. In this chapter, I aim at examining the syntactic and semantic properties of events and, more specifically, motion verbs. The analyses carried out in this chapter will help pave the way to a better understanding of the combinations made up of spatial PPs and motion VPs, which will be the focus of chapter 5. The main aims of this chapter are providing a semantic-syntactic analysis of motion events and examining and providing a binary classification of motion verbs in English, Kurdish and Arabic.

Developing a semantic-syntactic analysis that maps an event structure into a phrase structure has been the focus of many researchers in the last two decades (see e.g. Ritter & Rosen 1998; Borer 1998; Rappaport Hovav & Levin 2001; Gehrke 2008; Travis 2010). In this chapter I propose a semantic-syntactic analysis which combines insights from Dowty's (1979) and Rothstein's (2004) semantic approaches and Ramchand's (2008) syntactic approach. I claim that the semantic components of an event structure can be reflected in certain functional heads in a VP extended structure. More precisely, I argue that the BECOME event involved in Accomplishment and Achievement (=Pustejovsky's Transition) events is parallel to ResP. The proposal made provides a unified treatment of different types of motion events such as *Tahir entered the castle, Tahir went to the castle* and *Tahir ran into/out of the castle*.

Verbs form the core in the structure of motion events. Therefore, any account of events in general has to refer to verbs, as is done in work by e.g. Vendler (1957, 1967), Dowty (1979), Bach (1981, 1986), Verkuyl (1993), Pustejovsky (1991), Kenny (2003), Ramchand (2008). Most of these studies classify and analyse verbs syntactically and semantically. In terms of motion verbs, the two main classes identified cross-linguistically are verbs which denote an activity and verbs which denote a direction or change of location (cf. Vendler 1957; Ikegami 1969; Levin 1993; Ramchand 2008). Following Ramchand's (2008) first-phase syntax of verbs, I provide a binary classification of motion verbs according to their association with the Res(ult) feature: [Proc] Vs and [Proc, Res] Vs. The ideas discussed and proposed will be extended to

parallel data in Kurdish and Arabic in an attempt to examine the syntactic and semantic properties of VPs that include such motion verbs in these languages. In particular, data from Kurdish reveals challenging issues to the analyses as it has composite verbs that involve verbal and non-verbal elements.

The structure of the chapter is as follows. In section 4.2, I review some relevant studies on event structure and the classification of verbal predicates and/or verbs. A semantic-syntactic analysis of motion events is also proposed and argued for at the end of the section. In section 4.3, following proposals in Ramchand (2008), I present a V projection that encodes motion. I will closely examine the Res feature and its lexicalisation in analyses by Ramchand (2008) and Romeu (2012). More discussion of the Res feature is presented in section 4.4, where I distinguish it from telicity and Path/Rel_{PATH}. In section 4.5, based on a set of two diagnostics I classify motion verbs in English into two main classes: [Proc] and [Proc, Res] Vs. I discuss their semantic and syntactic properties, highlighting the types of DP complements allowed after each class. Sections 4.6 and 4.7 deal with the semantics and syntax of similar classes of motion verbs in Kurdish and Arabic, respectively. Finally, section 4.8 closes off the chapter with a summary and conclusion.

4.2 Event Structure and Verbs

In this section, for the purpose of setting the scene, I will briefly outline the conventional view of events and then review its types according to several scholars. Various approaches and hypotheses have been put forth in the literature to account for the semantics and syntax of event structure (e.g. Dowty 1979; Jackendoff 1973, 1983, 1990; Pustejovsky 1991; Verkuyl 1993; Travis 1994; Folli & Ramchand 2005; Zubizarreta & Oh 2007; Ramchand 2008). The term *event* is usually used to describe the verbal component of a sentence, especially to refer to those VPs which involve a process or a "process and a telic point" (Arsenijević 2006: 2) or those VPs which comprise Vendler's (1957, 1967) Accomplishments and Achievements (e.g. Pustejovsky 1991; Neeleman & van de Koot 2002).

The term *event* is also used as a contrast to those VPs which involve no process or dynamicity, which are usually referred to as *states* (Jackendoff 1983; Fong 2003; Ramchand 2008). It should be noted, however, that the term *event* is also used as a

synonym to Bach's (1986) term *eventuality* to cover the two main types: *events* and *states* (cf. e.g. Vendler 1957, 1967; Dowty 1979; Jackendoff 1983; Pustejovsky 1991; Arsenijević 2006; Travis 2010). For example, Arsenijević (2006: 3) claims that even simple stative sentences such as *Mary slept, Lions have manes,* etc. describe some kind of eventuality. In this thesis, I focus on motion events that involve motion (dynamic) verbs, such as *run, walk, jump, fall, push, put, kick, swim, go, enter,* etc.

4.2.1 *Vendler (1957, 1967)*

Vendler (1957, 1967) identifies four types of events. These are: States, Activities, Accomplishments and Achievements.[64] These types are mainly identified on the basis of the lexical aspectual properties of verbs.[65] Featuring telicity, allowing progressiveness and occurrence with certain time adverbials are the crucial aspects considered in Vendler's classification. Table 4.1 displays Vendler's four types and their inherent properties in terms of dynamicity, telicity, progressiveness and the type of temporal phrases each allows. A few representative example predicates from English are also provided; most of them are cited or adapted from Dowty (1979: 54).

Event Type	**Lexical aspectual properties**	**Examples**
States	non-dynamic, atelic, non-progressive, *for*-phrases	*be happy, know the reality, have, love*
Activities	dynamic, atelic, progressive, *for*-phrases	*drink water, jump, walk, work, write*
Accomplishments	dynamic, telic, progressive, *in*-phrases	*run a mile, draw a circle, drink a glass of water, make a chair*
Achievements	(non-)dynamic, telic, non-progressive, *in*-phrases	*recognise the murderer, reach a solution, arrive, collapse, find, lose, die*

Table 4.1 Vendler's (1957) typology of events

[64] Throughout the thesis, I capitalise the terms that refer to types of events, e.g. Vendler's State, Activity, Accomplishment and Achievement, and Pustejovsky's (1991) State, Process and Transition.

[65] In the literature on the inner aspectual nature of verbs, the term Aktionsart is commonly used. For details on the notion of Aktionsart see (e.g. Declerck 1979; Dowty 1979; Parsons 1990; Verkuyl 1989, 1993; Pustejovsky 1991; Higginbotham 2000; Kenny 2003).

As can be seen the main difference between State events and the rest lies in dynamicity. State events do not involve dynamic verbs, while Activities and Accomplishments are usually associated with dynamic verbs, and Achievements can be of both types, although mostly involve some type of dynamicity. As Jackendoff (1991: 39) and others have pointed out, Vendler's classes relate to 'entire sentences rather than verbs'. This can be seen from the fact that there are verbs which seem to show dual membership of the classes. For example, the verbs *run, walk* and *eat* can denote Activities, (1a), or Accomplishments, (1b). Also there are VPs which can be classified as either an Accomplishment or an Achievement as in (1c). The examples below are adapted from Dowty (1986: 39, 42).

(1) a. She is running/walking/eating. [Activities]
b. She ran a mile/walked to the castle/ate an orange. [Accomplishments]
c. She built a sand castle. [Accomplishment/Achievement]

Vendler's typology of events has been expanded in several later studies.[66] For example, some studies focused on decomposing these event types semantically (e.g. Dowty 1979; Jackendoff 1990; Rothstein 2004), some works attempted to classify large numbers of verbs (e.g. Ikegami 1969; Levin 1993; Ramchand 2008), and yet others have focused on the syntactic structure of events (e.g. Ritter & Rosen 1998; Ramchand 2008; Travis 2010). Within these three main areas, several types of arguments and approaches have been put forward and are still being debated, focusing, for example, on how much mapping there is between the semantics and syntax of event structures and what contribution elements from the verbal domain and the non-verbal domain make to the formation of an event structure (see e.g. Harley 1995; Folli 2002; Arsenijević 2006; Gehrke 2008; Ramchand 2008; Travis 2010). In this thesis, I will follow those approaches which provide more promising analyses and lead to satisfactory results in the analysis of event structure. As mentioned in the introduction, my focus will be mainly on motion verbs, examining closely two classes of them: those denoting activity and those suggesting a change of location. The two types are distributed among the non-state event classes in Vendler's typology.

[66] Other classifications of events have also been put forward (see e.g. Mourelatos 1978; Bach 1981, 1986; Moens 1987; Verkuyl 1993; Kenny 2003).

4.2.2 *Dowty (1979)*

Dowty (1979) associates Vendler's (1957, 1967) four event classes (States, Activities, Accomplishments and Achievements) with a set of atomic predicates, such as DO, CAUSE and BECOME.[67] State events are associated with stative predicates, Activities with stative and DO predicates, Accomplishments involve, in addition to DO, the predicates CAUSE and BECOME, and Achievements are associated with BECOME. The formulas for the four event types according to these predicates are given in (2), cited from Dowty (1979: 123-125). The notations used in (2) works as follows: α_i and β_i are arbitrary individual terms and π_n and ρ_n stand for arbitrary *n*-place (stative) predicates.

(2) a. Statives: π_n (α_1,…,α_n). (e.g. John knows the answer)
b. Activities: DO(α_1, [π_n (α_1,…,α_n)]). (e.g. John is walking)
c. Achievements: BECOME [π_n (α_1,…,α_n)]. (e.g. John discovered the solution)
d. Accomplishments: [[DO(α_1, [π_n (α_1,…,α_n)])]CAUSE[BECOME[ρ_m(β_1,…, β_m)]]]. (e.g. John broke the window)

Among them, Accomplishment events show most complexity since they involve three atomic predicates: DO, CAUSE and BECOME. To exemplify, compare:

(3) a. Sara melted the ice. [Accomplishment]
b. Sara reached the top. [Achievement]

Following Dowty (1979), the logical structure of (3a-b) is as in (4a-b), respectively:

(4) a. [[Sara melted ice] CAUSE [BECOME [the ice is melted]]]
b. [[Sara reached the top] [BECOME [Sara is at the top]]]

[67] For other semantic decompositions of Vendler's classes see Jackendoff (1983, 1990), Parsons (1990) and Pustejovsky (1991). The primitives CAUSE and BECOME were first introduced by McCawley (1968) in his lexical decomposition of the verb *kill*. In a similar manner to Dowty (1979), Jackendoff (1983, 1990) identifies a number of functions within the verbal domain in his theory of conceptual semantics. These are BE, GO, STAY and CAUSE. The availability of these functions is determined by the type of the verb, the VP and the secondary non-verbal predicate. For example, BE is available with States, GO with Activities, CAUSE with Accomplishments.

In (4a), there is an activity of melting ice, which as a result of Sara *causing* the ice to melt, *became* liquid. So there is a DO, a CAUSE and a BECOME element. In (4b), there is an activity of reaching a location, which can be of any form, walking/running/cycling/etc.; at the end of it, Sara *becomes* at that location. Here, there is a BECOME element only, but not a CAUSE element, because Sara did not cause anything for her to 'become at the top'. A very clear example is the difference between *kill* (Accomplishment) and *die* (Achievement). By killing someone, a person causes him/her to die and as a result he/she becomes dead, whereas in dying, the final state is death. No one can cause someone dead to die again, therefore the CAUSE element is not available or necessary.[68] Finally, Dowty (1979) distinguishes between the BECOME event involved in Accomplishment events and the BECOME event in Achievement events. In the former, BECOME suggests an extended event, while in the latter, the BECOME suggests an instantaneous state of change.

In later work, Dowty's (1979) atomic predicates have been extended semantically and syntactically, for example by applying them to lexical representation and argument structures. The models I will review next are Pustejovsky (1991) and Rothstein (2004) which are lexically and semantically-oriented and Ramchand (2008) who provides a syntactic decompositional analysis.

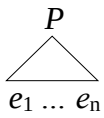
4.2.3 *Pustejovsky (1991)*

Pustejovsky (1991) collapses Vendler's four classes into three: State, Process (Vendler's Activity) and Transition (Vendler's Accomplishment and Achievement). Pustejovsky (1991) argues that verbs in natural language belong to one of these three event types. Their structural representations and examples are given in (5a-c), cited from Pustejovsky (1991: 40).

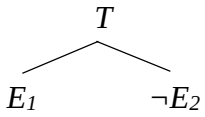
(5) a. State (*S*): a single event, which is evaluated relative to no other event, e.g. *be sick, love, know*.

[68] This interpretation of *kill* was first put forward in McCawley (1968).

b. Process (*P*): a sequence of events identifying the same semantic expression, e.g. *run, push, drag*. ($e_1 \ldots e_n$ represents an event *e* that includes a sequence of events).



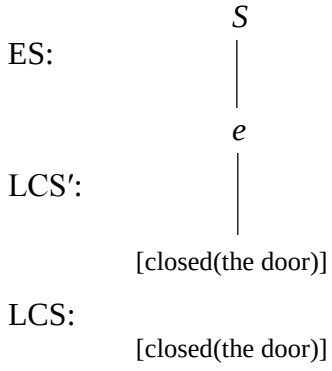
c. Transition (*T*): an event identifying a semantic expression which is evaluated relative to its opposition (where *E* is a variable for any event type), e.g. *give, open, build* and *destroy*.



In his verbal decomposition, Pustejovsky (1991) assumes a level of Lexical Conceptual Structure (LCS) which maps into another level, called LCS′ (cf. Jackendoff 1983; Levin & Rappaport 1988). "An LCS is a lexical semantic representation which takes the form of a predicate decomposition" (Pustejovsky 1991: 40). As to LCS′, it involves a set of predicates such as *act*(*x, y*), *at*(*x, y*) and *on*(*x, y*) which represent the specific components or participants involved in the event structure (ES). At the LCS′ level the event can be divided into two subevents with one subevent causing the other. To elaborate, I cite examples from Pustejovsky (1991: 41) with their lexical semantic structures. First, an example of a State:

(6) a. The door is closed.

b.

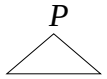


The sentence in (6a) refers to one single state that the door is in the state of being closed. There are no other events or subevents involved in the verbal predicate. Thus, its event structure will be the one in (6b). Consider next an example of a Process event.

(7) a. Mary ran.

b.

ES:



LCS′: [run(*m*)]

LCS: [run(*m*)]

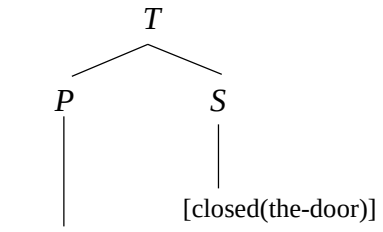
(Pustejovsky 1991: 42)

As shown, the event denotes a process of running or more specifically a sequence of the running activity. Hence, the structure in (7b). Finally, Pustejovsky (1991) argues against a distinction between Accomplishment and Achievement (cf. Vendler 1967; Dowty 1979; Rothstein 2004). He states that the only difference that distinguishes these two event types is the availability of an agent in the event. More precisely if an event does not involve an agent, then it is an Achievement, such as *the door closed*. In contrast, if there is an agent, then it is an Accomplishment such as *John closed the door*.[69] The LCS representations of these two exemples are given in (8) and (9), respectively:

(8) a. The door closed. (Pustejovsky 1991: 41)

b.

ES:



LCS′:

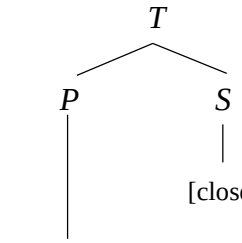
LCS: become([closed(the-door)])

[69] Verkuyl (1993) also collapses Accomplishments and Achievements under one class and refers to them as events. Verkuyl believes that both of these classes have a culmination point, but the process of reaching this point differs in each case. For Accomplishments the process may take a longer time, while for Achievements it is instantaneous.

(9) a. John closed the door. (Pustejovsky 1991: 41)

b.

ES:



LCS′: [closed(door)]

[act(*j*, the-door) & ¬closed(the-door)]

LCS: cause([act(*j*, the-door)], become([closed(the-door)]))

For Pustejovsky (1991), the availability of an agent (represented by the predicate *act*) entails the existence of a cause operator (cf. Dowty's (1979) CAUSE) which signals the initial subevent of an event structure. More importantly, in Pustejovsky's (1991) model, a Transition (*T*) event is composed of a Process (*P*) event and a State (*S*) event. The *T* can involve a cause and a become operator (a causative process/an Accomplishment), e.g. *John closed the door* or a become operator only (an inchoative process/an Achievement), e.g. *the door closed*. Pustejovsky's (1991) fusion of Accomplishment and Achievement under the Transition event will be adopted in the semantic-syntactic analysis proposed later.

4.2.4 *Rothstein (2004)*

Drawing heavily on Vendler's (1957, 1967) typology of events and Dowty's (1979) set of atomic predicates, Rothstein (2004) puts forward a particular approach to account for the semantics of event structure. I focus on her analysis of Accomplishment events only, which will be adopted in the semantic-syntactic analysis I propose. Rothstein (2004) proposes that an Accomplishment is the summing of an activity and a culmination, which must be linked via an incremental process (a BECOME process). Rothstein (2004: 106) takes this incremental process to be parallel to Dowty's (1979) BECOME event, basically because both Dowty's Accomplishment BECOME and the incremental process are extended in nature. Below are the main semantic notions proposed in Rothstein (2004) to account for the semantics of Accomplishments.

Rothstein's Accomplishment consists of "an activity event and an extended BECOME process, which is incremental" in nature (Rothstein 2004: 106). That is, BECOME events are incremental events that consist of individuable parts which are linearly

ordered by the incremental chain, as defined in (10). Besides, each of these parts has a distinguishable upper bound referred to as culmination, (11). More importantly, when a BECOME event combines with an activity, the former imposes a developmental structure on the activity (Rothstein 2004: 108). This is done through an incremental relation, defined in (12), which relates individuable parts of the BECOME event to parts of the activity event.[70]

(10) Incremental chain:[71]

Let e be a BECOME event.

An incremental chain C(e) is a set of parts of e such that:

1. the smallest event in C(e) is the initial bound of e
2. for every e_1,e_2 in C(e) $e_1 \sqsubseteq e_2$ or $e_2 \sqsubseteq e_1$
3. $e \in C(e)$

(Rothstein 2004: 107)

(11) The culmination is the final minimal event in an incremental process. It is the event which is the final part of the BECOME event; the upper bound of the BECOME event. The argument of the culmination event is the argument of the BECOME event (i.e. the affected object or theme).

(Rothstein 2004: 106)

(12) Incremental relations:

Let e_1 be an activity, e_2 be a BECOME event, and $C(e_2)$ be an incremental chain defined on e_2.

$INCR(e_1,e_2,C(e_2))$ (e_1 is incrementally related to e_2 with respect to the chain $C(e_2)$) iff:

there is a contextually available one-one function μ from $C(e_2)$ onto $PART(e_1)$ (the set of parts of e_1) such that:

for every $e \in C(e_2)$: $\tau(e)=\tau(\mu(e))$.

(Rothstein 2004: 108)

[70] See Rothstein (2004: 108-109) for a graphic representation of an incremental event (or BECOME event) and Accomplishment event structure.

[71] In the interpretation of the symbols: $\sqsubseteq$ indicates a squared subset of or equals, $\in$ means 'element of', and τ is a temporal trace function.

According to Rothstein, the BECOME event is a "change of state … which happens to the theme participant in the activity event … while the activity event is going on" (2004: 108-109). This BECOME event consists of a set of individuable parts which form an incremental chain and progresses gradually through a specific amount of time. Moreover, the culmination of an Accomplishment represents the telic point reached at in the end and, more specifically, it is "determined by what happens to its theme" (Rothstein 2004: 77). For example, *Mary built a house* is an Accomplishment event that consists of the unstructured activity of building and a culmination. These two components are linked via a BECOME event which involves an incremental structure. The BECOME event of this event is BECOME-BUILT and it culminates when a house (the theme) "becomes built". Similarly, the BECOME event of *Mary ate a sandwich* will be BECOME-EATEN that culminates at the point when the sandwich "becomes fully eaten". It is crucial that the theme is shared by the BECOME event and the culmination since the latter forms part of the former. This theme is referred to as the "incremental argument or incremental theme" (Rothstein 2004: 107).

Finally, to derive an Accomplishment Rothstein (2004) suggests that a type-shifting operation is involved which shifts e.g. an Achievement or Activity event into an Accomplishment.[72] For example, an Accomplishment can be derived structurally from an Activity when a resultative predicate (e.g. a PP or AP) is added. The resultative predicate introduces the culmination of the event and it triggers an operation of aspectual shift that

"introduces an incremental relation INCR which associates the activity e_1 with an incremental BECOME event e_2 through a function μ which maps each element in a linearly ordered set of parts of e_2 onto that part of e_1 which has the same run time"
(Rothstein 2004: 131).

In other words, it is through the resultative predicate which through providing culmination information and triggering a shifting process that a BECOME event and μ function are constructed. For example in *Mary hammered the metal flat* the VP *hammered the metal* is an unstructured activity event and the AP headed by *flat*

[72] Other proposals on how an activity and a secondary predicate can be combined to derive a syntactic Accomplishment can be found in work by von Stechow (1995, 1996), Doetjes (1997), Kratzer (2005) and Beck (2005).

represents the resultative predicate which when added to the VP an Accomplishment event is expressed. Finally, it is worth mentioning that Achievements also include an activity and a BECOME event in Rothstein (2004). The difference between the BECOME in Accomplishments and that in Achievements is in line with Dowty's (1979) and Verkuyl's (1993) analyses. It is extended in Accomplishments but instantaneous in Achievements.

In sum, for Rothstein (2004) BECOME is a crucial ingredient of lexical and syntactically derived Accomplishments. An Accomplishment is composed of an activity event and a BECOME event combined by an incremental relation. Moreover, the upper bound of the BECOME event is the culmination of the incremental chain with which the activity event is associated.

4.2.5 *Ramchand (2008)*

Ramchand (2008) uses a Minimalist syntactic system, which she refers to as first-phase syntax, to decompose events or more precisely VPs. Her VP extended structure is based on the lexical entries of the verbs and their ability to lexicalise a set of syntactic projections which correspond to subevental predications. She identifies three subevents: "a causing subevent, a process-denoting subevent and a subevent corresponding to result state" (Ramchand 2008: 39). These subevents are respectively mapped into three syntactic projections: the Init(iation) phrase, the Proc(ess) phrase and the Res(ult) phrase.[73]

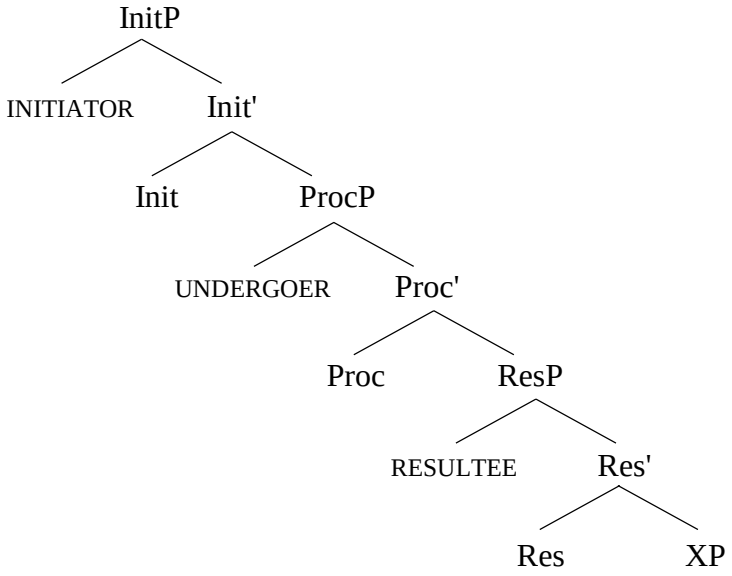
In this, the specifier position of each of these projections is occupied by a specific argument, which Ramchand refers to as a thematic participant (ibid 108). In the Spec of the InitP, there is the subject argument INITIATOR, which is the entity that initiates or causes a process subevent. The Spec of the ProcP is occupied by an UNDERGOER argument, which is the entity that undergoes a process. Finally, the Spec of the ResP is filled by a RESULTEE, the entity which holds the result state (ibid 40, 52).[74] The structure

[73] As Ramchand (2008: 39) points out, her decomposition model of the traditional V node is in the same spirit as Pollock's (1989) decomposition of the Infl node and Rizzi's (1997) decomposition of the C node.

[74] Other thematic participants in Ramchand's (2008) account are PATH and RESULT-RHEME, but these occupy complement positions, not Specs. I discuss them in section 4.5.2.

in (13) presents these projections and arguments and the functional sequence they display.[75]

(13)



(adapted from Ramchand 2008: 39)

Examples for each of the three arguments are given in (14), cited from Ramchand (2008: 52). For explanatory purposes, I underline the targeted arguments.

(14) a. Karena drove the car. [INITIATOR]
b. The ball rolled. [UNDERGOER]
c. Katherine ran her shoes ragged. [RESULTEE]

Ramchand (2008) employs the Minimalist syntactic operation 'Merge' to account for the fact that an item can have multiple roles (cf. Starke 2001) and thus appear in more than one position concurrently. This is done through the copy theory of movement or 'Remerge'. Consider the examples in (15a-b), cited from Ramchand (2008: 53).

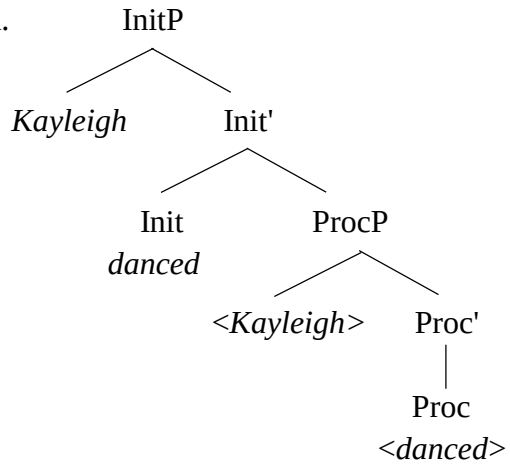
(15) a. Kayleigh danced. [UNDERGOER - INITIATOR]
b. Katherine broke the stick. [RESULTEE - UNDERGOER]

[75] An earlier version of the structure in (13) included *v*P-VP-RP, respectively (see Butt & Ramchand 2001; Ramchand 2004; Folli & Ramchand 2005). But, they are based on the same proposals and arguments put forth in Ramchand (2008). As to the position of these projections with respect to Asp and Tense, Ramchand (2013) argues that they are lower than AspP and TP in the hierarchy and introduces them under an EventP (for details the reader is referred to Ramchand (2013)).

In (15a), since *Kayleigh* is the entity which initiates an act of dancing and also the entity which undergoes this act or process, it will be performing the roles of both UNDERGOER and INITIATOR. Syntactically, it will be introduced under Spec-ProcP, leaving a copy there when it moves to Spec-InitP. In the same manner, in (15b), *the stick* plays two roles, this time a RESULTEE and an UNDERGOER. The stick indeed undergoes the process of breaking and also displays the result state of being broken. In the projection structure, *the stick* has a copy under Spec-ResP and an overt form under Spec-ProcP.

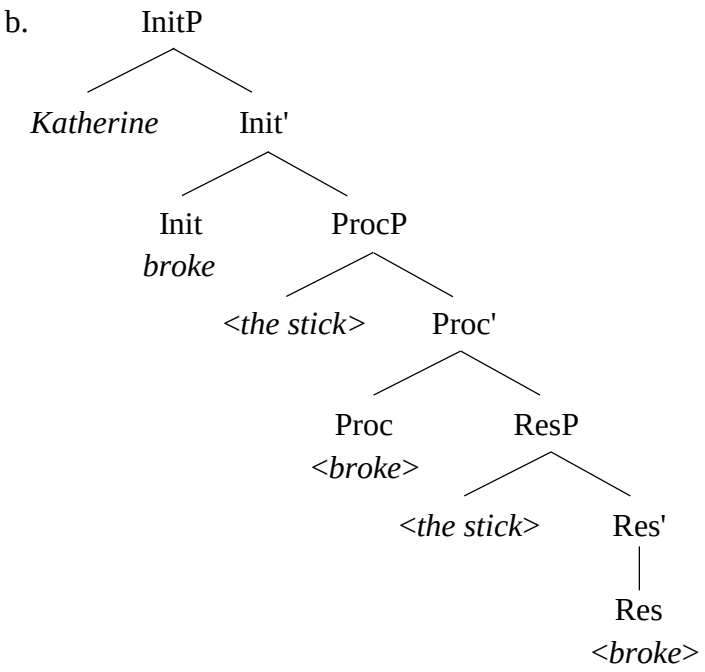
This Merge and Remerge system operates also on the lexical representation of the heads Init, Proc and Res. For example, since the verb *dance* instantiates both Init and Proc, it will first merge as Proc and then project to Init. The same applies to the verb *break*, which instantiates all the three subevents in (15b).[76] The structures of (15a-b) are as in (16a-b), respectively:

(16) a.



[76] When there is no Agent (INITIATOR of an event), the verb *break* only instantiates Proc and Res, as in *the window broke.*

b.



As to the semantic interpretation assumed for her first-phase syntax, Ramchand (2008: 40-45) adopts a post-davidsonian semantics, which establishes a systematic correspondence between syntax and semantics (cf. Higginbotham 1985; Parsons 1990; Hale & Keyser 1993). In this semantic account, the functional heads involved in the V projection are interpreted in a systematic way. Ramchand (2008) takes particular nodes in the hierarchy to denote particular semantic relations, e.g. the causational/initiation relation and telic augmentation. However, the basic primitive of the event combinatorial system is the 'leads to' relation represented as '→' following Hale and Keyser's (1993) notation system. This is given in (17):

(17) *Event Composition Rule*

e = e1 → e2: e consists of two subevents, e1, e2 such that e1 causally implicates e2

(Ramchand 2008: 44)

To elaborate, the semantic decomposition of the Accomplishment predicate *defuse the bomb* has the following structure:

(18) 'defuse-the-bomb' (e) *where* e = e1 → (e2 → e3): [initiate-defuse(e1) & process-defuse(e2) & result-of-defusing(e3)]

(Ramchand 2008: 43)

Using first-phase syntax and the decomposition model of verbs described above, Ramchand (2008) identifies six lexical verb types. Her classification is based on the features or components associated with a verbal lexical item, in such a way that verb type is determined by the types of subevental projection it can spell out. Ramchand's (2008) typology of verbs is summarised in table 4.2 along with illustrative examples from English, cited from Ramchand (2008: 108).

Verb class	**Examples**
Initiation-process verbs	*drive, push, eat, read, run*
Initiation-process-result verbs	*throw, enter, arrive, give*
Process verbs	*melt, freeze, roll*
Process-result verbs	*break, tear*
Initiation-process-N verbs	*dance, sleep*
Initiation-process-A verbs	*dry, clear*

Table 4.2 Ramchand's (2008) typology of verbs

Since the focus of this thesis is on analysing the occurrence of motion verbs with spatial PPs, I do not attempt to fully review or discuss Ramchand's (2008) analysis of all these verbs. Rather the focus will be on motion verbs only. However, before wrapping up this section, a few general observations are due on the whole model and on the verbs in table 4.2. First, all these verbs are dynamic in nature, because all of them involve a Proc component. Second, the thematic participants available in each verb type differ according to the type of subevents available, e.g. in *she arrived* the subject *she* can play the role of INITIATOR, UNDERGOER and RESULTEE, because the verb can spell out the three subevents [Init, Proc, Res]. In contrast, in *the water froze* there is an UNDERGOER participant only, i.e. *the water*, because *froze* involves a process subevent only.

Third, stative verbs in Ramchand's (2008) account consist only of the Init element in their first-phase syntax. The external argument is interpreted as the holder of the state, not as INITIATOR. This is because the InitP in the case of stative verbs does not take a ProcP as its complement, thus it is not to be interpreted as a causational event (see

Ramchand 2008: 55-56). Hence, Proc is the main element that distinguishes state verbs (minus Proc) from motion verbs (plus Proc) in Ramchand's typology of verbs. Within Proc verbs, further distinctions can be made based on the availability of Res as shown in table 4.2 (see section 4.4. for detailed analysis of motion verbs).

Finally, most of the motion verbs in table 4.2 can occur with elements such as *in/on/at* and *to/from/through,* although only under certain conditions and triggering certain readings. More discussion of the types of readings available when these verbs occur with different spatial PPs and the types of syntactic and semantic interactions that hold between them will be offered in chapter 5.

4.2.6 *Discussion and proposal: Res = BECOME*

In this subsection, I compare the proposals made by the authors reviewed above. In particular, I draw parallels between Ramchand's (2008) model of events with the other semantic accounts. In brief, I take from Dowty (1979) the atomic predicates DO, BECOME and CAUSE, from Pustejovsky (1991) the idea of combining Accomplishments and Achievements under Transition, from Rothstein (2004) the distinction between BECOME and culmination, and from Ramchand (2008) the decomposition model of InitP>ProcP>ResP. The combinations of these proposals will help in establishing some theoretical grounds to base my later analyses and proposals on.

Despite the different terminology used in semantic and syntactic analyses, the underlying assumptions of event analysis are similar in many respects. In general, there is agreement that dynamic events or dynamic verbs are more complex than states or stative verbs both semantically and syntactically. For example, semantically, following Dowty (1979), the dynamic event *she broke the vase* involves a DO, BECOME and CAUSE element, and syntactically, following Ramchand (2008), it is decomposable into InitP>ProcP>ResP. In contrast, a State such as *she is a star* has a simple semantic and syntactic structure. Semantically, it includes none of these semantic predicates and syntactically it can be represented as an InitP (see Ramchand 2008: 55-56). The complexity of dynamic, or more specifically motion, verbs increases further when they occur with spatial PPs.

As was evident in the previous sections, the semantic and syntactic structures assumed for the events mostly represent entire verbal predicates. Moreover, verbs are the main constituents focused on in the semantic and syntactic accounts reviewed above. A division of labour between analysing verbs as lexical items and VPs is reflected in the literature as lexicalist vs constructionist approaches. As mentioned in the introductory chapter (section 1.4.2), I will follow a moderate constructionist approach as presented in Ramchand (2008).

As stated by Ramchand (2008: 109, 196), Vendler's classes correspond to her classes as follows: "'activities' correspond to either [init, proc] or [proc] verbs; 'accomplishments' are [init, proc] verbs with incremental theme or PATH complements; 'achievements' are [init, proc, res], or [proc, res]". According to the way Ramchand puts it, Vendler's Activities and Accomplishments class differ in that the latter has an incremental theme or path complement. The contrast is captured in (19a-b):

(19) a. Tahir ran. [Activity]
b. Tahir ran a mile. [Accomplishment]

Moreover, the Achievement class is the only one which is supposed to include a Res subevent. Restricting the Res subevent to the Achievement class does not seem accurate if we take into account the semantic proposals made in Dowty (1979), Pustejovsky (1991) and Rothstein (2004). In these studies, Accomplishments involve a BECOME event/component on a par with Achievements. Accordingly, there is a result state in Accomplishment events as well.

Furthermore, on the one hand, we have seen that in Dowty (1979) Achievement events lack the DO atomic predicate. On the other hand, Ramchand (2008) takes Achievements to involve a Proc subevent. If we assume that Proc is the syntactic representation of DO, this may cause a clash between the semantics and syntax assumed for Achievements. This clash, however, can be avoided if we take Achievements to involve dynamic verbs and thus involve a DO/Proc element. Moreover, following Pustejovsky (1991) proposals for collapsing Accomplishments and Achievements into one class leads to a satisfactory result in this respect. That is, Pustejovsky's Transition (which subsumes both Accomplishment and Achievement) involves a Process and a State. Thus, both DO and Proc are involved in Achievements.

Each of Ramchand's (2008) subevents can be said to correspond to an atomic predicate proposed in Dowty (1979). The Init subevent corresponds to the CAUSE predicate, Proc is similar to the DO element, and Res is parallel to the BECOME predicate. This correspondence can be represented in the logical structure of *Sara melted the ice* as in (20a) and its syntactic structure as in (20b).

(20) a. [DO [Sara melted ice] CAUSE [BECOME [the ice is melted]]]

b. [$_{InitP}$ *Sara* [$_{Init}$ *melted* [$_{ProcP}$ *the ice* [$_{Proc}$ <*melted*> [$_{ResP}$ <*the ice*> [$_{Res}$ <*melted*>]]]]]]]

This correspondence seems to support the existence of a rather direct semantic-syntactic mapping. The most important correspondence for our analysis is that between Res and BECOME. Accordingly, verbs in Vendler's (1957, 1967) Accomplishment and Achievement classes (=Pustejovsky's Transition) can be assumed to have a Res projection in their first-phase syntax. Having this correspondence in mind, assuming a parallel between Ramchand's Res and Rothstein's BECOME is quite reasonable, especially since Rothstein's semantic account is based on Dowty (1979). Therefore, we may take BECOME to be this semantic component which suggests the Res feature in the syntactic structure. This correspondence is supported by the fact that what Rothstein (2004) refers to as the incremental argument or incremental theme is parallel to the argument introduced in Spec-ResP, namely the RESULTEE in Ramchand (2008). The incremental argument and the RESULTEE are the entity which is affected by (or holds) the result event.

To sum up the discussion so far, I have shown that there is a one-to-one mapping between the semantics and syntax proposed for events in the literature. The correspondence that I will focus on is that Res is the syntactic representation of the BECOME event and that it is present in the Transition events.

Having this parallelism in hand, along with Rothstein's (2004) distinction between BECOME and culminations, I claim that Res is distinct from the culmination of an event. Following Rothstein (2004) I take culmination to be the final event in a BECOME event which is often referred to as the telic point or set terminal points. The questions that arise here are whether Res can be realised by non-verbal elements such as

PPs, and how Rothstein's culmination can be represented. Discussion of the first question will be presented in section 4.3, where I look closely at the features and possible lexical representations of the Res projection. The second question will be discussed in chapter 5.

4.3 Motion V Projection

As mentioned earlier, Ramchand (2008) proposes that the fine-grained structure of motion VPs can be decomposed into three functional projections: InitP>ProcP>ResP. Each serves a specific function and represents a specific subevent. The component that I will be closely looking at in this section is the Res subevent.

Res is a decisive factor in distinguishing different types of motion verbs and its presence contributes to the type of reading expressed by the lexical predicates that include DPs, APs or PPs. Therefore, recognising its semantic and syntactic properties is crucial to determine its role in an event structure and its lexicalisation in a phrase structure, especially with the existence of a spatial PP. The main questions I will address in this section are: what are the semantic properties and/or function of Res? What lexical items can lexicalise Res? And what types of complements does it allow? I will first review Ramchand's (2008) and Romeu's (2012) account of Res lexicalisation. I then discuss and assess their proposals, showing a mismatch between the semantics and syntax of event structures in their accounts. Finally, I propose that Res, being parallel to a BECOME event, should be recognised as part of the verb only. Elements such as PPs or APs are culminations of BECOME (=ResP) (see chapter 5).

4.3.1 *Res*

A result state is that subevent that is attained after (or because of) a process (cf. Dowty 1979; Pustejovsky 1991; Rothstein 2004; Folli & Ramchand 2005; Ramchand 2008). Syntactically, a result state is represented as ResP in Ramchand (2008) and it has a Spec, head and complement. The Spec hosts the holder of the result state and is referred to as RESULTEE. ResP "gives the 'telos' or 'result state' of an event [and it] only exists when there is a result state explicitly expressed by the lexical predicate" (Ramchand

2008: 40).[77] This view of Res is in line with the common view of resultativity in the literature (see e.g. Simpson 1983; Pustejovsky 1991; Hoekstra 1992; Rappaport Hovav & Levin 1996, 2001; Rothstein 2004). Also authors working on the syntactic composition of events have suggested a similar result projection to represent the telos or resultativity of an event structure (see e.g. Ritter & Rosen 1998; Borer 1998; Rappaport Hovav & Levin 2001).

As to the lexical representation of Res, the general view is that it can be lexicalised as part of the verb or licensed and constructed by other categories such as DPs, PPs and APs (see e.g. Folli & Ramchand 2005; Fábregas 2007; Ramchand 2008; Romeu 2012). For illustration, I will outline the proposals in Ramchand (2008) and Romeu (2012) of the kinds of categories that can represent or lexicalise Res.

Ramchand (2008)

Ramchand (2008: 39) states that her three projections (including Init and Proc), are "essentially verbal". For example, the verbs *enter, break, find* license Res as part of their lexical entries. However, other ways to specify Res or telos in Ramchand (2008) are through APs, PPs and particles. I will consider the different forms in turn.

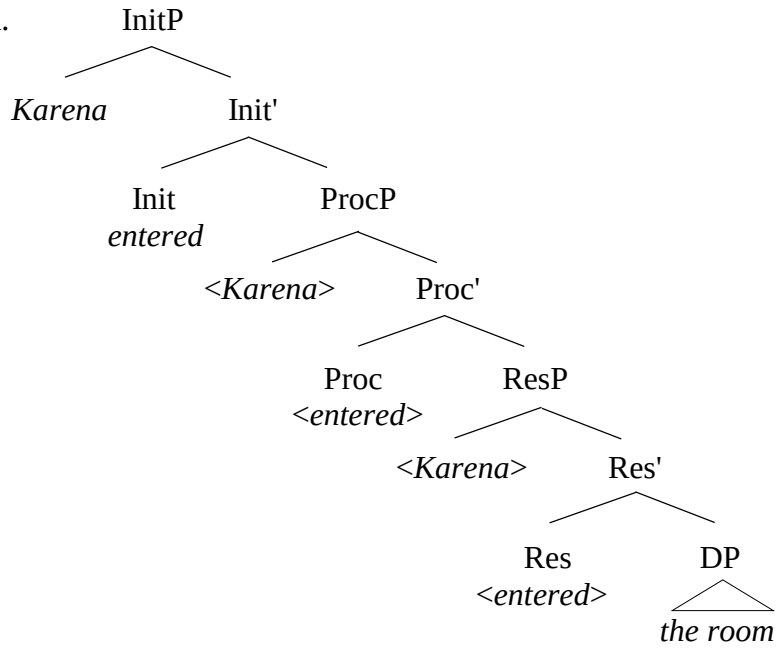
To start with, in the verbal type, Res will be lexicalised as part of the verb. Consider examples (21a-b), cited from Ramchand (2008: 52):

(21) a. Karena entered the room.
b. Kayleigh arrived at the station.

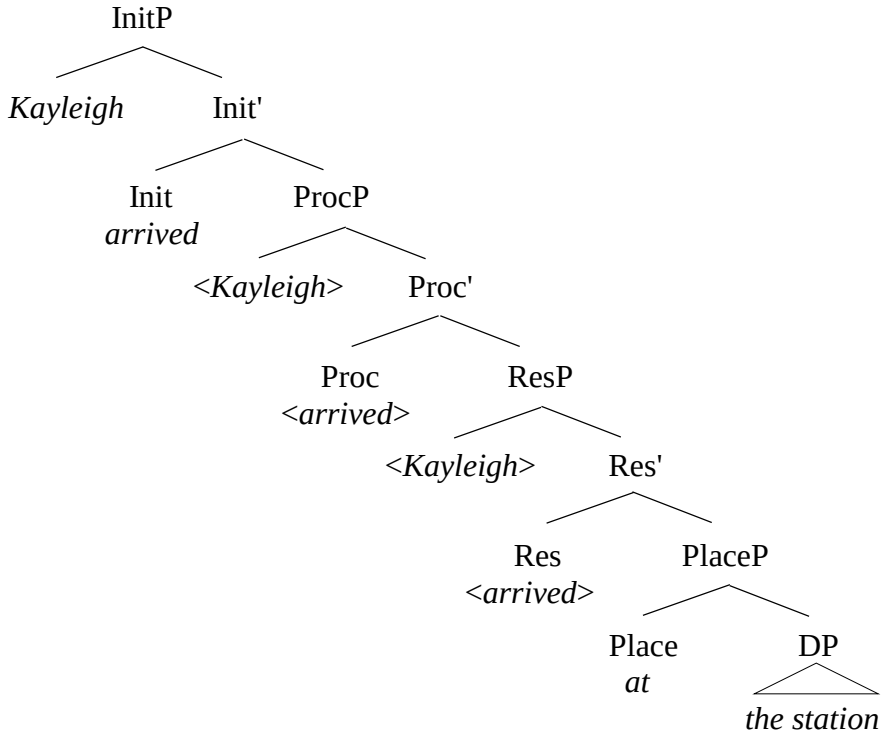
According to Ramchand, both *enter* and *arrive* instantiate the Res feature in the first-phase syntax and their complements are in the form of Grounds which further describe the result state through naming its final location. Following Ramchand (2008), the structures of the examples in (21a-b) are as in (22a-b), respectively:

[77] 'telos' is a Greek word meaning goal or end.

(22) a.



b.



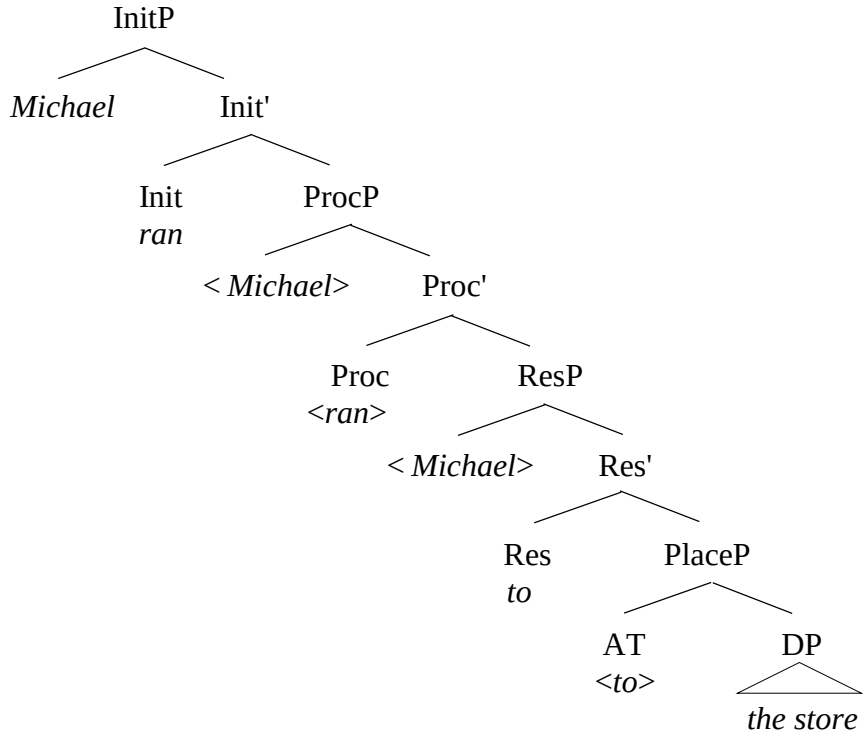
For Ramchand (2008) both the DP *the room* in (22a) and the PP *at the station* in (22b) are taken as the Ground of the result projection, although in the latter the Ground is introduced in a PP. In fact she claims that the PPs that can appear in the complements of ResP are PlacePs (my Rel_{PLACE}Ps), not PathPs (see Ramchand 2008: 51, 75). In sections 4.5.2 and 4.5.3, I will discuss in detail the complement types allowed after ProcPs and ResPs, respectively.

In Ramchand (2008), Res can also be represented by a PP or a particle. Examples (23a-b) are from Ramchand (2008: 52).

(23) a. Michael ran to the store.
b. Michael threw the dog out.

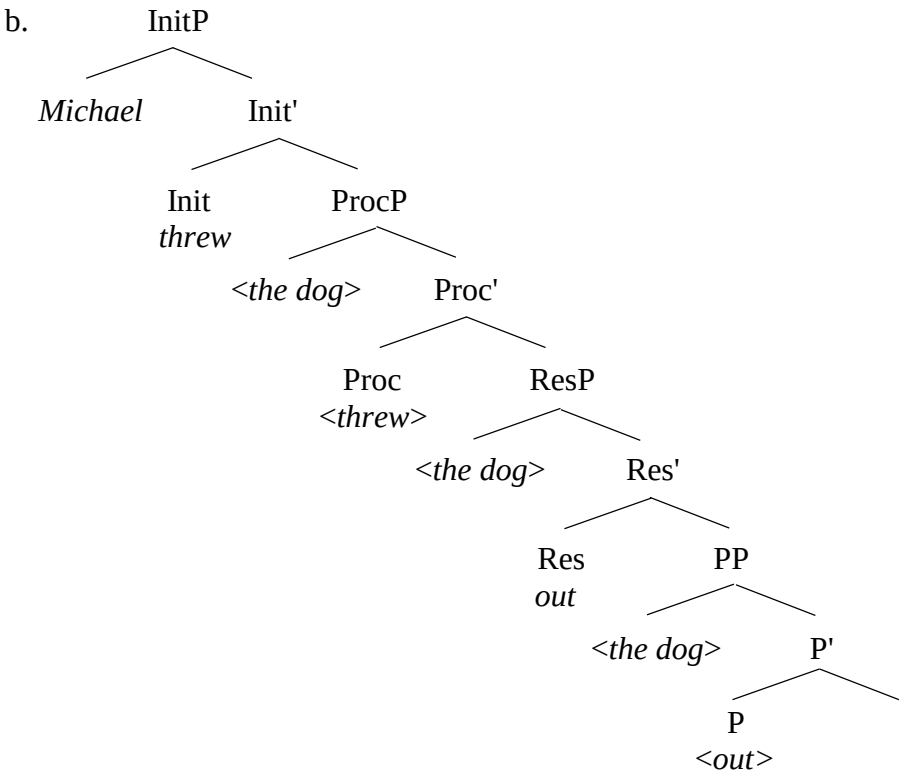
Ramchand (2008) assumes that both *to* and particles such as *out* lexicalise the Res head. Ramchand's (2008) treatment of *to* is rather different to what is common in the literature (cf. e.g. Jackendoff 1983; Svenonius 2010; den Dikken 2010; Pantcheva 2011). Ramchand claims that *to* can be associated with two features: a Res feature and a Place feature (Ramchand 2008: 119).[78] Accordingly, Ramchand (2008) assumes the existence of a ResP in constructions made up of [Proc] verbs such as *run* and PPs provided that the PP is headed by *to* (not unbounded or even other bounded path-denoting Ps). As to the particle *out*, Ramchand assumes that particles also are associated with a Res feature. Furthermore, she follows the common treatment of particles as intransitive prepositions with no complement Grounds (see e.g. Emonds 1976, 1985; Svenonius 1996, 2010). Thus, in Ramchand (2008) particles are inserted under P before they obligatorily move to Res. Following Ramchand (2008), the hierarchical structures of the two examples in (23) are as in (24a-b), respectively.

(24) a.



[78] In Nam (1995) and Zwarts (2005), *to* is represented as involving an AT meaning (see chapter 3).

b.

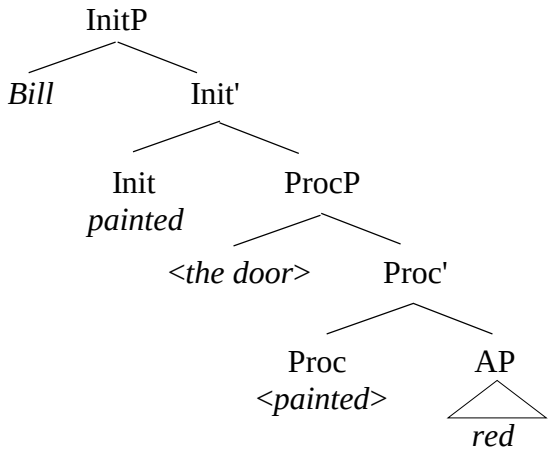


According to Ramchand, APs can also add a telos to an event. Consider the examples below, cited from Ramchand (2008: 121).

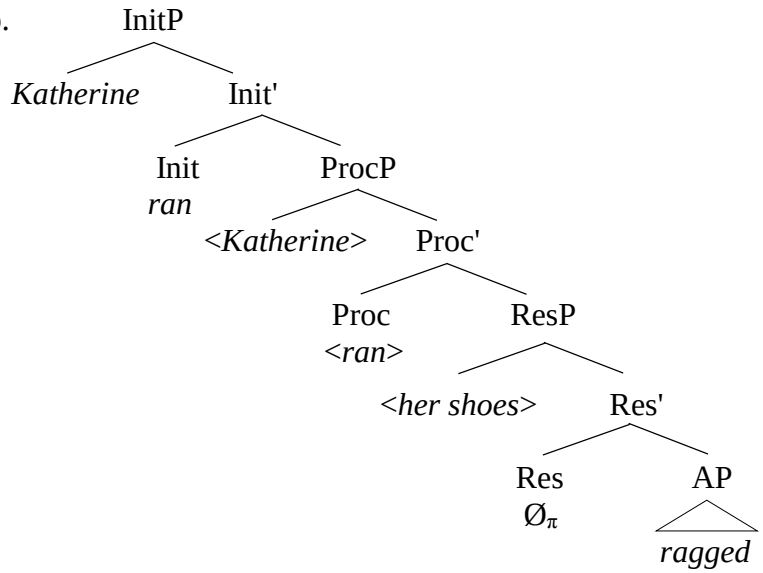
(25) a. Bill painted the door red.
b. Katherine ran her shoes ragged.

Both examples denote an adjectival resultative event, although a different structure underlies each of them based on the predicate properties. In (25a), the AP has a selected object and a gradable adjective. Following proposals in Wechsler (2001), Ramchand (2008: 122) relates gradable and closed scale adjectives to a scalar path. That is, the AP describes the property of the object at the end of a painting activity (a scalar path). In this case, Ramchand does not postulate a ResP in the structure, but takes the AP to license the resultativity of the event. The structure is as in (26a). As to (25b), the argument occupying the object position is unselected by the verb. In such cases, following Wechsler (2001), the AP does not represent the ResP. The reason why APs with unselected objects do not license resultativity is that the AP is a complement of a "distinct result-state subevent" (Ramchand 2008: 123). Following Ramchand (2008), the structure for the case in (25b) is as in (26b).

(26) a.



b.



The null Res accounts for the resultativity suggested in example (25b). Following proposals in Hale and Keyser (2000) and Baker (2003), Ramchand (2008) assumes that APs do not license a Spec position, because they do not have external arguments.[79] As can be seen, the UNDERGOER in (26a) is the item that undergoes the change, while in (26b) the UNDERGOER is the subject of the event, who experiences the process of running. Therefore, in (26b), the unselected object is introduced into the structure under the RESULTEE position, another piece of support for the null Res postulated by Ramchand (2008: 124-125).

In sum, in Ramchand (2008), Res can be lexicalised as part of the verb (e.g. *enter*), by PathPs (in particular *to*-phrases), by particles (such as *out*) and by APs with selected objects (as in (26a)). Ramchand also proposes a null Res in the case of APs with

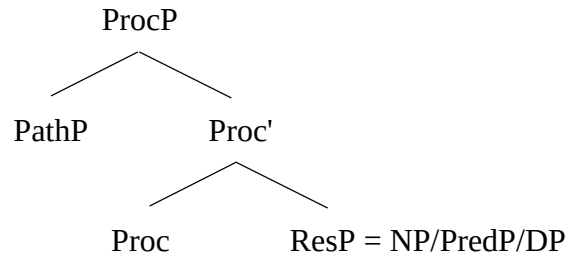
[79] Authors such as Williams (1980), Johnson (1991), Neeleman (1994) and Beck (2005) assume that APs have external arguments.

unselected objects (as in (26b)). Next I review Romeu's (2012) account of motion events, which is more or less in line with Ramchand's (2008) account though with some modifications.

Romeu (2012)

In his analysis of Spanish spatial Ps and motion events, which follows Ramchand's (2008) model in certain respects, Romeu (2012) proposes that the complement of Proc is always an element that is interpreted as the result of the process. He argues that the result element can correspond to an action (NP), a state (PredP) or an entity (DP). The main difference between Ramchand (2008) and Romeu (2012) is in the position of PathPs. While Ramchand locates them as complements to Proc, Romeu (2012, 2014) considers them as modifiers (see chapter 3, section 3.3.4). Having PathPs as modifiers, Romeu (2012) claims, helps explain their different properties and the different positions they occupy in the structure. Romeu's (2012) distribution of these elements can be roughly represented as in (27):

(27)



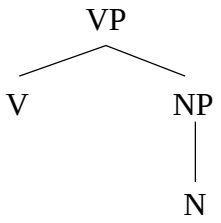
Examples of the three possible realisations of ResP are given in (28), cited from Romeu (2012: 11-12):

(28) a. John ran towards the store.
b. John ran in the room.
c. John wrote a book.

In (28a) the result element is an NP which corresponds to the action of the verb. In (28b), the result is the PredP (*John in the room*). In (28c) the result is the DP *a book*. For the interpretation of denominal verbs such as unergative *run, dance* and *walk*, Romeu (2012) bases his analysis on Hale and Keyser's (1993, 2002) approach. For Hale

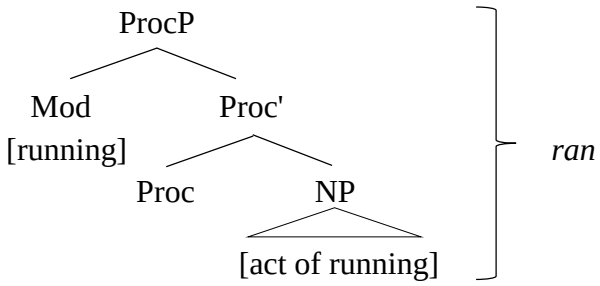
and Keyser, the lexical structure of such verbs involves an empty verbal head and a nominal complement. This is portrayed in (29), cited from Hale and Keyser (1993: 54):

(29)



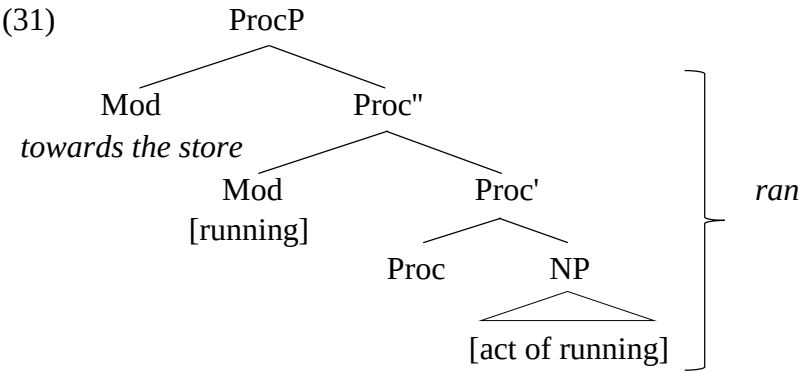
For Hale and Keyser (1993, 2002), the nominal element incorporates into the verbal head. For Romeu the verb lexicalises the whole chunk by means of phrasal spell-out, as shown in (30). Accordingly, in the interpretation of e.g. *John ran*, John "undergoes a process that triggers an act of running" which is parallel to doing a run by running (Romeu 2012: 10). Its structure can be represented as in (30), cited from (Romeu 2012: 10).

(30)



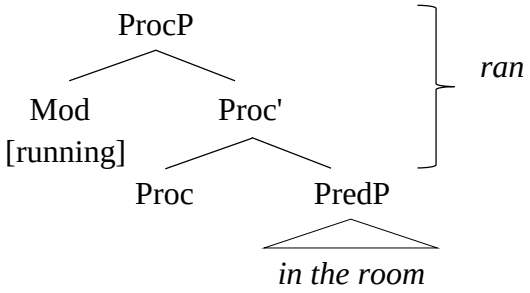
In this way, the complement of Proc is a result element represented as an NP, which is taken as the ResP. As to the PP in (28a), in Romeu's (2012) model, the PP *towards the store* is a modifier (Mod) that determines how the process of running is developed. Therefore, it is not a complement but a modifier located in Spec-ProcP. Recall that Romeu (2012, 2013, 2014) does not propose a Path projection in his model of directional Ps (see chapter 3, section 3.3.4). The syntactic representation of (28a) is as in (31), adapted from Romeu (2012: 11).

(31)



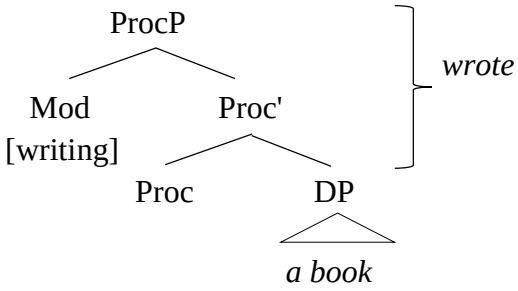
In (28b), for Romeu (2012), the PP *in the room* can have a directional reading.[80] Thus, there is a result element triggered by the process of running due to which John ends up being in the room (Romeu 2012: 12). Here, the ResP corresponds to a PredP represented in the form of a PP. Its structure is given in (32), adapted from Romeu (2012: 12):

(32)



Finally, in the interpretation of (28c), the DP complement *a book* is an object created at the end of a process. Hence, the ResP here is represented in the form of a DP. Its corresponding structure is as in (33), adapted from Romeu (2012: 13):

(33)



In brief, in Romeu (2012) the complement of Proc is always a result element, which can be an action (NP) a state (PredP) or an entity (DP).

[80] A directional meaning for *in the room* with *run* appears to be possible for some English native speakers, where the PP defines a final location (see Ramchand 2008: 112, footnote 1).

4.3.2 *Discussion*

In this section, I discuss the main proposals and claims made by Ramchand (2008) and Romeu (2012) with regard to the lexicalisation of Res, focusing on the mapping between the semantic function of Res and its lexical representations. I argue that there are reasons for not sharing Ramchand's (2008) and Romeu's (2012) view that ResP can be lexicalised by non-verbal elements.

Ramchand (2008) and Romeu (2012) both assume that the complement of ProcP introduces a result state, e.g. an ending point or a property. Most importantly, when the ResP is lexicalised by non-verbal elements such as *to*-PPs/APs with selected objects (Ramchand 2008), NPs/PredPs/DPs (Romeu 2012), they are attached to the ProcP as complements in the hierarchy. That is, the ResP is taken as an XP lexicalised by different categories. Interestingly, both accounts are similar in spirit to Pustejovsky's (1991) proposals, especially his level of event structure (ES) (see section 4.2.3). Recall that Transition events involve a process and a state; the process (P) seems to correspond to Proc and the state (S) to Res. Obviously the state corresponds to different XPs in Ramchand (2008) and Romeu's (2012) accounts.

However, adopting Dowty's (1979) atomic predicates, it is not clear which projection encodes the BECOME subevent under Ramchand's (2008) and Romeu's (2012) accounts of ProcP + non-verbal ResPs. Although Ramchand (2008) provides a semantic interpretation for her event decomposition model, such as the 'leads to' relation where one event (e1) leads to another event (e2) (recall structure (17) in this chapter), her account lacks an adequate mapping between the semantic components of an event and its syntactic structure. This lack of mapping leads to inaccurate interpretation of events of the type verb + PP/AP/DP and inaccurate lexicalisation possibilities of the Res subevent.

For instance, Ramchand (2008) claims that *to* is associated with a Res and Place feature. To claim that *to* lexicalises Res has some plausibility especially since *to*-phrases do indeed suggest a goal of motion with all kinds of motion verbs, e.g. *ran to the store, went to the store, jumped onto the surface,* etc. However, I propose a different structure for *to*-phrases in such cases. I claim that *to* is not associated with Res and Place features

per se, but a Relator in a path domain as was proposed in chapter 3. Below I present some arguments in support of this claim.

First, if *to* is taken as a Res element, then how should we account for its occurrence with verbs such as *enter, fall, go,* etc. which are associated with a Res feature. Sentences which show such combinations are numerous in the British National Corpus. See examples below:

(34) a. the lord marquis had entered into the Tower of London. (BNC, W_ac_humanities_arts)
b. The book fell to the floor with a loud bang. (BNC, W_fict_prose)
c. I went to court a month later and was fined 175. (BNC, W_biography)

Under Ramchand's assumption, there are two lexical items in such sentences that can lexicalise the Res head. Ramchand resolves such cases by means of an underassociation process, stated in (35).[81]

(35) Underassociation

If a lexical item contains an underassociated category feature, (i) that feature must be independently identified within the phase and linked to the underassociated feature, by Agree; (ii) the two category features so linked must unify their lexical-encyclopedic content.

(Ramchand 2008: 98)

That is, according to Ramchand, in cases like *enter into*, since the verb identifies Res, the P *to* underassociates (by the Superset principle) and lexicalises the PathP only. Even if we take this as a solution to the double Res lexical identifiers, *to* will be the one that underassociates in (35), not the verb. Consequently, *to* has its normal function which according to my proposal in chapter 3 would be a Relator, relating the Figure to the Ground in a path domain.

In section 4.2.6, I showed that semantically Res is parallel to Dowty's (1979) and Rothstein's (2004) BECOME event. Also in the literature, some authors argue that path

[81] The underassociation principle is Ramchand's term for the Superset principle suggested by Michal Starke (see Starke 2005).

PPs involve a BECOME element (see e.g. Dowty 1979; Rapp & von Stechow 1999; Higginbotham 2000). However, this leads to the wrong conclusion that *to* is a lexical expression of Res since it involves BECOME. I assume, following Gehrke (2008), that *to* does not involve a BECOME event.[82] Consider the examples in (36), cited from Zubizarreta and Oh (2007: 193).

(36) a. John sent the package to Paris.
b. John put the book on the table.

Quoting Zubizarreta and Oh (2007: 193), the first sentence

> does not entail that the package is in Paris; indeed, it can be followed by the phrase *but the package never got to Paris*. On the other hand, *John put the book on the table* does entail that the book is on the table.

A further example is *Tahir entered the room*, where the Figure *Tahir* does become inside the room. In contrast, in *Tahir ran to the room, Tahir* does not necessarily become in the room. These examples show that *to* does not express a result state and thus cannot lexicalise the Res element or even the Place element (my Rel_{PLACE}). Its semantic function is to relate a Figure to a Ground, which forms the end point of a path. Its semantics involves transition of the Figure between two phases in a path domain (see discussion in section 3.5.3).

To sum up the discussion on *to* as Res, I have shown that it is not associated with a Res feature because it does not involve a BECOME event and it can occur with Res verbs productively (e.g. in English, Spanish and Arabic (see chapter 5)). Instead, I propose a unified treatment of *to* in all its occurrences, following Proc or Res verbs. *To* is a Relator in a path domain. It relates a Figure to a Ground which forms the end point of a path in a motion event. In this way, contrary to Ramchand's underassociation suggested solution to account for the occurrence of *to* with Res verbs, I take *to* to be the same item in all cases. It should be noted that although I do not adopt the underassociation process to explain cases like Res Vs + *to*, I do not argue against it per se. Under my analysis since I do not take *to* to be tagged with a Res feature, the underassociation process is simply irrelevant. Similarly, I extend this reasoning to particles and APs. Since these

[82] Gehrke (2008: 79-83) argues at length that path PPs do not involve a BECOME element. She provides four specific pieces of evidence for this. I refer the reader to her thesis for details.

elements do not involve a BECOME event, they cannot lexicalise the Res head. APs define an (ending) property of the result state and particles define an end point. As to DPs as lexical elements of ResP e.g. *he wrote a book*, as suggested in Romeu (2012), again such categories do not define a BECOME event. Contrary to Ramchand and Romeu, such PPs, APs and DPs are the complements of ResP. More specifically, they are the culmination of the result (BECOME) event expressed as part of the verb.

In brief, the way Ramchand (2008) and Romeu (2012) determine the lexicalisation of the Res element, linking it to the ProcP, does not account for the exact semantic components which are lexicalised in the structure, in particular the BECOME event. For instance, if ResP is lexicalised by a *to*-phrase or an AP, the structure will not adequately reflect the semantics suggested. In other words, the main problem with Ramchand's (2008) and Romeu's (2012) ResP lexicalisation is that they seem to take it to represent two semantic elements: a BECOME event and its culmination. As will be shown in chapter 5 a division of labour should be maintained between these two notions (see Moens 1987; Rothstein 2004; Travis 2010).

4.4 More on Res

Having established the properties of Res and the way it has to be understood, in this section I examine possible parallels between Res and two other notions. These are: telicity (section 4.4.1) and Path in Talmy's (1985, 1991) account of verb-framed languages and my Rel_{PATH} (section 4.4.2).

4.4.1 *Res vs telicity*

Ramchand (2008: 40) states that "[Res] does not correlate with semantic/aspectual boundedness in a general sense". So if an event is telic, it does not imply the existence of a Res element. I share this view, because there are examples where an event is telic yet no result state is expressed.[83] Consider:

[83] Ramchand (2008) also argues against a one-to-one correspondence between telicity and the presence of internal arguments (cf. e.g. Krifka 1987, 1992; Kratzer 2004; Borer 2005; van Hout 2000). For details the reader is referred to the works cited.

(37) a. John ran a mile in an hour. (Rothstein 2004: 93)

b. Michael ate the mango (in an hour). (Ramchand 2008: 36)

These are telic/bounded events, but no Res projection is suggested in the structure. In (37a), the verb *run* is non-Res, but its interaction with the complement *a mile* entails a telic event. In Ramchand (2008), the complement is interpreted as a PATH. In (37b), *eat* is a consumption verb and its complement *the mango* is also interpreted as a path scale. This entails that telicity cannot be relied on to determine if a verb is associated with a Res feature or not. To put it differently, the presence of ResP entails telicity but telicity does not necessarily entail the existence of a result state (see section 4.5.1 for more discussion).

4.4.2 *Res vs Path/Rel$_{PATH}$*

Although it is difficult to tell the difference between Res and Path/Rel$_{PATH}$, in this section I give arguments to show that they are distinct. Prior to that, I draw a parallel between Path in Talmy's (1985, 1991) account and my Rel$_{PATH}$. To account for cross-linguistic variation in expressing motion events, Talmy (1985, 1991) classifies languages into two classes: satellite- and verb-framed languages. His classification is based on the method languages use to encode the notions of motion, path and manner by grammatical categories. More precisely, Talmy (1985) identifies the following set of semantic elements that are involved in a motion event: Motion, Path, Figure, Ground, Manner and Cause. Talmy's (2000: 25) description of a motion event involving these components is stated below:

> The basic Motion event consists of one object (the Figure) moving or located with respect to another object (the reference object or Ground). … The Path … is the path followed or site occupied by the Figure object with respect to the Ground object. The component of Motion … refers to the presence per se of motion or locatedness in the event.

While Talmy's (1985) typology was based on the way languages encode Manner, the focus of his typology in (1991) has shifted to the way languages encode Path (or "core schema"). The named semantic elements are lexicalised by different linguistic elements across languages, such as verbs, adpositions, case, nouns and adverbs. This is illustrated in the following examples, cited from Talmy (1991: 488):

(38) a. The bottle	floated		into	the cave	[English]
Figure	Motion+Manner		Path	Ground	
b. La botella	entró	flotando		a la cueva	[Spanish]
Figure	Motion+Path	Manner		Ground	

Based on such observations, Talmy (1991) classifies English as a satellite-framed language since the Path notion is lexicalised by a satellite element (here the preposition *into*), while the verb encodes both Motion and Manner.[84] On the other hand, he classifies Spanish as a verb-framed language because it is the verb which lexicalises both Motion and Path, while Manner is expressed separately as an adjunct.

In chapter 3 I have argued that Path Ps are Relators in a path domain and are distinct from the notion of path (a set of points). Accordingly, what Talmy takes as a Path is a Rel_{PATH} in my account. To elaborate, in (38a) *into* is a Rel_{PATH} (not Path) and in (38b) the Path element assumed in *entró* is in fact a Rel_{PATH}. Next I turn to the parallel between Res and Talmy's Path (my Rel_{PATH}) in verbs within the verb-framed languages.

In her analysis of the English equivalent *enter*, Ramchand (2008) associates the verb with a Res projection (recall the structure in (22a)). The question that arises here is whether the Path element recognised in *entró* and Res in *enter* are the same. It is hard to give a definitive answer. Both Ramchand's Res and Talmy's Path are inherent in the verb and not represented by a specific morpheme (say a prefix or suffix). However, below I provide arguments that show they are distinct elements.

Recall that in accounts like Ramchand (2008) ResP can be lexicalised by *to*-phrases, which I rejected later due to the co-occurrence of Res and Rel_{PATH} as in *entered into* and also the lack of an association of *to* with a BECOME event. The same is true for Spanish *entró*, which can be found with elements like *hacia* 'towards' or *hasta* 'up to'. Examples below are from Juan Romeu (p.c.) (the glosses are mine):[85]

[84] Although Talmy (1985, 1991) restricts the satellite elements in English to verb particles e.g. *she ran OUT*, authors following Talmy have extended satellites in English to include adpositions as well, since particles are subsumed under the adpositions family (see Beavers *et al*. 2010).

[85] The English equivalents in (39) are odd, hence the '#'.

(39) a. entraron hacia la cocina
enter.PST.3PL towards the kitchen
'#They entered towards the kitchen.'
b. entraron hasta la cocina
enter.PST.3PL up to the kitchen
'#They entered up to the kitchen.'

Based on such examples, we can say verbs such as *entró* and *enter* are associated with Res, not Path (my Rel_{PATH}). They can be followed by Rel_{PATH} elements. Similar verbs in Spanish are *lanzar* 'to throw' and *tirar* 'to throw/drop', which are classified as Res Vs in Fábregas (2007). These verbs can appear with directional PPs introduced by *a* (examples (40a-b) are from Fábregas (2007: 170)) (the glosses are mine):

(40) a. Juan lanzó una pelota al tejado
Juan throw.PST a ball to.the roof
'Juan threw a ball to the roof.'
b. Juan tiró una piedra a la ventana
Juan throw.PST a stone to the window
'Juan threw a stone to the window.'

This examination of (39) and (40) leads to the following conclusions. First, Res is distinct from Path/Rel_{PATH}. Second, although a path notion is entailed in e.g. *entered the house* no Path element is available, contrary to what Talmy assumes. Third, verbs like *enter*, *reach* and *leave* are not associated with a Rel_{PATH}, but it is a Res element which expresses the BECOME event. I will discuss these verbs in more detail in section 4.5.3.

4.4.3 *Interim summary*

In the previous sections I have provided a semantic-syntactic analysis of events by bringing together the semantics proposed in Dowty (1979) and Rothstein (2004) and the syntax in Ramchand (2008). In particular, I claimed that Res is licensed by the BECOME event which is realised within the verbal domain. In sum, Res has the following properties:

- Semantically it is parallel to Dowty's (1979) and Rothstein's (2004) BECOME element which suggests a BECOME event in Pustejovsky's (1991) Transition (=Vendler's (1967) Accomplishments and Achievements).
- Syntactically it can be represented as part of the verb only.
- Its complement can be an end point, a property or a created object.

In the rest of this chapter I will examine motion verbs in more detail. I will divide them into two classes, based on their association with a Res feature. This division will help later discussion when the occurrence of these two classes with different spatial PPs is examined (see chapter 5).

4.5 Typology of Motion Verbs

We have seen that the verb forms the core element in motion events. Its lexical entry determines the type of motion denoted, e.g. *run, walk, swim* denote activity motions while *enter* and *leave* denote a change of location (see Levin 1993; Fong 1997; Zubizarreta & Oh 2007; Gehrke 2008, among others). Applying Ramchand's (2008) tripartite VP structure and given that the Proc feature is always present while Init and Res are optional, motion verbs can be divided into maximum four groups: [Init, Proc], [Proc], [Proc, Res] and [Init, Proc, Res].

Furthermore, given that the Init subevent mostly does not affect the choice of the PP and is thus not relevant to the discussion, I will be disregarding it in my division of motion verbs.[86] Therefore, the two main types of motion verb that we need to distinguish cross-linguistically (or at least in manner languages) are [Proc] and [Proc, Res] verbs. In the next sections I will lay out some diagnostics which can be used to distinguish between [Proc] and [Proc, Res] verbs and then examine the syntactic and semantic properties of the two types of motion verbs in detail.

4.5.1 *Diagnostics*

To determine the lexical features of motion verbs, e.g. whether a verb is associated with a Res feature specification or not, is not always straightforward. Among the diagnostics

[86] In Bulgarian, the Init affects the type of spatial prefix used. See Pantcheva (2007) for details.

suggested in the literature for this task is the occurrence of the verb with a $Rel_{PLACE}P$ (see e.g. Folli & Ramchand 2005; Pantcheva 2007; Ramchand 2008; Tungseth 2008). If the only reading suggested by the PP is locative then the verb is assumed to lack a Res feature, but if there is a directional reading then the verb has a Res feature. To illustrate, contrast (41a and b):

(41) a. She walked in the garden. [locative]
b. She fell in the well. [locative/directional]

In (41a), the Figure *she* undergoes a walking activity within the garden space. The verb *walk* does not license a directional reading of the $Rel_{PLACE}P$ *in the garden*. Therefore, it can be taken to lack a Res feature. In contrast, the PP in (41b) has a dual reading: locative or directional. Under the locative reading, the PP specifies the location of the falling action. That is, the Figure fell while being in the well (probably a waterless well). Under the directional reading, the PP specifies the end point or location of the Figure in a path. That is, the Figure underwent a falling action, which ended up with her in the well. Accordingly, the verb *fell* is associated with a Res feature.

However, in some cases, the validity of this diagnostic is questionable for some verbs such as *walk* and *run*. Consider examples below, from Ramchand (2008: 112, footnote 1):

(42) a. Mary walked in the park.
b. Mary walked in the room.

For Ramchand (2008), the directional reading is more evident in (42b) rather than (42a).[87] That is, in (42b), it is possible that the Figure ends up in the room, while in (42a) it is difficult to get the reading that the Figure ends up in the park. Ramchand suggests that the directionality meaning is evoked by the type of the DP Ground. That is entities such as *the room* can evoke a "threshold-crossing", while *the park* cannot. These examples lead to a dilemma about the lexical specification of the verb *walk*; is it associated with Res or not? As a way out of this dilemma, applying PP topicalization can be useful (see Goldberg 1995). Contrast:

[87] Note that some native speakers might not get this directional reading (see footnote 80).

(43) a. In the park, Mary walked. [locative/*directional]

b. In the room, Mary walked. [locative/*directional]

vs.

(44) a. In the garden, he went. [*locative/directional]

b. In the room, he went. [*locative/directional]

In (43a-b), the verb *walk* does not give rise to a directional reading for the PP, not even with the DP *the room*. In contrast, in (44a-b) the PP has a directional reading only due to the Res feature associated with the verb *go*. Thus, through the PP-topicalization test we can get a more accurate sense of the type of the verb when occurring with Rel_{PLACE}Ps. This test is useful for Germanic languages, but it does not work in the Romance languages, as Real Puigdollers (2010: 138) notes, "Romance locative [PPs] can be moved freely preserving the goal of motion reading, whereas Germanic ones cannot".

Another diagnostic I suggest to determine the lexical features of motion verbs is through considering the type of DP complement allowed after Proc Vs and Res Vs:

(45) a. Tahir entered the room.

b. *Tahir ran the room.[88]

(46) a. *Tahir entered a mile.

b. Tahir ran a mile.

Ground complements are allowed after Res Vs, (45a), while PATH complements are allowed after Proc Vs, (46b). This observation is based on Ramchand (2008: 52).

In sum, there are two diagnostics (occurrence with Rel_{PLACE}Ps and type of DP complements) to determine the lexical specification of motion verbs, mainly in English. In general, the diagnostics do not seem entirely decisive in determining the type of motion verb. The problem is not only with the diagnostics per se, but also the case of

[88] Under a metaphorical sense, the example can be grammatical. For instance, Tahir manages the room. However, this is not focused on in this example.

some verbs such as *run* and *walk* and the effect of neighbouring elements. However, I suggested the use of PP topicalization to tackle such issues.

Applying the tests of occurrence with Rel_{PLACE}Ps and type of DP complements, English motion verbs can be divided as follows:[89]

(47) a. [Proc] Vs: *run, walk, swim, fly, float, roll, dance, push, drive*
b. [Proc, Res] Vs: *go, come, put, fall, kick, throw, enter, leave, arrive*

A general note on the two types of motion verbs in (47) is that the motion verbs in (47a) are those which involve an extended path, while those in (47b) suggest a change of location or a punctual event. Further distinctions exist among each class due to the lexical semantic features unique to each verb, leading consequently to different syntactic behaviour and structure. Similar divisions of motion verbs have also been made for other languages, such as Italian (Folli & Ramchand 2005), Spanish (Fábregas 2007), Bulgarian (Pantcheva 2007) and Persian (Pantcheva 2009). In the next sections, I look closely at the syntactic and semantic properties of these two classes ([Proc] Vs and [Proc, Res] Vs). The examples examined are mainly from English.

4.5.2 *[Proc] Vs*

Motion verbs associated with a Proc element comprise what is usually referred to as manner of motion verbs. Examples of such verbs in English are given in (47a), and repeated here as (48).

(48) [Proc] Vs: *run, walk, swim, fly, float, roll, dance, push, drive*

[89] In the literature on event types, some authors acknowledge the role of aspectuality and tense in determining the type of the verb (see Vendler 1967; Dowty 1979; Verkuyl 1993; Travis 2010). That is, the lexical entries of verbs are not fully determined in the lexicon, but also partly after insertion in a specific context. However, if one includes aspect and tense in determining the lexical entries, other operators might also arise such as modals, negation and intention of the subject which can mark a crucial difference between say *she wrote a book* vs. *she might write a book* vs. *she did not write the book* vs *I planned to write a book*. The syntactic structure of all these examples includes a ResP since they denote a resultative Transition event. However, the matrix event is affected by the other operators which could be that the culmination is not reached in the last three examples (see Rothstein (2004) on the role of progressive aspect and Higginbotham (2009) on negation in events). Since the discussion of these factors and operators is beyond the scope of this thesis, I will not follow this line of analysis, leaving it for further study.

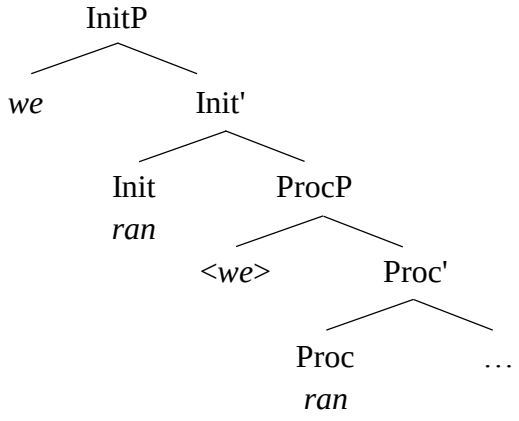
A common use of these verbs is to express an activity, e.g. *she is running/walking/swimming*, etc. As mentioned earlier the subject argument of the ProcP is the entity that undergoes a process and is referred to as UNDERGOER (Ramchand 2008). The DP UNDERGOER can be the subject in case of intransitive uses or the direct object in case of transitive uses. Furthermore, in Ramchand's (2008) account, some of these verbs are lexically encyclopaedically tagged with an initiation subevent which is represented as the InitP in the first-phase syntax and its subject argument is that of INITIATOR. In intransitive constructions the INITIATOR and the UNDERGOER are always identical, while in transitive constructions they are mostly distinct. To illustrate, see the examples in (49a-b).

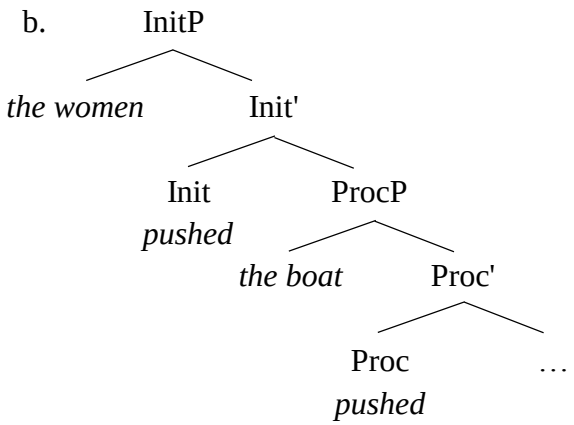
(49) a. And we ran to this house. (BNC, S_conv)

b. Then the Women pushed the boat down the beach. (BNC, W_fict_prose)

In (49a) the verb *run* is intransitive and the external argument *we* is the entity that initiates and undergoes the running. In (49b) *push* has a transitive use. *The women* is the entity that initiates the pushing activity while *the boat* is the entity that undergoes the pushing. The syntactic representation of the VPs in (49a-b) is as in (50a-b), respectively.

(50) a.





While the verbs *run, walk* and *dance* are known as intransitive verbs, they can be used in transitive constructions provided that there is a secondary predicate. See the examples in (51a-c):

(51) a. Gina ran her bike over his foot viciously. (BNC, W_fict_prose)
b. she walked the dog to a nearby village. (BNC, W_misc)
c. they will dance him to a watery grave. (BNC, W_non_ac_humanities_arts)

In these examples, the subject of the sentence is the INITIATOR and the object is the UNDERGOER. Although in these examples there is the possibility that the INITIATOR also might have undergone the process of running, walking or dancing, this is not represented syntactically. The first-phase syntax disallows this possibility since only one entity can appear in Spec-ProcP.

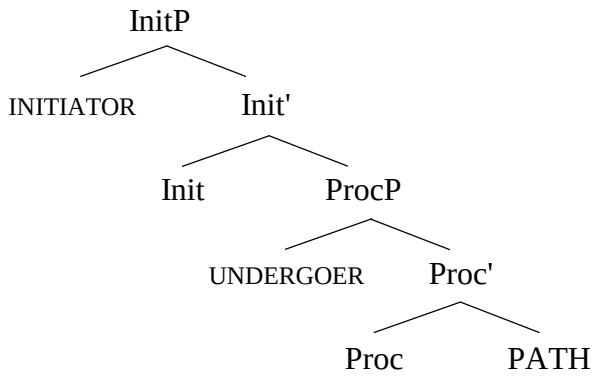
Note that the DP following some of the verbs in (48) might be read not as the UNDERGOER of the process, but as rhematic material, namely a PATH. In Ramchand (2008: 50) the thematic role PATH is defined as "the relation that holds between an entity and an event, if a monotonic property of that entity is monotonic with respect to the part-whole structure of the event as well". In other words, PATHs are the trajectories covered by the entities that undergo the process. Syntactically while UNDERGOERs are in Spec-ProcP, PATHs are in the complement position of the Proc head. Examples of Proc verbs with PATH objects are given in (52). The relevant elements are in bold.

(52) a. And though injured himself he **ran a mile** over rough terrain to fetch help.
(BNC, W_news_script)

b. If he **swam the river**, he would have to make his way upstream well beyond the yacht. (BNC, W_fict_prose)

The syntactic structure of these examples is as in (53):

(53)



The question that arises here is how to distinguish UNDERGOERs and PATHs, especially since in the surface structure both look like the direct object of the verb. The similarity is even greater with creation and consumption verbs such as *paint*, *bake*, *eat* and *drink*. See examples below, adapted from Ramchand (2008: 68):

(54) a. John baked a cake.
b. John baked the potato.
c. John painted a picture.
d. John painted a wall.

According to Ramchand (2008), the DPs in (54a and c) are PATHs, not UNDERGOERs because *a cake* and *a picture* came into existence at the end of a creation process. In (54b and d), the DPs are UNDERGOERs, not PATHs, because they already were in existence and have only undergone a process of change. To tell the difference, Ramchand (2008) suggests two main tests. First, UNDERGOERs allow resultative secondary predicates, (55a), while PATHs do not, (55b). Second, UNDERGOERs can co-occur with adverbials such as *a little*, (56a), whereas PATHs seem not to, (56b).[90] Examples are cited from Ramchand (2008: 69-70).

[90] Another test is that of allowing the addition of benefactives (as in *John painted me a picture* vs. ??*John painted me a wall* (Ramchand 2010: 69)). However, since this test is restricted to creation verbs in English, I disregard it in the discussion here.

(55) a. John painted a wall red.
b. *John painted a picture red. [in the 'creation' reading]
(56) a. John painted the wall a little.
b. ??John painted the picture a little. [in the 'creation' reading]

While Ramchand's (2008) idea that the DPs following the verbs in (52) are PATH looks right, it is not clear that the DP following creation and consumption verbs is a PATH as well. Recall that Romeu (2012) has taken such cases, where a DP entity is created as in *Juan wrote a book*, as having a result element, representing it as a ResP. Contrary to Ramchand (2008) and Romeu (2012), I would suggest that since the examples in (54a and c) suggest resultative Transition events, the DPs can be taken as the culminations of a BECOME event. Consequently, the VPs can be represented with a null Res licensed by the BECOME event involved in Transition events. The possibility of a null Res will be further discussed in chapter 5.

It is worth noting that not all the motion verbs in (48) allow PATH as a complement. For example, *push*, *float* and *roll* cannot be used in this way. Hence, the ungrammaticality of (57).

(57) *She pushed/floated/rolled a mile/the race/the road.

I will return to the discussion of PATH in the next section, where I examine those verbs, which are tagged with a Res feature.

Finally, when a secondary predicate e.g. a PP is added, [Proc] Vs can also express a resultative Transition event. See the examples in (58).

(58) a. Then he turned and walked onto the ship. (BNC, W_fict_prose)
b. But he floated into the midst of a sea of water. (BNC, W_biography)

In these examples, the motion events suggest more than an activity of walking or floating. The verbs and the secondary predicates together give rise to a Transition event (cf. Levin & Rappaport Hovav 1995; Narasimhan 2003; Zubizarreta & Oh 2007; Gehrke 2008). In chapter 5, I discuss such cases and provide an analysis.

4.5.3 *[Proc, Res] Vs*

Examples of [Proc, Res] verbs are listed in (59), repeated from (47b).

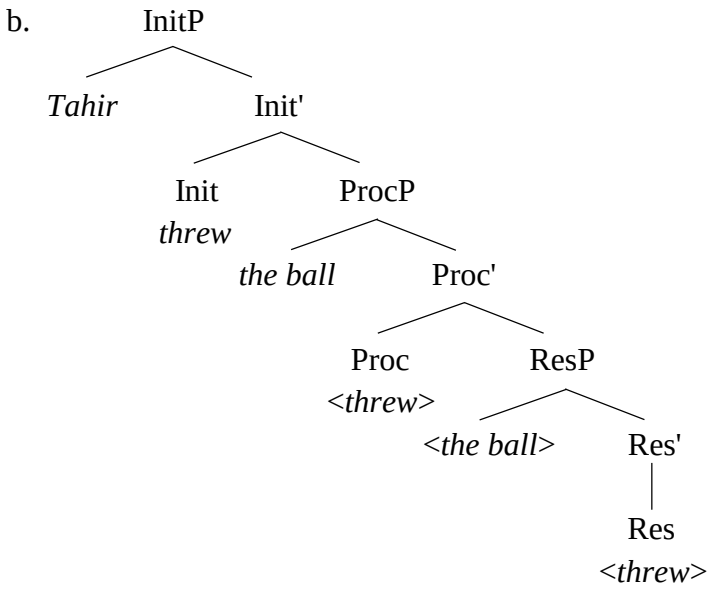
(59) [Proc, Res] Vs: *go, come, put, fall, kick, throw, enter, leave, arrive*

In Talmy (1985, 1991), most of these verbs are tagged with a Path element, and in Levin (1993) they are referred to as verbs of 'inherently directed motion'. In Ramchand (2008), they are tagged with a Res feature.[91] These verbs can "identify the result state of a process" (Ramchand 2008: 74). Although these verbs all share this property, they differ in their argument structure and types of complements they allow. For instance, some of the verbs are transitive, such as *put, kick, throw, enter, leave,* while some are intransitive, such as *fall* and *arrive*. In what follows I will try to capture the types of complements allowed by these verbs and their syntactic structure.

Although both *throw* and *enter* are transitive verbs, the DP following them has a distinct syntactic and semantic realisation as will be shown below. Illustrative examples of these verbs and their representations in the first-phase syntax are given in (60) and (61), respectively.

(60) a. Tahir threw the ball.

b.

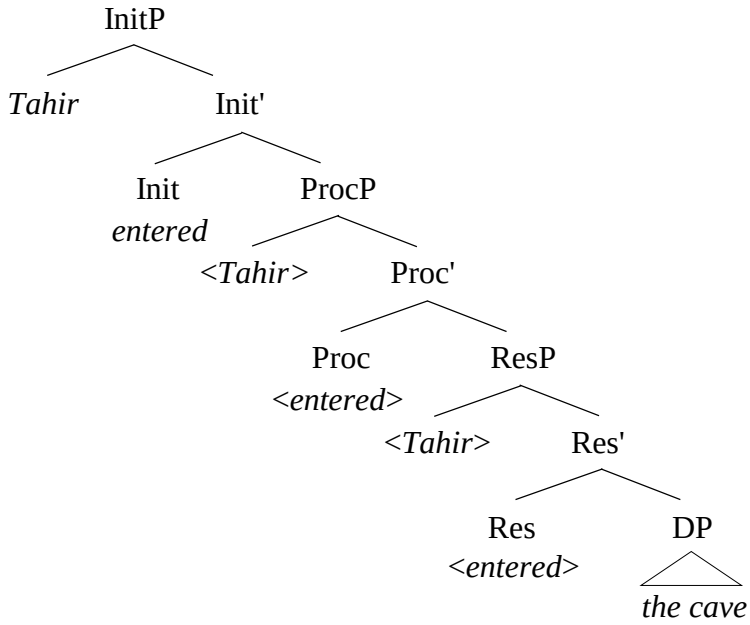


[91] The verbs *go, come* and *put* are usually referred to as light verbs since they do not have a major eventive contribution (Goldberg 1995; Zubizarreta & Oh 2007); they are included here because they are associated with a Res feature according to the diagnostics presented in section 4.5.1.

As shown in (60b), the verb *threw* is tagged with the three subevent elements [Init, Proc, Res], therefore it lexicalises all these functional heads. The verb *threw* is tagged with an Init feature because there is an initiation subevent, with *Tahir* causing the ball to undergo a throwing process. The verb also suggests a result event with the ball being thrown. In this example, *Tahir* is an INITIATOR, while *the ball* has a composite role being an UNDERGOER and a RESULTEE. Consider next the case of *enter*.

(61) a. Tahir entered the cave.

b.



In (61), the verb *enter* is tagged with [Init, Proc, Res] elements, hence its introduction under these nodes. The DP following the verb *enter* is not an UNDERGOER, but a complement. It is referred to as the DP Ground since it defines the final location of the RESULTEE. Moreover, as shown, the subject arguments recognised as the INITIATOR, UNDERGOER and RESULTEE in the relevant projections all refer to one and the same entity, basically because *enter* is an [Init, Proc, Res] verb.

Other types of complements allowed after Res verbs are spatial PPs, but not PATHs. In chapter 5, I will discuss the occurrence of different spatial PPs with such verbs. Consider:

(62) a. *Tahir entered a mile.

b. *Tahir went a road.

The reason why PATH is not allowed as a complement is that it represents a scale. The BECOME event involved in these verbs and represented as Res requires a culmination and not a scale. Hence the incompatibility of Res and PATH complement.[92]

4.5.4 *Interim summary*

Summarising, in this section I have discussed two main types of motion verbs in English: [Proc] Vs and [Proc, Res] verbs. The distinction was based on two main diagnostics: occurrence with Rel_{PLACE}Ps and types of DP complement allowed. [Proc] Vs mostly express an extended activity as with *run, walk, fly, swim*. Some of them are transitive and some intransitive. The direct object in case of transitive verbs can either be read as the UNDERGOER of the process, hence introduced in Spec-ProcP, or it can be the rheme of the process (that is a PATH) and thus the complement of Proc. In contrast, [Proc, Res] Vs involve a result event. The types of DP complements they allow are Grounds (not PATHs). Again some of them are transitive and some are intransitive. The direct object can either function as the RESULTEE (Spec-Res) or as the DP Ground (Res-complement).

The main aim of this section was to examine the general semantic and syntactic properties of these motion verbs which will help later discussion in chapter 5. There I will examine their occurrence with a wide range of spatial PPs across different languages. So far I have used English data to examine the structure of motion events and verbs. For the purpose of extending the claims and getting further evidence on their correctness, investigating other languages is essential. The two case studies I include here are Kurdish and Arabic. In the next sections, I aim at presenting a classification and a formal analysis of motion verbs in these languages based on Ramchand's (2008) first-phase syntax of verbs.

[92] There are also verbs which are ambiguous between the two types; these are semelfactive verbs such as *jump, kick, cough* and *flap*. These verbs can have a punctual (a single occurrence of an event) meaning and an activity (iterative) meaning (Comrie 1976: 42-43; Rothstein 2004: 183-7; Tungseth 2008: 144*ff*; Ramchand 2008: 79-81). In their punctual use, they behave more like Res verbs e.g. *fall* and *arrive*, while in their activity or iterative use, they behave more like Proc Vs such as *run* and *walk*. However, I do not discuss them since not many motion verbs of this class are found; the commonest one is *jump*. For a detailed account of *jump* I refer the reader to Ramchand (2008: 79-81).

4.6 Kurdish

Kurdish has a complex verb system due to the existence of several grammatical markers incorporated in the verb, such as tense, person, number, mood and voice. Kurdish verbs are also of two main types: simple and non-simple. In the following sections, first I present a brief outline of the types of verbs in Kurdish, which will provide a better understanding of the materials presented later. Later I will divide motion verbs into the [Proc] and [Proc, Res] classes and present an extended structure for the different types of verbs (e.g. simple, compound and complex) included in these classes.

4.6.1 *Types of verbs in Kurdish: an overview*

In the literature on Kurdish verbs there are two main classifications. Some authors identify two classes only: compound and complex (excluding the simple type) (e.g. Fattah 1987). According to this classification, verbs are made up of at least a stem and a tense marker which can be overt or covert. Others classify Kurdish verbs into the three types of simple, compound and complex (e.g. Ahmad 2004). This classification is based on the morphological or lexical make-up of the verb, where simple verbs are made up of one morpheme, compounds are made up of two elements (one verbal, one non-verbal) and complex verbs are composed of a verbal element and an affix.

While Fattah's (1997) classification looks entirely right as Kurdish stems can never exist by themselves, I use the classification in Ahmad (2004) to distinguish between simple, compound and complex on semantic grounds. That is, to show the meaning of the elements involved in simple and non-simple verbs, the tripartite classification is more explanatory. Examples of the three classes of verbs in Kurdish are given in table 4.3. For explanatory purposes, I put a hyphen between the two parts of the composite verbs.

Simple	Compound	Complex
fřīn ‘to fly’	*samā-kirdin* ‘to dance’	*řā-kirdin* ‘to run’
gařān ‘to wander’	*pyāsa-kirdin* ‘to stroll’	*řā-peřīn* ‘to uprise’
chūn ‘to go’	*mala-kirdin* ‘to swim’	*dā-bazīn* ‘to descend’
řoishtin ‘to go’	*jwān-kirdin* ‘to make pretty’	*dā-khistin* ‘to close’
hātin ‘to come’	*kār-kirdin* ‘to work’	*hał-sān* ‘to wake up’
dānān ‘to put’	*pirsyār-kirdin* ‘to ask’	*hał-chūn* ‘to get angry’
kawtin ‘to fall’	*biryār-dān* ‘to decide’	*dar-chūn* ‘to go out’
nārdin ‘to send’	*dang-dān* ‘to vote’	*te-geishtin* ‘to understand’
būn ‘to be’	*tek-dān* ‘to destroy’	*hātn-awa* ‘to come back’
mirdin ‘to die’	*ladāyik-būn* ‘to born’	*gařān-awa* ‘to return’
birdin ‘to take’	*birsī-būn* ‘to get hungry’	*kirdn-awa* ‘to open’
birīn ‘to cut’	*bare-kawtin* ‘to travel’	*birdn-awa* ‘to win’

Table 4.3 Types of verbs in Kurdish[93]

Examples of these three types are given in (63), followed by a brief overview of their properties.[94]

(63) a. chū-n bo kitebkhāna [simple]
go.PST-3PL to library
‘They went to library.’

b. dīwār-aka darzī-bird [compound]
wall-DEF crack-take.PST.3SG
‘The wall cracked.’

c. řā-mān-kird bo māł-awa [complex]
away-1PL-do.PST to house-PLACE
‘We ran to home.’

The verb *chū* ‘went’ in (63a) is a bimorphemic word that is inflected for tense and person. *chū* is an intransitive verb and mostly followed by goal-denoting PPs. The

[93] The verbs given in this table and table 4.4 are in the infinitival form.

[94] Although there is disagreement among Kurdish grammarians and authors with regard to the existence of the simple verb type in Kurdish, I will not be commenting on this debate since it does not affect my later analysis of motion verbs. For details the reader is referred to Fattah (1997) and Ahmad (2004).

subject of the verbal predicate is not realised overtly; but through the subject-verb agreement marker that appears on the verb (*-n*) it is taken to be a third person plural pronoun (null *pro*) represented as ('they') in the English translation. (63b) is an example of a compound verb. As mentioned above, compound verbs are made up of a verbal element and a non-verbal element. The verbal element is usually a light verb which does not have a prominent meaning, but it is the element that carries the tense and subject-verb agreement markers (although they are unmarked in many cases). The non-verbal element of the compound class varies between the lexical categories of nouns, adjectives, adverbs and prepositions. The meaning of the compound verbs is determined mostly by the non-verbal element (see Fattah 1997; Ahmad 2004; Gharib & Pye 2011). In (63b), the non-verbal element is *darz* 'crack' and the verbal is *bird* 'take', giving *darz-birdin* 'to crack'. The two elements of compound verbs can be separated, as in:

(64) sar la māł-ī khushk-ī da-dā
head at house-IZ sister-POSS.3SG ASP-give.PRS.3SG
'She visits her sister's house.'

In (64), the non-verbal element is *sar* 'head' and the verbal is *-dā* 'give', giving *sardān* 'to visit'. The two elements are split by the PP *la māłi khushkī* 'at her sister's house'. Finally, complex verbs are made up of a verbal element and a prefix or suffix. Common prefixes or preverbal elements are *řā-*, *hał-* and *dā-*. The only suffix available in complex verbs is the suffix *-awa*. Unlike compound verbs, the two elements of complex verbs cannot be separated. They can, however, be separated by grammatical categories such as subject clitics, as in (63c). The meaning of the preverbals *řā-*, *hał-* and *dā-* is not quite predictable. Fattah (1997: 140) claims the following basic meanings for them: 'away', 'up' and 'down', respectively. However, the meanings of these preverbals cannot always be predicted. Consider the case of *řā-* in (65):

(65) a. řā-yān-kird
away-3PL-do.PST
'They ran/ran away.'
b. řā-wast-ān
away-stop.PST-3PL
'They stopped.'

While the 'away' meaning of the preverbal *řā-* may contribute in a way to the semantics of the complex verb in (65a), it does not in (65b). This unpredictability is due to the semantic change or shift undergone by these elements in the development of the language.

As to the suffix *-awa* 'back/again', Fattah (1997: 145) states that semantically it is unpredictable and irregular. Ahmad (2004: 12-13) recognises three types of verbs ending with *-awa* in Kurdish. In type (1), *-awa* has a crucial role and the verb will be meaningless without it (e.g. *shārdin-awa* 'to hide', *ḥawān-awa* 'to rest'). In type (2), the verbs can be used independently, while *-awa* expresses an iterative meaning (e.g. *chūn-awa* 'to go again', *pirsīn-awa* 'to ask again'). In type (3), *-awa* attaches to verbs, which can occur independently with a distinct meaning, forming a new lexical meaning (Ahmad 2004: 13). For example, when *keshān* 'to weigh' is affixed with *-awa*, the result is *keshān-awa* 'to withdraw'. In section 4.6.3 I suggest a syntactic analysis for complex motion verbs which involve *-awa* (see discussion there).

4.6.2 *Motion verbs in Kurdish*

In this section I focus on the syntax and semantics of motion verbs as used in Kurdish. On the basis of the availability of a Res feature, Kurdish motion verbs can be classified into two main classes parallel to those of English. Examples of the two classes are given in table 4.4.

[Proc] Vs	**[Proc, Res] Vs**
řākirdin 'to run'	*kawtin* 'to fall'
pyāsakirdin 'to stroll'	*gařānawa* 'to return'
fřīn 'to fly'	*hātnawa* 'to come back'
malakirdin 'to swim'	*chūn* 'to go'
gařān 'to wander'	*hātin* 'to come'
samākirdin 'to dance'	*dānān* 'to put'
pāzdān 'to jump'	*dābazīn* 'to descend'
	darchūn 'to go out'
	pařīn/pařīnawa 'to cross'

Table 4.4 Typology of motion verbs in Kurdish

To determine whether a motion verb in Kurdish is associated with a Res feature or not, beside relying on my intuitions as a native speaker, I use the test of occurrence with Rel_{PLACE}Ps and the type of DP complements. The discussion shows that the first test is not useful for Kurdish data.

To start with, Rel_{PLACE} Ps such as *la* 'in/at', *lasar* 'above' and *lazher* 'below' can occur with the verbs in the left column and they express a locative reading only.

(66) a. la řūbār mala-mān-kird [locative/*directional]
in river swim-1PL-do.PST
'We swam in the river.'

b. lasar shar-aka fřī [locative/*directional]
above city-DEF fly.PST.3SG
'It flew above the city.'

c. lazher pird-aka pyāsa-mān-kird [locative/*directional]
below bridge-DEF stroll-1PL-do.PST
'We strolled below the bridge.'

As to the verbs listed in the right column, most of them do not occur with Rel_{PLACE} elements, such as *chūn* 'to go' and *hātin* 'to come'. Such verbs can nevertheless be classified as Res verbs because they express a punctual event, not an extended one. Some verbs, such as *dānān* 'to put', can occur with Rel_{PLACE}Ps, giving rise to a directional reading. For example, in:

(67) nām-aka-m la sar mez-aka dānā
letter-DEF-1SG at top table-DEF put.PST.1SG
'I put the letter on the table.'

the PP defines the final location of the letter, and therefore a result reading is expressed. In chapter 5, I provide a syntactic analysis of these examples. In brief, (except the case in (67)) the test of occurrence with Rel_{PLACE} Ps is not a useful tool to determine the nature of the two classes in Kurdish. The occurrence of such PPs with [Proc] Vs gives

rise to a locative reading only, and their occurrence with [Proc, Res] Vs is not common.[95]

Next I use the test of types of DP complements allowed after each of these classes. In particular, I examine whether DP PATH is allowed after [Proc] Vs. In Kurdish, DPs denoting PATH occur with [Proc] Vs, but not [Proc, Res] Vs. Illustrative examples are:

(68) a. min mīl-ek řā-m-kird[96]
I mile-INDF away-1SG-do.PST
'I ran a mile.'

b. min mīl-ek mala-m-kird
I mile-INDF swim-1SG-do.PST
'I swam a mile.'

c. *min mīl-ek kawt-im
I mile-INDF fall.PST-1SG
'*I fell a mile.'

d. *min mīl-ek chū-m
I mile-INDF go.PST-1SG
'*I went a mile.'

In (68a), *mīlek* 'a mile' is the distance of a PATH that the Figure runs. This meaning is possible because the verb *řākirdin* 'to run' expresses an extended process. The same is true for (68b) where the Figure swam for a mile. In contrast, this DP PATH is not possible in (68c-d) because the verb used expresses a punctual event. One cannot fall or go a mile, hence the ungrammaticality of the examples in (68c and d). Through this test of allowing a DP PATH, one can distinguish between the verbs given in table 4.4. Following Ramchand (2008), in the next section I provide an extended V projection for these motion verbs.

[95] Note that some [Proc, Res] Vs, such as *garānawa* 'to return' and *dābazin* 'to descend', can occur with the source-denoting version of *la* 'from'. This should not be understood as *la* 'in/at' (see chapter 3, section 3.7.2 for a discussion on the homonymous case of *la*).

[96] Note that in (68a), it is also possible to insert the PATH within a PP, e.g. *bo yak mīl řāmkird* (lit. 'I ran for one mile').

4.6.3 *An extended V projection for motion verbs in Kurdish*

While the task of providing an extended V projection seems straightforward for motion verbs within the simple class, it is not for the compound and complex classes. As mentioned in section 4.6.1, regardless of the incorporated grammatical markers, simple verbs are made up of a single morpheme; compound verbs are made up of a non-verbal element (e.g. a noun, adjective, preposition) and a light verb; and complex verbs involve a prefix or suffix and a verbal element. In order to suggest an extended V projection for motion verbs within the compound and complex classes, determining the syntactic and semantic properties of the verbal and non-verbal elements is essential. More precisely, we need to determine how these elements interact and what they contribute to the event structure. Answers to these questions will determine the functional heads under which they fit in a motion V projection.

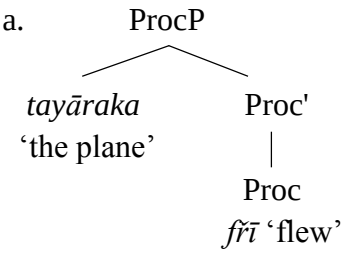
A look at the distribution of the verbs in table 4.4 shows that the [Proc] Vs mostly involve simple verbs and compound verbs ending with the verbal element *-kirdin* 'to do', while the [Proc, Res] Vs involve simple and complex verbs. First I will consider the syntactic representation of the simple verbs within both classes. (69a) is an example of a [Proc] verb, and (69b) is an example of a [Proc, Res] verb. In (70a-b), I present their respective tree structures.[97] For the syntactic structures I adopt Kayne's (1994) antisymmetry theory, assuming a Spec-Head-Complement order.

(69) a. tayār-aka fŕī
plane-DEF fly.PST.3SG
'The plane flew.'

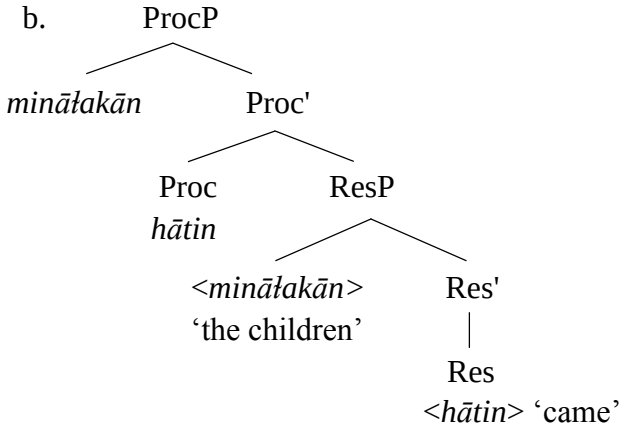
b. mināł-ak-ān hāt-in
child-DEF-PL come.PST-3PL
'The children came.'

[97] In the analyses, I abstract away from representing the positions of the grammatical categories of tense, agreement, aspect and the like. In addition, in my examples of Kurdish I stick to the past form since it shows the verb stem more fully.

(70) a.



b.



In (70a), the DP argument *tayāraka* ‘the plane’ is introduced in Spec-ProcP because it is the entity that undergoes the flying process. The verb *fřī* ‘flew’ lexicalises the Proc head. In (70b), the DP *mināłakān* ‘the children’ first lexicalises the Spec-ResP and then moves up to merge with the Proc' since it has a composite role: it is the UNDERGOER and RESULTEE of the event. As to the verb *hātin* ‘came’, it lexicalises the Res terminal node which first merges with the DP *mināłakān* ‘the children’ in its Spec and projects the Res label. It then remerges with ResP since it has a Proc feature and projects the Proc label.

I turn now to the syntactic representation of the composite verbs within the classes of compound and complex verbs. To start with, consider the examples in (71), which express Process events:

(71) a. mala-mān-kird
swim-1PL-do.PST
‘We swam.’

b. samā-mān-kird
dance-1PL-do.PST
‘We danced.’

Morphologically these verbs are made up of two elements, a nominal element (*mala* ‘swim’ and *samā* ‘dance’) and a light verb (*kird* ‘did’). As to the morpheme *-mān*,

which separates the two parts of these compound verbs, according to Kareem (in preparation) and Anders Holmberg (p.c.), it represents a subject clitic in the past tense and certain other constructions. Subject clitics usually appear on the direct object in case of transitive structures, (72a), or the initial part of the composite verbs, (71a-b), or the DP complement in a PP, (72b). Since these subject clitics pose all kinds of further analytic complications which do not play any role in the verb-PP relation that is the focus of this thesis, I largely disregard them in the further structural analysis.

(72) a. nām-aka-mān nārd
letter-DEF-1PL send.PST.1PL
'We sent the letter.'
b. la kūr-aka-yān dā
at boy-DEF-3PL hit.PST.3PL
'They hit the boy.'

The element *kirdin* 'to do' is a very productive light verb in Kurdish. It combines with a large number of nouns or adjectives to form a compound verb (see table 4.3 for examples).[98] When the non-verbal element and the verbal element are combined, they give rise to a complex predicate which expresses a Process event in this case. Although the two elements are combined in a way that suggests they form one whole lexical unit, they are distinct semantically and syntactically. Semantically the nominal elements provide substantive information which contributes in a large measure to the overall lexical meaning of the whole verb. As to the light verb *kird* 'did', it has a bleached non-substantive meaning. Syntactically, I argue that each of these elements lexicalises a specific functional element determined by their semantic content. The question that arises is what functional element each lexicalises in a motion V projection.

As a preliminary to answering this question, it is worthwhile reviewing studies on certain comparable items in Persian. Similar to Kurdish, Persian has a large number of compound verbs which are composed of a preverbal element and a light verb, e.g. *bāzi kardan* [play-do] 'to play', *āqāz kardan* [beginning-do] 'to begin', *pas dādan* [back-give] 'to return', *sarmā xordan* [cold-eat] 'to catch cold', etc. (Dabir-Moghaddam 1997:

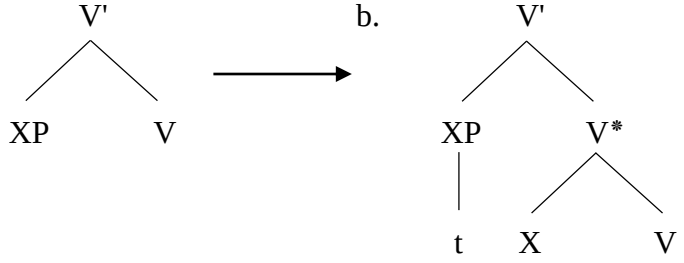
[98] The light verb *kirdin* can also mean 'to make' as in *nān-kirdin* [bread-making] 'baking bread'. Under this meaning, this light verb is associated with a Res feature. However, I do not include in the discussion undertaken in this thesis because it is not a motion verb.

38). The combination of these two elements gives rise to a complex predicate (CP). Determining the syntactic and semantic structure of such complex constructions has been an issue that attracted the attention of several researchers in the literature on the syntax and semantics of Persian (see e.g. Vahedi-Langrudi 1996; Megerdoomian 2001; Karimi-Doostan 2005; Folli, Harley & Karimi 2005; Pantcheva 2009).

Vahedi-Langrudi (1996) discusses the morphological and syntactic characteristics of such complex predicates in Persian. Morphologically they behave like lexical X^o elements (X^o morphological objects) with a structure like $[_{V^o}\ X^o+V^o]$ but syntactically they have phrasal properties acting as XPs with a structure like $[_{V'}\ XP^o+V^o]$ (see Vahedi-Langrudi 1996: 10-33 for details). To account for this double nature of complex predicates in Persian, Vahedi-Langrudi (1996) proposes that complex predicate formation in Persian is a process involving both the syntactic component and the lexical component. More precisely, he argues that complex predicates in Persian have a Lexical Relational Structure (LRS) representation which is a lexical-syntactic level derived through conflation.

He assumes that in syntax the preverbal elements are predicates functioning as the sole inner complements of the light verbs and together they form a complex predicate (CP) within V' which is taken as a phrasal CP structure (see Larson 1988; Hale & Keyser 1993). Moreover, in morphology the preverbal elements conflate into the light verbal heads leading to the lexicalisation of the CP. The syntactic and morphological configurations of these two levels are presented in (73a-b), respectively. The arrow represents the direction of derivation from the syntactic level (the LRS), (73a), to the morphological level (the conflated form), (73b).

(73) a.

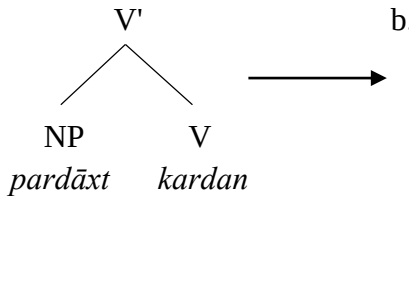


b.

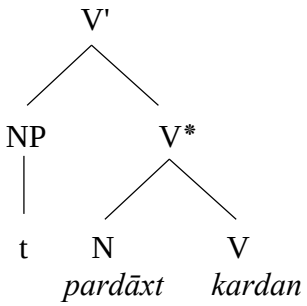
As can be seen, structure (73a) reflects the separate syntactic behavior of the two elements involved in compound verbs while (73b) shows their unit-like behavior. A concrete example that shows the CP-formation process in Persian is given in (74a-b) for

the compound verb *pardāxt-kardan* [payment-do] 'to pay'. I represent the XP as NP since the preverbal element is a noun in this example.

(74) a.



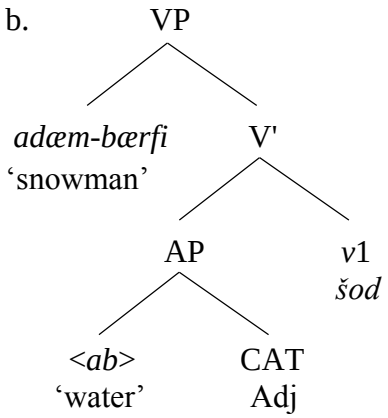
b.



Similarly, following ideas in Larson (1988) and Hale and Keyser (1993) on argument structure, Megerdoomian (2001) applies a syntactic approach to analyse the event structure of complex predicates in Persian. She proposes a compositional analysis whereby the preverbal element and the light verb are combined in syntax. According to Megerdoomian (2001) compound verbs are not listed as lexical entries in the lexicon. The latter contains root elements (preverbal elements), functional elements and categorial features. To illustrate, the syntactic structure she proposes for the example given in (75a) is as in (75b), adapted from Megerdoomian (2001: 109-110).

(75) a. Adæm-bærfi ab-šod
man-snowy water-become.PST.3SG
'The snowman melted.'

b.



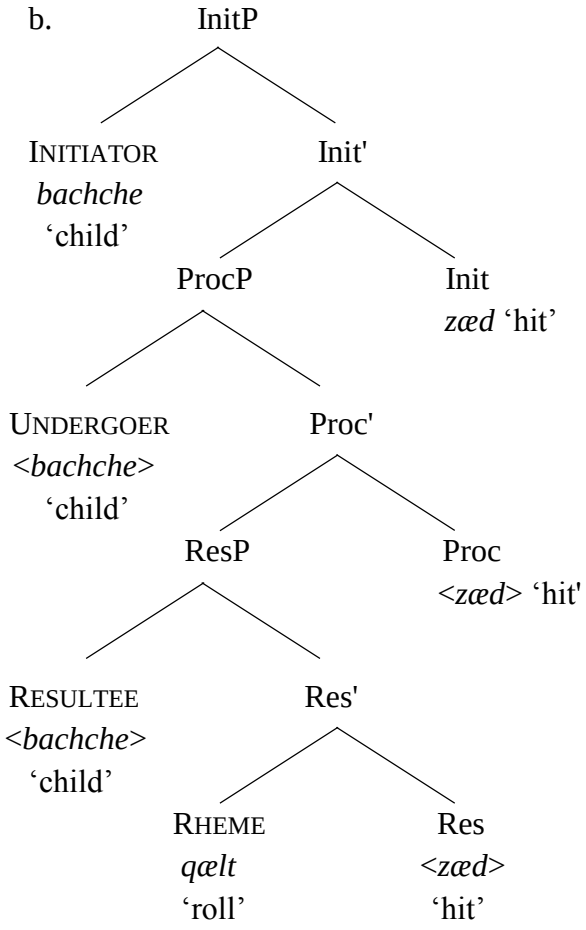
For Megerdoomian (2001), the VP in (75b) represents the inner event (=Ramchand's (2008) ResP) which encodes the result state of the event of melting. The root element *ab* 'water' combines with a functional category, in this case adjectival in nature, and together they form an Adjectival predicate. The AP in turn combines with the functional

head *v*1, which is headed by the light verb *šod* 'became', and together they form a verbal predicate. The Adjectival predicate represents a resulting State, and the functional element represents the Event.

Finally, in a recent study of Persian complex predicates that involve compound verbs, Pantcheva (2009) applies Ramchand's (2008) first-phase syntax of verbs. She suggests that the light verbs lexicalise the functional heads Init, Proc and Res, and the non-verbal elements occupy the RHEME position. She takes the preverbal elements to be complements because they form part of the predicate and determine its telicity. An illustrative example is given in (76a) and its corresponding tree diagram is as in (76b), adapted from Pantcheva (2009: 62):

(76) a. bæchche qælt zæd
child roll hit
'The child rolled.'

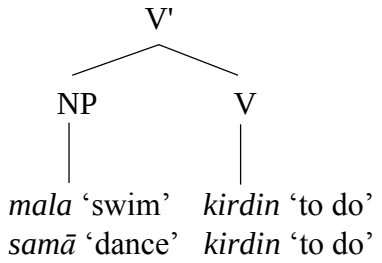
b.



In the syntactic structure in (76b), the light verb *zæd* 'hit' is associated with the features [Init, Proc, Res], thus it lexicalises the three subevent heads and also projects the three Spec positions in the verbal predicate. The only argument in the example in (76a) is *bachche* 'child' which first merges with Res' as a RESULTEE and then moves up to merge with Proc' as an UNDERGOER and later with Init' as an INITIATOR. As to the preverbal element *qælt* 'roll', it is hosted by the RHEME.

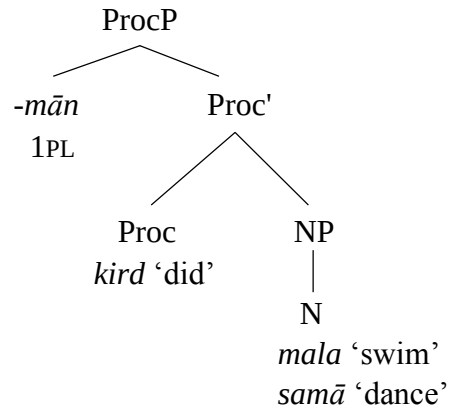
To conclude, a general observation about these analyses, in particular Vahedi-Langrudi (1996), is that complex predicates/compound verbs in Persian form a unit that is bigger than a lexical word but smaller than a phrase. Moreover, applying a syntactic approach to account for the syntactic and semantic contribution of the two elements involved in such constructions provides a promising analysis. In all these studies, the preverbal elements are taken to form the complement of the light verb and then both components form a complex predicate. Given the similarity between the relevant elements in Kurdish and Persian, I apply the basic ideas proposed in these studies to provide an extended structure for motion verbs within the composite class in Kurdish. I propose that the compound verbs exemplified in (71a-b) have the syntactic structure in (77):

(77)



According to this structure, which is also in line with Hale and Keyser's (1993, 2002) model of syntactic derivation, the non-verbal element conflates into the verbal head and form a V-bar. Translating this structure into Ramchand's (2008) model, the substantial claim which I propose is presented in the structure in (78) for the compound verbs in (71).

(78)



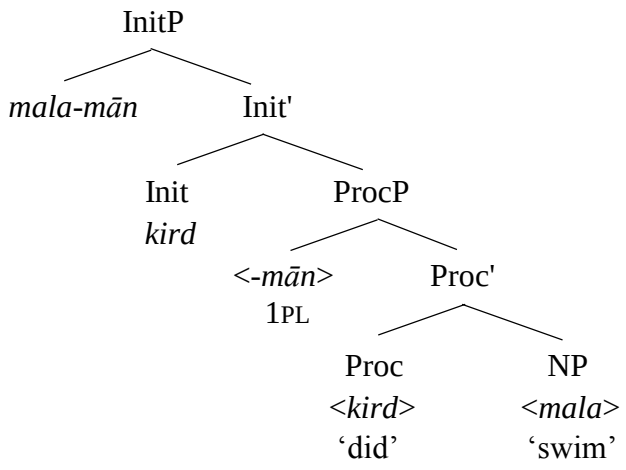
In this structure, the non-verbal elements are complements of the Proc head and introduced under NP since they are nouns. The light verb is under the Proc terminal node since it is the part that carries the action. The Spec is lexicalised by the subject clitic *-mān* ‘we’, which represents the UNDERGOER argument. Since I apply Kayne’s (1994) antisymmetry theory, the order shown of the two components of the compound class is *kird + mala* and *kird + samā*. The process(es) responsible for the general verb-final character of Kurdish will produce the surface order. This does not affect the analysis assumed for these verbs, especially if we assume in line with Megerdoomian (2001) that compound verbs are not listed in the lexicon as lexical units. It is rather their elements which are listed.

Furthermore, following Ramchand’s VP tripartite model, I propose that the subject clitic *-mān* originates in Spec-Proc and then it moves to Spec-Init, because it represents both the UNDERGOER and the INITIATOR of the events of swimming and dancing. Then, on one hand, the nominal elements *mala* ‘swim’ and *samā* ‘dance’ originate under the NP in the Proc-bar and then they move to Spec-Init where the subject clitic attaches to them as it needs a host. On the other hand, the light verb *kird* ‘did’ originates in the Proc node and then it moves up to lexicalise the Init node and project the Spec-Init. The structure I propose is represented as in (79) for the case of *mala-mān-kird* ‘we danced’:[99]

[99] It is worth mentioning that in cases where the subject is lexically overt and these subject clitics still appear on the object or the nominal element in compound verbs, as in (i), it can be taken as a case of topicalization. That is the lexical subject is in an A-bar position, binding the subject clitic:

(i) min nām-aka-m nārd
I letter-DEF-1SG send.PST.1SG
'I sent the letter.'

(79)



In this way, I distinguish between elements that can lexicalise the Spec-ProcP and the non-verbal elements in case of compound verbs denoting motion. Note that, although both the direct object and non-verbal elements precede the verb and both can carry a subject clitic, they are two distinct categories. Contrast (80a) and (80b). Example (80a) is repeated from (72a) and example (80b) is repeated from (71b).

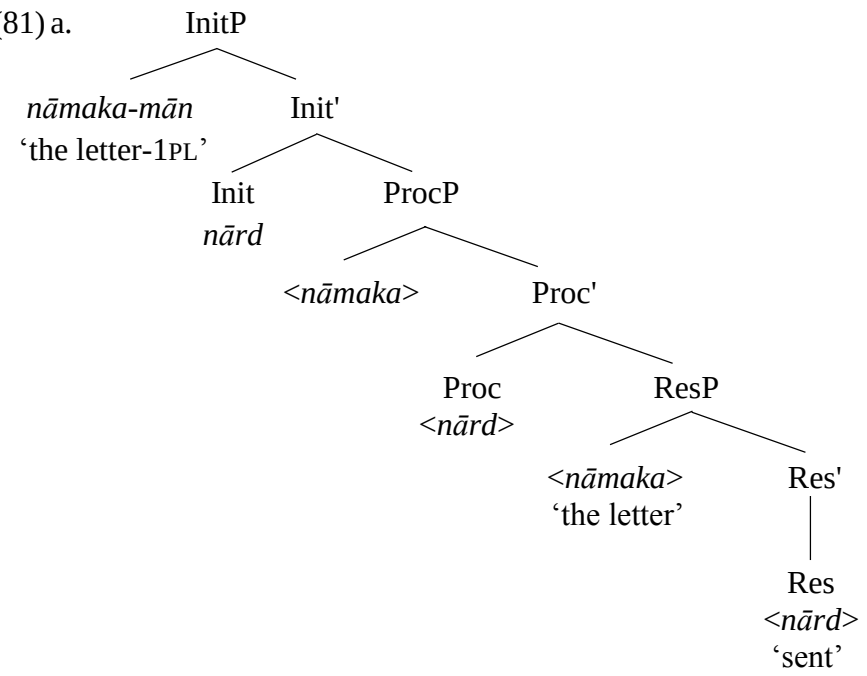
(80) a. nām-aka-mān nārd
letter-DEF-1PL send.PST.1PL
'We sent the letter.'

b. samā-mān-kird
dance-1PL-do.PST
'We danced.'

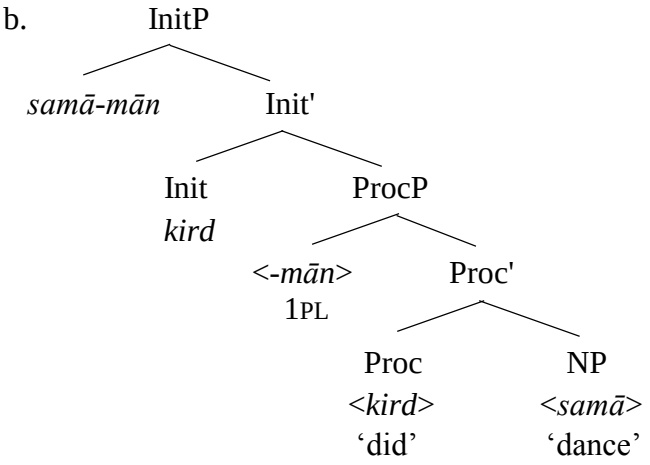
As can be seen, both *nāmaka* 'the letter', which is an internal argument of the verb, and *samā* 'dance', which is a noun element conflated into the verbal element to form a compound verb, occur before the verb. Besides, a subject clitic follows both of them. Despite the apparent similarity, the two elements are distinct on a syntactic and semantic basis. Syntactically they occupy a different position in the V projection due to their distinct semantic function. Semantically, internal arguments can be UNDERGOERS, while nominal elements in compound verbs cannot. Thus, in (80a), since the verb is of the [Proc, Res] type, *nāmaka* 'the letter', which is the direct object of the verb, undergoes a sending process and is also the RESULTEE, while the subject clitic *-mān* represents the INITIATOR argument. In contrast, in (80b) *samākirdin* 'to dance' is a [Proc] verb. The noun *samā* 'dance' is not the internal argument because it cannot undergo a process, nor initiate a process or hold the result state of an event. The element

that lexicalises the Spec in InitP and ProcP is the subject clitic *-mān* which has a composite role of INITIATOR-UNDERGOER. Based on this, the structure I propose for these examples is as in (81a-b), respectively.

(81) a.



b.

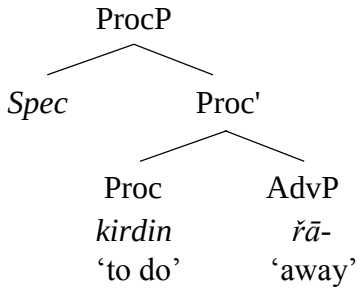


In (81a), I assume that *-mān* originates in Spec-InitP since it is the INITIATOR of the sending event. *nāmaka* is the UNDERGOER, hence its realisation in Spec-ProcP. It then moves to Spec-InitP to incorporate with the clitic *-mān*. In contrast, in (81b) I assume that *-mān* originates in Spec-ProcP because it represents the UNDERGOER argument and then merges with Init' since it is the INITIATOR of the dancing as well. As can be seen in structure (81a), both the INITIATOR and the UNDERGOER argument occur in Spec-InitP. This should not cause any clash with what is proposed in Ramchand (2008) that only arguments which are INITIATORS are in Spec-InitP. The incorporation of the UNDERGOER

argument into the subject clitic in Spec-InitP is to satisfy the morphology of the Kurdish language, which requires hosting the subject clitic by a proper element.

Next I analyse the elements involved in complex verbs. In Kurdish, such verbs are either made up of a prefix or a suffix and a verbal element. As mentioned in section 4.6.1, the prefixes have undergone a semantic shift (Fattah 1997), so their semantic contribution to the complex verb is not predictable. An example is *řā-* in *řākirdin* 'to run' (see the discussion in section 4.6.1, example 65 in particular). Following the same line of analysis proposed in (78), I propose the structure in (82) to represent the complex verb *řākirdin* 'to run'.

(82)



Since the element *řā-* suggests an adverbial meaning, I present it under AdvP. Moreover, the verb *řākirdin* expresses a running activity, hence its representation as a ProcP in (82). As to the complex verbs that suggest a result subevent, consider these examples:

(83) a. mināł-ak-ān dar-chū-n
child-DEF-PL out-go.PST-3PL
'The children went out.'

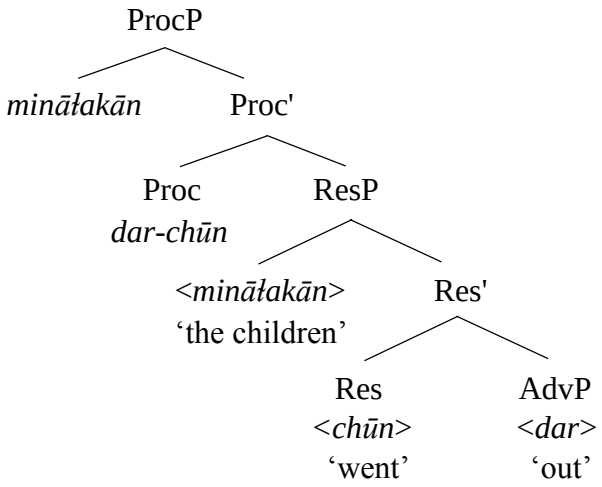
b. mināł-ak-ān chū-n-awa
child-DEF-PL go.PST-3PL-back
'The children went back.'

c. mināł-ak-ān gařā-n-awa
child-DEF-PL move.PST-3PL-back
'The children returned.'

All these complex verbs express a punctual event, more precisely a lexical Transition event, and thus I have classified them as [Proc, Res] Vs (see table 4.4). A question that arises with such verbs is whether the Res feature is suggested by the verbal or non-

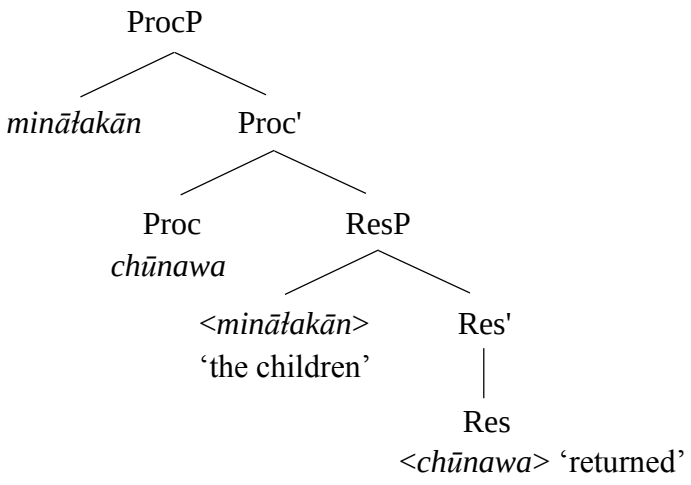
verbal element. In (83a), the verbal element is the simple verb *chū* 'went' which I classified as a [Res] V due to its punctual meaning and also because it does not allow a DP PATH as its complement. The non-verbal element *dar-* 'out' supplies further information, which is that of adverbial. For example, we can assume that it specifies the culmination of the BECOME event, meaning 'to go out'. Based on this observation, I propose that the Res feature is suggested by the verbal element, not the non-verbal one. The tree diagram I propose for example (83a) is as in (84), in which I take the non-verbal element *dar-* 'out' to function as a complement but undergoes movement to the Proc node giving *darchūn*. It is worth mentioning that in a present tense construction as in *dar-da-chin* [out-ASP-go] 'go out', the non-verbal element *dar*-moves further up to the Aspect phrase. The different attachments displayed by these non-verbal elements do not violate any syntactic condition and are motivated by the complex morphology of the Kurdish language.

(84)



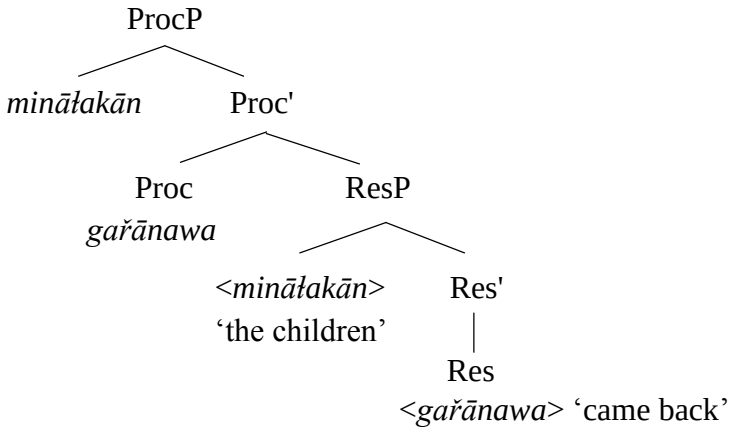
While things look relatively straightforward with the preverbal elements, this is not the case with the suffix *-awa*, especially in those cases where the meaning is actually not 'back' (e.g. type 1 and 3 in Ahmad (2004), see section 4.6.1). The question that arises is: what functional node does *-awa* lexicalise? I start with the example in (83b), where *-awa* has a 'back' meaning, for which I suggest the structure in (85). In this structure, I assume that the suffix *-awa* incorporates into the verbal element *chūn* which lexicalises the Res subevent, before the whole item moves up to lexicalise Proc.

(85)



As to (83c), the complex verb *gařān-awa* ‘to go back/to return’ is made up of the verb *gařān* ‘to move/walk’, which expresses a process, and *-awa*, which suggests a ‘back’ meaning again. Their combination results in turning the verb into a [Proc, Res] V. In this case, the result subevent is triggered by the ‘back’ meaning of *-awa*. Does that mean *-awa* lexicalises Res? This would conflict with the above analysis where I assumed that the Res feature is recognised in the verb *chūn* ‘to go’. A way out of this dilemma is to take complex verbs where the two elements are strongly fused, especially those ending with *-awa*, as one whole unit. Hence, I propose the structure in (86) for the example in (83c). This analysis is especially helpful for type 1 and 3 in Ahmad’s (2004) classification of *-awa* (e.g. *shārdin-awa* ‘to hide’ and *keshān-awa* ‘to withdraw’) where no particular independent meaning can be assigned to *-awa*.

(86)



To sum up, based on their association with a Res feature, I classified motion verbs in Kurdish into two classes: [Proc] Vs and [Proc, Res] Vs. For the classification I used the test of allowing the DP PATH as a complement. In general, [Proc] Vs are of the simple (e.g. *fřīn* ‘to fly’) and compound class (e.g. *malakirdin* ‘to swim’), while [Proc, Res] Vs

are of the simple (e.g. *kawtin* 'to fall') and complex class (e.g. *darchūn* 'to go out'). Moreover, using Ramchand's (2008) model and following ideas in the analysis of parallel elements in Persian (e.g. Vahedi-Langrudi 1996; Megerdoomian 2001; Pantcheva 2009), I have proposed an extended V projection for the compound verbs denoting motion in Kurdish. I have extended the structure to complex verbs as well. I have taken the non-verbal elements to be complements of the light verbs and form a V-bar. This works well for the preverbal elements but the suffix *-awa* is more challenging.

Finally, on one hand, the composite verbs provide evidence for the VP structure proposed by Ramchand (2008). For instance, the *-kirdin* 'to do' verbs represent the Proc element. On the other hand, Ramchand's (2008) model helps show the difference between internal arguments and the nominal elements involved in compound verbs denoting motion in Kurdish. For example, internal arguments can be UNDERGOERS, but nominal elements cannot.

4.7 Arabic

Similar to Kurdish, Arabic verbs are inflected for grammatical categories, such as gender, number, person, tense and voice. But contrary to Kurdish, Arabic has auxiliary verbs (e.g. *kāna* 'was', *ṣāra* 'became'), main verbs (e.g. *darasa* 'studied', *sāfara* 'travelled') and serial verb constructions. The serial verb constructions are made up of an auxiliary verb and a main verb (e.g. *kāna yadrus* 'he was studying') (for more details, see Brustad 2000: 141-148; Ryding 2005: 451-454). In this study I focus on constructions made up of main verbs only.[100] I will show that motion verbs in Arabic can be divided up into [Proc] and [Proc, Res] Vs on the basis of the two diagnostics used in the analysis of parallel data in English. An extended structure is also provided for the two classes at the end.

4.7.1 *Motion verbs in Arabic*

There are not many studies of the semantic classification of verbs in Arabic. The main work available are Fassi Fehri (2005) and Bernini (2010), which focus on motion events in general. For instance, in terms of meaning-based classification, Fassi Fehri (2005)

[100] Since there is no fundamental difference between verbs in Modern Standard Arabic and Iraqi Arabic, I include examples from MSA only in this chapter and chapter 5.

applies Vendler's (1957, 1967) four classes of events to Arabic data. The examples in (87), adapted from Fassi Fehri (2005: 7), show that the four types of events can be found in MSA.

(87) a. 'arafa ar-rajul-u al-jawāb-a [State]
know.PST.M3SG DEF-man-NOM DEF-answer-ACC
'The man knew the answer.'

b. jarā al-walad-u [Activity]
run.PST.M3SG DEF-boy-NOM
'The boy ran.'

c. 'akala ar-rajul-u tufaḥat-an [Accomplishment]
eat.PST.M3SG DEF-man-NOM apple-ACC
'The man ate an apple.'

d. wajada ar-rajul-u al-ḥal-a [Achievement]
find.PST.M3SG DEF-man-NOM DEF-solution-ACC
'The man found the solution.'

Since Vendler's classes refer to predicates rather than verbs, I will not use the Vendlerian classification to analyse the lexical semantics of Arabic verbs. Instead I classify them according to the subevental heads they instantiate in Ramchand's (2008) first-phase syntax of verbs. In particular, I will focus on distinguishing between those verbs that instantiate only Proc and those that instantiate Proc as well as Res. In table 4.5 I list some verbs that belong to these two main classes. The examples are of MSA and the verbs are in the past form as this is the citation form.

[Proc] Vs	**[Proc, Res] Vs**
rakaḍa ‘ran’	*dakhala* ‘entered’
hara‘a ‘ran’	*kharaja* ‘exited/went out’
sāra ‘walked’	*ghādara* ‘left’
ṭāra ‘flew’	*‘abara* ‘crossed’
sabaḥa ‘swam’	*ṣa‘ada* ‘climbed’
tamashā ‘strolled’	*nazala* ‘descended’
tajawala ‘wandered’	*raja‘a/‘āda* ‘returned’
zaḥafa ‘crawled’	*saqaṭa* ‘fell’
	dhahaba ‘went’
	’atā ‘came’

Table 4.5 Typology of motion verbs in Arabic

For the classification, I applied the test of occurrence with Rel_{PLACE}Ps and PATH complement since they have validity for Arabic data. For example, if the Rel_{PLACE}P has a locative reading, the verb is assumed to be non-Res; but if the Rel_{PLACE}P suggests a directional reading, then the verb is associated with a Res feature. Consider the examples in (88):

(88) a. sirnā fawq at-tal [locative/*directional]
walk.PST.1PL above DEF-hill
‘We walked on the hill.’

b. ṣa‘adnā fawq at-tal [*locative/directional]
climb.PST.1PL above DEF-hill
‘We climbed onto the hill.’

In (88a), *sāra* ‘walk’ is a [Proc] verb since its combination with the Rel_{PLACE}P *fawq attal* ‘above the hill’ does not cause the latter to suggest a directional reading. The PP defines the location of the activity of running. In contrast, in (88b) *ṣa‘ad* ‘climbed’ is a [Proc, Res] verb because the Rel_{PLACE}P *fawq attal* ‘above the hill’ suggests a directional reading, where the Figure climbs the hill and ends up there at the top of it. Interestingly, in the example in (88b) the PP does not have a locative reading, where the PP defines the location of climbing. The only way that the PP can have a locative reading is when something else, say a tower, a house or a ladder, is climbed on top of the hill. So a

locative reading of the PP *fawq attal* ‘above the hill’ in (88b) is not available unless that something is specified, as in *ṣa‘adna burjan fawq attal* ‘we climbed a tower on the hill’.

Furthermore, the test of PATH complements shows that [Proc] Vs allow PATHs as their complements, while [Proc, Res] Vs do not. For example, The verb *sāra* ‘walked’ allows the DP *mīl* ‘mile’ as its complement, (89a), whereas the verb *dhahaba* ‘went’ does not, (89b).

(89) a. sirnā mīl-an
walk.PST.1PL mile.SG-ACC
‘We walked a mile.’
b. *dhahabnā mīl-an
go.PST.1PL mile.SG-ACC
‘*We went a mile.’

Arabic has a large number of verbs that are associated with a Res feature. Within Talmy’s typology, these verbs are assumed to involve a Path element (my Rel_{PATH}), and thus Arabic as a Semitic language is usually classified as a verb-framed language (Talmy 1991). Although these verbs can be independently used to express a Transition event such as *dakhala* ‘entered’, *ghādara* ‘left’ and *ṣa‘ada* ‘climbed’, these verbs can also be followed by Rel_{PATH}Ps headed by e.g. *’ilā* ‘to’. In fact, some cannot be used without a Rel_{PATH}P, such as *kharaja* ‘exited’. To illustrate, see the examples in (90):

(90) a. dakhalat (’ilā) al-ghurfah
enter.PST.F3SG to DEF-room
‘She entered the room.’
b. kharajat *(min) al-ghurfah
exit.PST.F3SG from DEF-room
‘She went out of the room.’

As can be seen in (90a) the preposition *’ilā* is optional, in fact the sentence is more preferable without it. In contrast, in (90b) the verb *kharaja* ‘exited’ obligatorily requires a Rel_{PATH}P in its complement. Based on that, I take the element recognised in such verbs as Res, not Path/Rel_{PATH} (recall the discussion in 4.4.2). It is worth noting that, similar to English equivalent verbs, the Arabic verbs *dakhala* ‘entered’, *ghādara* ‘left’

and *yaṣil* ‘to arrive’ can express a goal of motion with the use of a PP or without. They can be followed by a DP Ground as a complement. Illustrative examples are:

(91) a. dakhaltu al-manzil
enter.PST.1SG DEF-house
‘I entered the house.’
b. waṣalnā al-maṭār
arrive.PST.1PL DEF-airport
‘We arrived at the airport.’
c. ṣa‘adnā at-tal
climb.PST.1PL DEF-hill
‘We climbed the hill.’

In these examples, the type of event expressed is that of Transition (=Accomplishment and Achievement) because the verbal predicate involves a verb that denotes a result subevent. In the next section, I propose an extended V projection for the [Proc] and [Proc, Res] verbs in Arabic as exemplified in this section.

4.7.2 *An extended V projection for motion verbs in Arabic*

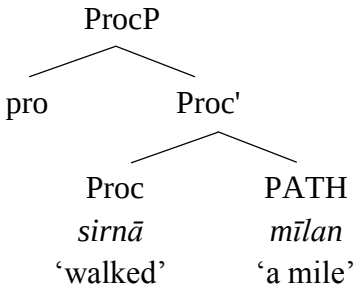
In verbal sentences Arabic displays VSO and SVO word order. The default pattern among these two word orders is debated in the literature. The questions whether the subject remains in situ (i.e. Spec-VP) and whether the verb undergoes movement beyond TP are at the heart of the debate (see e.g. Fassi Fahri 1993; Ouhalla 1994; Aoun, Benmamoun & Choueiri 2010; AlAlamat 2014). Also central to this discussion is the null subject or *pro* phenomenon which is allowed in Arabic. Since the focus of this thesis lies beyond the TP structure, assuming either pattern will not affect the discussion. In case of null subjects (or *pro*), I assume with Aoun, Benmamoun and Choueiri (2010) and AlAlamat (2014) that its identity is indicated by the agreement marker that appears on the verb. More specifically, null subjects are possible with full agreement constructions, specifically where person and number are marked.

By coincidence in all the examples given in (88)-(91) the subject is invisible and thus I assume *pro* in their structures. This is not a problem under the structures assumed in Ramchand’s (2008) first-phase syntax since a *pro* has all the properties of an overt

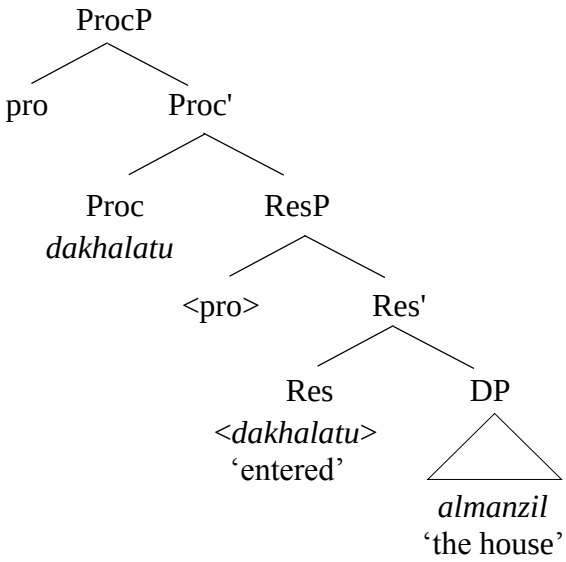
subject. Following Ramchand (2008), I propose the syntactic structures in (93a-b) for the two classes of motion verbs exemplified in (92a-b), respectively. Example (92a) is repeated from (89a) and (92b) from (91a).

(92) a. sirnā mīl-an
walk.PST.1PL mile.SG-ACC
'We walked a mile.'
b. dakhaltu al-manzil
enter.PST.1SG DEF-house
'I entered the house.'

(93) a.



b.



In (93a), the verb *sirnā* is of the [Proc] type, hence it merges with the Proc head and projects the ProcP. The Spec is occupied by the little *pro* to specify the UNDERGOER of the process. Through the agreement marker *-nā* the subject is taken to be a first person plural pronoun. In (93b), *dakhalatu* is a [Proc, Res] verb, hence it lexicalises both the Res and Proc terminal nodes. Since the *pro* signals the UNDERGOER and the RESULTEE of the event, it merges with Res' first and then remerges with Proc'.

To sum up the discussion on Arabic, on a par with English and Kurdish, motion verbs in Arabic can be divided into two classes: [Proc] Vs and [Proc, Res] Vs. For the classification, I applied the test of occurrence with Rel_{PLACE}Ps and allowing DP PATH as a complement. I also provided an extended V projection for these two types of motion verbs.

4.8 Summary and Conclusion

In this chapter, I have reviewed a number of accounts of motion events (e.g. Vendler 1957, 1967; Dowty 1979; Pustejovsky 1991; Rothstein 2004; Ramchand 2008; Romeu 2012). These accounts provide different semantic and syntactic analyses of the elements involved in a motion event. However, they agree that cross-linguistically motion verbs can denote an activity or a direction or change of location.

Using the semantic model of events in Dowty (1979) and Rothstein (2004) and the first-phase syntax of verbs in Ramchand (2008), I proposed a semantic-syntactic analysis that maps an event structure onto a phrase structure. I claimed that the semantic components of an event structure are reflected in certain functional heads in a VP structure. I argued that the BECOME event involved in Accomplishment and Achievement events (=Transition event) is parallel to ResP. I also reviewed two accounts (Ramchand 2008 and Romeu 2012) with reference to the lexicalisation of Res. Contrary to these authors, I argued that Res belongs to the verbal domain and that it cannot be lexicalised by DPs, APs or PPs because these lexical predicates do not suggest a BECOME event.

Using this basic structure, I examined the syntactic and semantic properties of motion verbs in English, Kurdish and Arabic. I classified motion verbs into two main classes: [Proc] Vs and [Proc, Res] Vs. For this purpose, I used two diagnostics, namely the occurrence of these verbs with Rel_{PLACE}Ps and the type of DP complement allowed after such verbs (more specifically the PATH test). Based on Ramchand's (2008) VP extended structure, I offered a typology of motion verbs in Kurdish and Arabic. Data from Kurdish and Arabic supports the division of motion verbs according to their association with a Res feature, and the type of events expressed. For example, in these

languages [Proc, Res] Vs can express Transition events, while [Proc] Vs can express Process events.

I also proposed an extended structure for the motion verbs in these languages. While the task was relatively straightforward for English and Arabic, Kurdish compound and complex verbs required special attention due to their complex morphological make-up. In chapter 5, I examine the occurrence of these verbs with different spatial PPs taking into account the proposals and discussion in this chapter as well as chapter 2 and 3. This will include further discussion of the syntactic and semantic properties of these verbs.

Chapter 5. Spatial PPs in Motion Events

5.1 Introduction

In chapter 4 I provided a syntactic-semantic analysis for motion events. In particular, I suggested that the BECOME event proposed in work by Dowty (1979) and Rothstein (2004) and involved in Transition events is parallel to the Res subevent proposed in Ramchand (2008). I also divided up motion verbs in English, Kurdish and Arabic into two main classes according to their association with a Res feature: [Proc] Vs and [Proc, Res] Vs. In this chapter, I examine the occurrence of different spatial PPs with these two classes of motion verbs. Accounting for such constructions requires incorporating insights from syntax, semantics and morphology of two domains: the verbal domain and the prepositional domain. When these two domains are combined, a complex motion event structure is formed.

Constructions made up of motion VPs and spatial PPs have been under scrutiny in several earlier studies (see e.g. Levin & Rappaport Hovav 1995; Ritter & Rosen 1998; Beck & Snyder 2001; Mateu & Rigau 2002; Zubizarreta & Oh 2007; Ramchand 2008; Gehrke 2008; Real Puigdollers 2010, 2014; Romeu 2012, 2014). The main questions approached in this chapter are: What is the syntactic and semantic structure of constructions made up of motion verbs and spatial PPs? How do the elements within the verbal and prepositional domain contribute to the overall structure and meaning (or what types of events are expressed)? What types of readings do the PPs have? How are the suggested structures instantiated in English, Kurdish and Arabic?

Finding answers to some of these questions may not be straightforward especially since when considering ambiguous motion verbs and spatial adpositions. These ambiguous cases require special attention. In working towards answers to these questions, several issues and themes will be encountered, such as V classes, P classes, the syntactic function and position of spatial PPs in the structure of a motion event, telicity and the like. Reviewing the vast and growing literature on these topics is far beyond the scope of this chapter; besides, not all of it is relevant to the concerns addressed in this chapter. Therefore, I will focus on those linguistic works that will help answer the specific questions above.

It will be shown that there are two types of events expressed by combinations of a motion VP and a spatial PP (following Pustejovsky's 1991 division of events): Process and Transition. Process events can be expressed by combinations that involve [Proc] Vs and Rel_{PLACE}Ps (e.g. English *in/on/above/under*) or Rel_{PATH}Ps (e.g. *to/from/through*). Similar interpretations are found in Kurdish and Arabic. Transition events are mostly expressed by [Proc, Res] Vs and different spatial PPs. In fact, I will show that the presence of some spatial PPs, in particular SourceRelPs and RouteRelPs does not contribute much to the Transition event other than modifying the whole event.

In addition, Transition events can be expressed by [Proc] Vs and Rel_{PATH}Ps headed by Ps such as *into* and *onto* in English. In such cases, I propose that the combinations express a resultative Transition event. This interpretation is due to the type of PP, which suggests a culmination. Recall that in Rothstein's (2004) semantic account of structurally derived Accomplishments a secondary predicate in e.g. *Mary hammered the metal flat* provides the culmination information and triggers the construction of a BECOME event (see section 4.2.4). Similarly I extend this analysis by Rothstein to examples such as *Tahir walked into the castle* where the PP provides the location at which the culmination takes place and hence a BECOME event is constructed. In the analysis I develop for such combinations, I assume a null Res element in the syntactic structure of such combinations, which is licensed by the BECOME event involved in Transition events and constructed by the secondary predicate. In Kurdish and Arabic, the presence of a lexicalised AxPart and a bounded GoalRel can also suggest a resultative Transition event when they occur with [Proc] Vs. The expression of a resultative Transition event by such combinations, i.e. [Proc] Vs and PPs, shows that the type of PP can change the semantic and syntactic structure of the motion event. The type of event expressed in English is tested by applying the measure phrase *for a while*, in the same way as in Romeu (2014). For Kurdish and Arabic, I use other explanatory examples.

The outline of the chapter is as follows. In section 5.2, I examine a combinatorial set of [Proc] Vs and Rel_{PLACE}Ps in English. The discussion will include reference to ambiguous and non-ambiguous Place Relators. In Section 5.3 the occurrence of [Proc] Vs with all three types of Rel_{PATH}Ps will be studied. In section 5.4 I analyse constructions made up of [Proc, Res] Vs and Rel_{PLACE}Ps. Section 5.5 will deal with [Proc, Res] Vs when they occur with Rel_{PATH}Ps. In sections 5.6 and 5.7, these

combinations of motion VPs and spatial PPs will be examined in detail in Kurdish and Arabic, respectively. Finally, section 5.8 provides a summary and conclusion.

5.2 [Proc] Vs + Rel$_{PLACE}$Ps

In this section, I examine the structure of motion verbs of the [Proc] type when occurring with different Place Relators in English. I look closely at the combination of some of these verbs with several Place Relators, such as *in, on, above*, *under*, *over* and *behind*. The analysis will include discussion of: (1) the types of readings suggested by the PP; (2) the syntactic association between the VP and PP; and (3) the type of the motion event. I will examine two types of verbal constructions: transitive and intransitive. The discussion will be based on the following combinatorial constructions:

(1) a. [Proc] Vs + unambiguous Rel$_{PLACE}$Ps e.g. Tahir walked on the hill.
b. [Proc] Vs + ambiguous Rel$_{PLACE}$Ps e.g. Tahir ran under the bridge.

In constructions such as (1a) the Rel$_{PLACE}$Ps denote the location of the activity and are adjuncts. This is shown by means of specific tests involving word order possibilities and use of *do so*, as other authors have shown (e.g. Folli & Harley 2006; Gehrke 2008; Tungseth 2008). The type of event expressed is that of Process. As to the Rel$_{PLACE}$Ps in the combinations exemplified in (1b), they have a locative and route-directional reading. Following Gehrke (2008), I assume that they are adjuncts under the locative reading, but V complements under the directional reading. Moreover, I propose that under both readings of the PP, the type of event expressed is Process.

5.2.1 *[Proc] Vs + unambiguous Rel$_{PLACE}$Ps*

In this subsection, I focus on PPs headed by Place Relators which mostly retain their locative meaning when they occur with [Proc] Vs as used in English. A few examples are given in (2).

(2) a. We swam in the chilly river of the Titou Gorge. (BNC, W_misc)
b. His fat old dog walked beside him. (BNC, W_fict_prose)
c. We flew above the skeletal radio mast. (BNC, W_fict_prose)

d. When the Oxford players ran on the pitch, they must have felt they were back at the Manor. (BNC, W_news_script)

In chapter 2, I examined elements such as *in, on, at, below, beside, behind, in front of*, etc. I proposed the term Place Relators to refer to them. Based on their semantic functions and properties, these elements relate a Figure to a Space, which is defined with reference to a Ground. In the examples in (2) the Rel_{PLACE}Ps denote a location of an activity (an event), not an entity. For instance, in (2a) the swimming activity takes place in the river, in (2b) the walking of the dog takes place beside someone, in (2c) the flying is above the named location and in (2d) the players' running took place on the surface of the pitch.

For such cases, following Gehrke (2008) and Tungseth (2008), it can be shown that the PP is associated at the external level of the VP, functioning as an adjunct. To demonstrate that the PPs in (2) are adjuncts, not complements, I will apply two syntactic tests discussed by Folli and Harley (2006), which involve word order and use of *do so*.[101] I start with the word order test. Consider: [102]

(3) a. We swam in the chilly river in the village.
b. We swam in the village in the chilly river.

(4) a. His fat old dog walked beside him in the park.
b. His fat old dog walked in the park beside him.

(5) a. We flew above the skeletal radio mast for hours.
b. We flew for hours above the skeletal radio mast.

(6) a. The Oxford players ran on the pitch for hours.
b. The Oxford players ran for hours on the pitch.

[101] Folli and Harley (2006) also apply a test of locative inversion, but I do not include it because in their application to English data, Folli and Harley (2006) do not seem to apply this test proposed in Bresnan (1994) correctly. In Bresnan (1994) it is mentioned that only specific intransitive verbs allow locative inversion such as *be, sit,* and *come*. For other tests, the reader is referred to e.g. Hoekstra's (1999) analysis of Dutch and Tungseth's (2008) analysis of Norwegian.

[102] The examples have been checked with educated native speakers. Special thanks go to Gillian Kester.

The test of word order shows that switching these Rel_{PLACE}Ps with other Rel_{PLACE}Ps, (3)-(4), or temporal adverbials, (5)-(6), does not affect the grammaticality of the sentences. This indicates that these PPs are adjuncts and/or attached at the external level of the VP.

Next I apply the *do so* test. Consider:

(7) a. We swam in the chilly river and they did so in the warm river.
b. His fat old dog walked beside him and his cat did so beside the old woman.
c. We flew above the skeletal radio mast and they did so above the tower.
d. The Oxford players ran on the pitch and the Cambridge players did so on the beach.

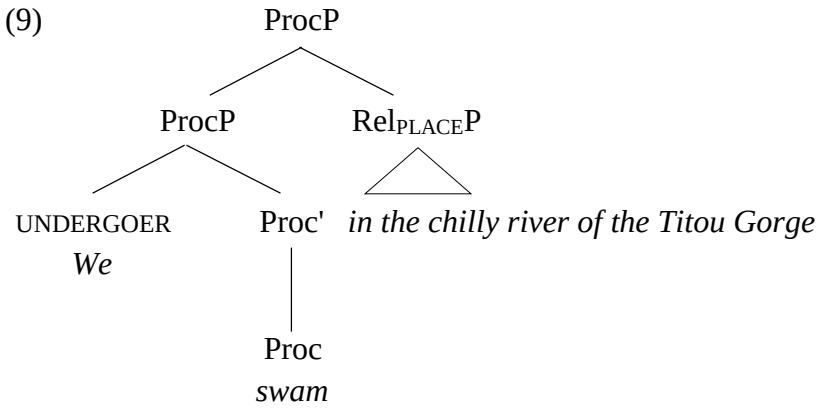
According to the *do so* test, the PPs are again VP external. As a result, they can be spelled out after *do so*. Based on these two tests, data from English show that Rel_{PLACE}Ps are adjuncts when they occur with [Proc] verbs.

The type of event expressed in the examples in (2) is Process. More specifically, the whole motion event is atelic because no end points are suggested, neither by the VP nor the PP. Thus, they all allow a durative PP temporal adverbial, but not a time-frame PP adverbial as illustrated in (8).

(8) a. We swam in the chilly river for two hours/*in two hours.
b. His fat old dog walked beside him for two hours/*in two hours.
c. We flew above the skeletal radio mast for two hours/*in two hours.
d. The Oxford players ran on the pitch for two hours/*in two hours.

On the basis of these data, the tree structure I propose for the examples in (2) is as in (9). In all of them the Rel_{PLACE}Ps exemplified are not complements to the Proc verb, but adjuncts. To illustrate the lexicalisation of the terminal nodes, I use the example in (2a).

(9)



It is worth mentioning that in all the examples above I have used intransitive constructions only. However, although [Proc] Vs are less common with DP objects, a few can be found, especially with the use of an additional PP (see e.g. Levin & Rappaport Hovav 1995; Folli & Harley 2006). In such cases, the internal argument will be the UNDERGOER of the process and the external argument will be the INITIATOR. See the examples below:

(10) a. The pilot was hired to fly them in a chartered plane. (BNC, W_fict_prose)
b. it had stung him, that [you] could fly me on a kite. (BNC, W_fict_prose)

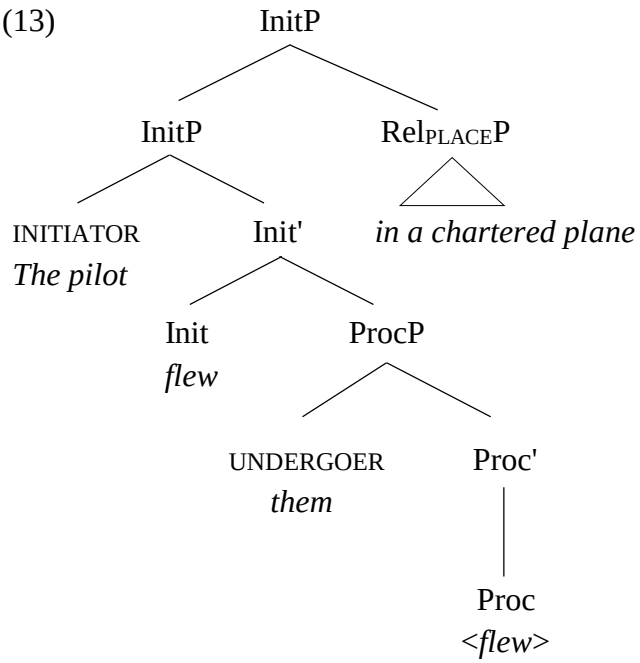
In (10a), *the pilot* is the agent who causes *them* (the passengers) to undergo a flying process. The same is true for (10b), where the addressee is taken to fly the speaker (imaginatively) on a kite. As to the PP in such examples, it is not straightforward to define its function and effect. The questions which arise here are: first, does the PP modify the whole process (functioning as an adjunct) or define an end point of the process (functioning as a complement), and second, is the whole event telic or atelic? To determine whether the PPs in (10a-b) are adjuncts or complements I will apply the two tests mentioned above: word order and *do so*. Consider (11-12); for convenience I use a shortened form of example (10a):

(11) a. The pilot flew them in a chartered plane in the sky.
b. The pilot flew them in the sky in a chartered plane.

(12) The pilot flew them in a chartered plane and Amy did so in a jumbo jet.

Under the tests of word order and use of *do so*, the Rel_{PLACE}Ps in (11) and (12), respectively, maintain grammaticality, indicating that they are adjuncts. Accordingly, the hierarchical structure of e.g. *the pilot flew them in a chartered plane,* is as follows:

(13)



Having seen that the Rel_{PLACE}P in (13) is an adjunct, we can draw the conclusion that the whole event, made up of a transitive [Proc] VP and a Rel_{PLACE}P, is an atelic Process. This is confirmed through the use of temporal *in-/for*-phrases. Only *for*-phrases are allowed. Illustrative examples are:

(14) a. The pilot was hired to fly them in a chartered plane for/*in one hour.
b. it had stung him, that [you] could fly me on a kite for/*in one hour.

5.2.2 *[Proc] Vs + ambiguous Rel_{PLACE}Ps*

In this subsection, I examine the occurrence of [Proc] Vs and PPs headed by elements known to be ambiguous, such as English *under*, *over* and *behind* (see e.g. Higginbotham 2000; Gehrke 2008: 92; Svenonius 2010). Following Gehrke (2008), I assume that such PPs suggest two types of readings: a locative reading and a route-directional reading when they occur with activity-denoting verbs. Under the locative reading the PPs are adjuncts while under the directional reading the PPs are complements. Further, I show that such combinations express a Process event only. To start with, consider the examples in (15):

(15) a. The dog ran under the table. (BNC, W_misc)
b. They walked over the cliffs searching the sea. (BNC, W_biography)
c. Jakub swam behind the boat. (Gehrke 2008: 93)

The PPs in (15a-c) allow both a locative and a route-directional reading. In (15a), under the locative reading, the action of running takes place under the table. Under the route-directional reading, the dog follows a path from one point (an unspecified starting point) to another point (an unspecified end point) via the space under the table. Hence, the table forms an intermediary point of the dog's path beneath it. With [Proc] Vs the PP does not have a goal-directional reading (see Gehrke 2008). Thus the possibility that the dog runs to a position under the table is not available. Similarly, besides the locative reading, in (15b), a route-directional reading is possible for the PP. This would involve the Figure walking from one position to another via the cliffs. In (15c) the PP can suggest a locative reading (where the swimming took place in a position behind the boat) or a route-directional reading (where the Figure swam from an unspecified point to another following a path which is behind the boat).

Despite the dual readings possible in (15), the Ps *under, over* and *behind* are classified as locative Ps in several studies (see Thomas 2001; Gehrke 2008; Tungseth 2008). For example, these Ps can be used with stative verbs. The stative form of the examples in (15) is as in (16):

(16) a. The dog sat under the table.
b. They stood over the cliffs searching the sea.
c. Jakub is behind the boat.

Gehrke (2008: 93-95) argues that in English, *under* (as well as *in, on* and *behind*) are ambiguous.[103] For example, she takes *under* to denote a locative and directional-goal meaning with *put*-verbs, but locative and directional-route meaning with *swim*-verbs. To account for the ambiguity of *under* and *behind* as well as *in* and *on*, and their

[103] Gehrke (2008) treats *in* and *on* as ambiguous Ps when they occur with *put*-verbs. In this thesis and following Ramchand (2008) I take such verbs to be tagged with Res. Therefore, Ps such as *in* and *on* can denote a goal-directional reading when combined with *put*-verbs (see section 5.4.1).

equivalents in Dutch and German, Gehrke (2008) puts forward the Structural Ambiguity Hypothesis:

(17) Structural Ambiguity Hypothesis: The spatial Ps *in, on, under* and *behind* are locative only. Any ambiguity between a directional and a locative reading is structural and not lexical.

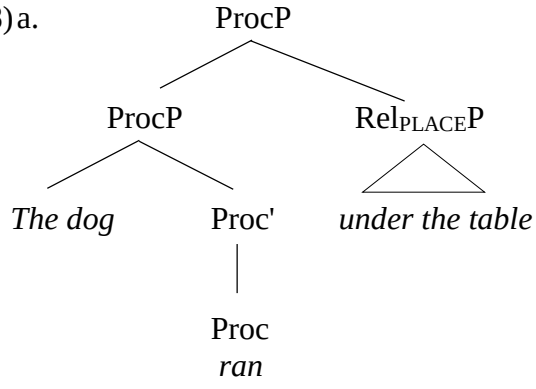
(Gehrke 2008: 88)

So according to this hypothesis, *under* is in essence a locative element, and its ability to denote directionality is due to the structural configuration in which it occurs.[104] On a semantic basis an ambiguous PP can be attached to the VP in two different ways: '[u]nder the directional reading, the PP modifies a BECOME event, whereas under a locative reading, the PP modifies the whole event' (Gehrke 2008: 122). Phrasing this syntactically:

> Under the locative reading, the PP is an adjunct and attaches to the VP, modifying the event. Under the directional reading, the PP behaves like a complement and attaches PP-internally as a secondary predicate.
>
> (Gehrke 2008: 110)

Following Gehrke (2008), the syntactic structures corresponding to the two readings of example (15a) are as in (18a-b):

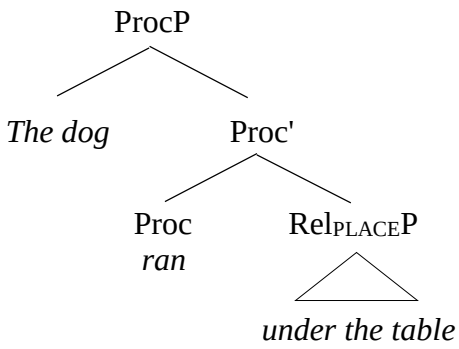
(18) a. [locative]



[104] It is worth noting that Real Puigdollers (2010: 129) has extended Gehrke's (2008) hypothesis to include all ambiguous prepositions. She refers to it as the Extended Structural Ambiguity Hypothesis (ESAH), given in (i):

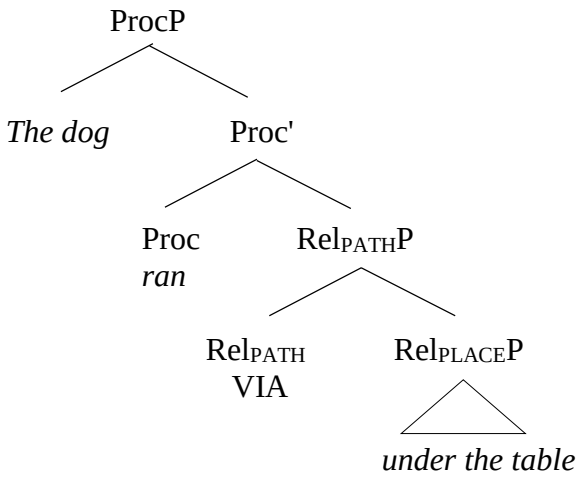
(i) The Extended Structural Ambiguity Hypothesis (ESAH): for any spatial preposition that can be interpreted as locative, it is only locative. Any ambiguity between a directional and a locative meaning is structural.

b. [directional]



The structures in (18) show a general picture of the syntactic position of ambiguous Rel_{PLACE}Ps. However, the proper analysis of the cases with a directional reading is a matter of debate in the literature. One critical question raised in this regard is whether the directional reading (in this case route) entails the presence of a functional head in the structure or not. In Svenonius (2010) a null Path element meaning VIA is postulated to account for the route-directional reading of PPs in such cases. Accordingly, a revised structure of (18b) would be as in (19) (see section 5.4.2 for more details of Svenonius' (2010) null Path elements).

(19)



Similar to the combinations discussed in section 5.2.1, the constructions in (15) express a Process event under both readings (locative and route-directional) because the PP does not suggest a culmination or end point. This can be shown by applying the test involving the measure phrase *for a while*, as is also done in Romeu (2014). See the examples in (20).

(20) a. The dog ran under the table for a while.
b. They walked over the cliffs for a while.

c. Jakub swam behind the boat for a while.

The presence of the measure phrase *for a while* means that the PP has a locative reading only. That is, the running described in (20a) was for a specific period; the sentence cannot have the meaning that the dog was under the table for a specific period while running from one position to another. The same is true for (20b and c). The measure phrase modifies the walking or swimming event; the sentences do not mean that the Figure moved in the trajectory over or behind the Ground for a while. Accordingly, no result event is expressed by [Proc] Vs and PPs headed by ambiguous Ps such as English *under, over* and *behind*.

It is worth mentioning that Gehrke (2008) suggests three possible solutions to account for the route reading, although she remains agnostic as to which is the right one. The first solution is to take *under* and *behind* as lexically ambiguous. The problem with this solution is that, as discussed by Gehrke (2008), equivalent P elements in German, Dutch, Norwegian, Russian and Czech are not lexically ambiguous.

The second solution is to propose a silent Path head meaning VIA, which is in line with Svenonius' (2010) null Path elements. In her criticism of silent heads, Gehrke (2008: 119) states that a "general problem with silent heads is that it is not clear how their licensing is constrained in any system that posits them". For instance, it is not clear how a VIA head or TO head is licensed and with what types of motion verbs.

The third solution is to compare *under* and *behind* with other Ps, such as *in* and *on*, to identify other differences. For example, in terms of Wunderlich's (1991) semantic analysis of spatial Ps, *under* and *behind* (but not *in* or *on*) are associated with a vertical axis which can suggest an extended location, which in turn can suggest a path reading. Gehrke (2008), however, wonders why this route reading applies to English *under* and *behind* only and not their Dutch or Norwegian counterparts.

In sum, in this subsection I have shown that [Proc] Vs and PPs headed by the ambiguous Ps *under* and *behind* denote a Process event under the locative and route-directional reading. Following Gehrke (2008), the PP, however, attaches at a different position under each reading. It is adjunct under the locative reading and V complement under the route-directional reading. However, Gehrke does not reach a conclusive

analysis for the route-directional reading of *under*- and *behind*-phrases with *swim*-verbs (=[Proc] Vs). This unique nature of English *under* and *behind* is worth investigating, but I must leave it for future research.

5.3 [Proc] Vs + Rel$_{PATH}$Ps

In chapter 3, I referred to elements such as *to/from/through* as Relators in a path domain. Semantically, they relate Figures to specific points of a path. They do not denote the path itself. English has three canonical types of such Relators which I referred to as GoalRel, SourceRel and RouteRel. GoalRel Ps such as *to, into, onto, up to* and *towards* relate a Figure to an end point of a path; the SourceRel Ps *from, out of* and *away from* relate a Figure to a starting point; and the RouteRel Ps *past, along, through, across* and *around* relate a Figure to some intermediate points of a path. Syntactically, I proposed the projection Rel$_{PATH}$P to host the Relators in a path domain, which in turn dominates the Rel$_{PLACE}$P in a complex P projection.

The combinatorial sets I will be examining in this section are:

(21) a. [Proc] + GoalRelP — e.g. Tahir ran to/into/up to/towards the castle.
b. [Proc] + SourceRelP — e.g. The bird flew from/out of the tower.
c. [Proc] + RouteRelP — e.g. They walked through/along the tunnel.

The discussion will include identifying the types of association that holds between the verb and these PPs and the type of event expressed by these combinations. At the end, based on the discussion I propose a syntactic structure for each of these combinations. It will be shown that such PPs are associated at the internal level of the verb based on tests of word order and use of *do so* (Folli & Harley 2006). The type of event expressed by such combinations is that of Process, except when the PP is headed by Ps such as *into* and *onto*. I propose that the construction [[Proc] Vs + *into/onto*-phrases] gives rise to a resultative Transition event. Accordingly a null Res element is posited to represent the BECOME event involved in such events and constructed by the PP which provides the location at which the culmination is attained.

5.3.1 *[Proc] Vs + GoalRelPs*

Following Pantcheva's (2011) classification of Path Ps, there are three distinct Goal Relators. In her terminology, these are Cofinal (*to*), Terminative (*up to*) and Approximative (*towards*). The general reading of PPs headed by these Ps is that of goal direction. Differences arise, however, in terms of telicity or the extent to which the Figure reaches the Ground. Consider the following examples:

(22) a. They walked to the teashop in silence. (BNC, W_misc)
b. Smiling to herself, she walked into the kitchen. (BNC, W_fict_prose)
c. I ran onto the pavement, dragging my cart after me. (BNC, W_biography)
d. She walked up to the villa. (BNC, W_fict_prose)
e. Harvey swam towards the ladder. (BNC, W_fict_prose)

The difference between (22a-d), on one hand, and (22e), on the other is that the *to*-phrase, *into/onto*-phrases and *up to*-phrase represent a bounded end point of the Figure's motion or path and thus are telic, whereas the *towards*-phrase is atelic since the PP does not suggest a transition or boundary of the Figure's motion in a path (see chapter 3). To put if differently, although all of *to/into/onto/up to/towards* relate the Figure to an end point in a path, the Figure does end up at the end of the path in case of *to/into/onto/up to*, but not in the case of *towards*. Thus in (22e), the Figure, *Harvey*, can keep swimming in the direction of the ladder without reaching it.

The two main issues to determine here with reference to these examples are the type of association that holds between the VP and PP and the type of event expressed by the combinations made up of these Relators and [Proc] Vs. In this section I deal with the first issue and in section 5.3.2 I deal with the second issue. To determine the type of association I apply the tests by Folli and Harley (2006): word order and the *do so* test. First consider the case of *to*-phrase.

(23) a. They walked to the teashop in the city centre.
b. *They walked in the city centre to the teashop.
c. *They walked to the teashop and I did so to the book store.

These tests show that *to*-phrases are complements of the verb and not adjuncts. Switching the position of the *to*-phrase and a locative PP leads to ungrammaticality, (23b). Also the *do so* test shows that the *to*-phrase is a complement, hence the ill-formedness of (23c).

I now apply these tests to *into*-phrase, (24), *onto*-phrase, (25), *up to*-phrase, (26), and *towards*-phrase, (27). For this purpose, I use the shorter forms of examples (22b and c). Consider:

(24) a. She walked into the kitchen in the palace.
b. *She walked in the palace into the kitchen.
c. *She walked into the kitchen and he did so into the garage.

(25) a. I ran onto the pavement in the wide street.
b. *I ran in the wide street onto the pavement.
c. *I ran onto the pavement and they did so onto the road.

(26) a. She walked up to the villa in the park.
b. *She walked in the park up to the villa.
c. *She walked up to the villa and her friend did so up to the hill.

(27) a. Harvey swam towards the ladder in the pool.
b. *Harvey swam in the pool towards the ladder.
c. *Harvey swam towards the ladder and she did so towards the fountain.

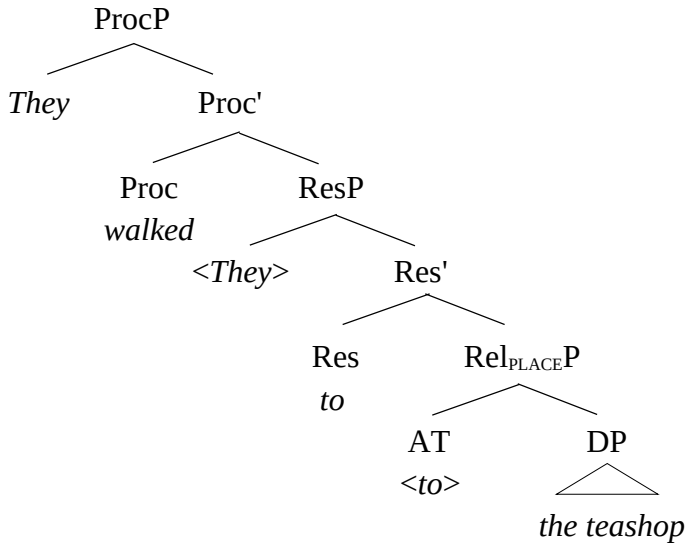
According to these tests, PPs headed by *into, onto, up to* and *towards* are again attached at the internal level of the verb, i.e. they function as V complements.

In sum, the discussion shows that in English, Rel_{PATH}Ps headed by *to, up to,* and *towards* are attached at the internal level of the verb, hence they are complements not adjuncts. In the next section, I show that these PPs differ from each other in their behaviour and role in the event structure.

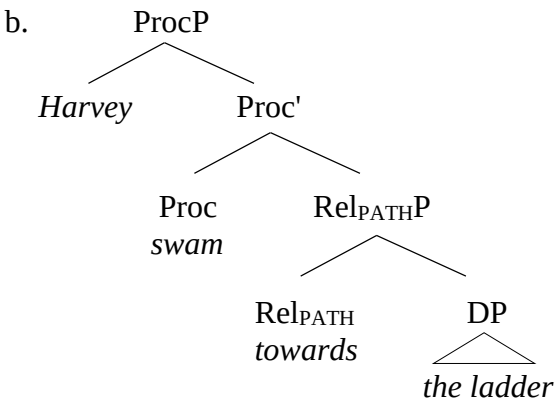
5.3.2 *Analysis and proposal*

The combinations of [Proc] Vs and GoalRelPs yield specific types of events, which in turn suggest specific syntactic structures. For example, the difference between *to/into*-phrases and *towards*-phrases leads to two different types of reading according to Ramchand (2008). She suggests that *to/into*-phrases express goal of motion while *towards*-phrases express directed path. As mentioned in chapter 4, Ramchand (2008) claims that *to* can be associated with two features: a Res feature and a Place feature. Accordingly, Ramchand (2008) assumes the presence of a ResP even in case of pure [Proc] verbs; the Res head will be lexicalised by *to* in that case, while *towards* lexicalises the Path element (my Rel_{PATH}) element. These are illustrated in (28a-b) for the examples in (22a) and (22e), respectively.

(28) a.



b.



In chapter 4, I established the difference between ResP and Rel_{PATH}P. I showed that *to* does not lexicalise Res because it does not express a BECOME event (see discussion in section 4.3.2). Instead I propose a unified analysis of Rel_{PATH}Ps headed by Path

Relators. They are introduced under the Rel_{PATH} head. Most importantly, I argue that the type of events expressed in the examples in (22a-e) are as follows:

(29) a. [Proc] Vs + *to*-phrase = Process
b. [Proc] Vs + *into/onto*-phrase = Transition
c. [Proc] Vs + *up to*-phrase = Process
d. [Proc] Vs + *towards*-phrase = Process

As can be seen, the combination in (29b) is the only one which suggests a Transition event, more precisely a resultative Transition event, while the other combinations suggest a Process event. The reasoning goes as follows. Since *into-/onto*-phrases suggest that the Figure ends up within the spatial domain of the Ground in a spatial relationship, a Transition event is expressed and hence a BECOME event is constructed. Mapping this interpretation to the syntactic-semantic analysis I proposed in chapter 4, we can assume that the BECOME event is implied and can be represented as a null ResP. Moreover, we can take the PPs headed by *into* and *onto* as the culmination of the BECOME event. In contrast, the occurrence of *to-/up to-/towards*-phrases with [Proc] Vs such as *run, walk* and *fly* does not give rise to a resultative Transition event. Although *to-/up to-/towards*-phrases relate the Figure to the end point of a path, they do not suggest a culmination. In chapter 4 I discussed Rothstein's (2004) notion of culmination and its role in an event structure. The definition is repeated in (30).

(30) The culmination is the final minimal event in an incremental process. It is the event which is the final part of the BECOME event; the upper bound of the BECOME event. The argument of the culmination event is the argument of the BECOME event (i.e. the affected object or theme).

(Rothstein 2004: 106)

Based on this definition, it might be thought that the PPs headed by *to, up to* and *towards* should give rise to a resultative Transition event when they occur with a [Proc] V. However, this is not the case although in case of *to/up to*-phrases a telic point is defined. First, although the tests have shown that these PPs are complements, not all of them can function as the upper bound of the BECOME event because they do not suggest a resultative Transition event with [Proc] Vs. To put it informally, walking into a place is not the same as walking to or up to or towards a place. With *into* and *onto*

combined with a [Proc] V, a resultative Transition event can be expressed that culminates when the Figure (=the incremental theme) becomes within the spatial domain of the Ground, but with *to, up to* or *towards* there is no such possibility. It is worth noting that when I assume that *into* and *onto* give rise to a BECOME event, this is not because they represent the BECOME event itself but because their occurrence with a [Proc] V gives rise to a resultative Transition event. More precisely these PPs provide information about the culmination of the event and triggers the construction of a BECOME event.

Empirical evidence in support of the classification in (29) can be gained from inserting the measure phrase *for a while* to test the result state of the example sentences in (22). Through this test we can determine the type of event expressed in such constructions.

(31) a. They walked to the teashop for a while.
b. She walked into the kitchen for a while.
c. I ran onto the pavement for a while.
d. She walked up to the villa for a while.
e. Harvey swam towards the ladder for a while.

In (31a) *for a while* measures the walking activity of the Figure; it does not entail that the Figure has been in the teashop. The same is true for (31d and e). Contrary to them, in (31b and c) *for a while* entails that the Figure has been in the kitchen or on the pavement for some time. So the walking and running have ended up with the Figure being in the kitchen or on the pavement, which suggests that both have a resultative Transition event. The Transition event is mainly due to the preposition being used, *into* and *onto*. In particular, it is due to the presence of the Place Relator *in* and *on*, which relates the Figure to the inner side and surface of the Ground.

An advantage of this analysis is that it provides a unified account for cases where *to*-phrases that have unspecified quantity objects do not give rise to a resultative Transition event. An illustrative example is given in (32), cited from Travis (2010: 110):

(32) Mary ran to stores (*in 3 hours/√for 3 hours). [Activity/*Accomplishment]

The main difference between the Process events expressed by [Proc] Vs combined with *to-/up to*-phrases, on the one hand, and *towards*-phrases, on the other hand, lies in the telicity of the Process. This can be shown by applying the temporal adverbial test.

(33) a. They walked to the teashop in two hours/*for two hours. [telic Process]
b. She walked up to the villa in two hours/*for two hours. [telic Process]
c. Harvey swam towards the ladder *in two hours/for two hours. [atelic Process]

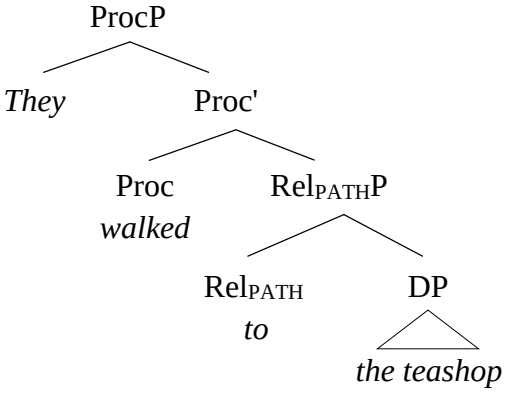
The grammaticality of an *in*-temporal phrase in (33a-b) shows that the Process expressed is bounded, while the possibility of a *for*-temporal phrase in (33c) shows that the Process is unbounded. Telicity, however, is not represented syntactically. It is rather a semantic concept (for discussion on telicity see Krifka 1998; Folli 2002; Folli & Harley 2006; Arsenijević 2006, among others).

Finally, each of the event structures in (22) yields a different syntactic structure. For convenience, I repeat the examples in (34):

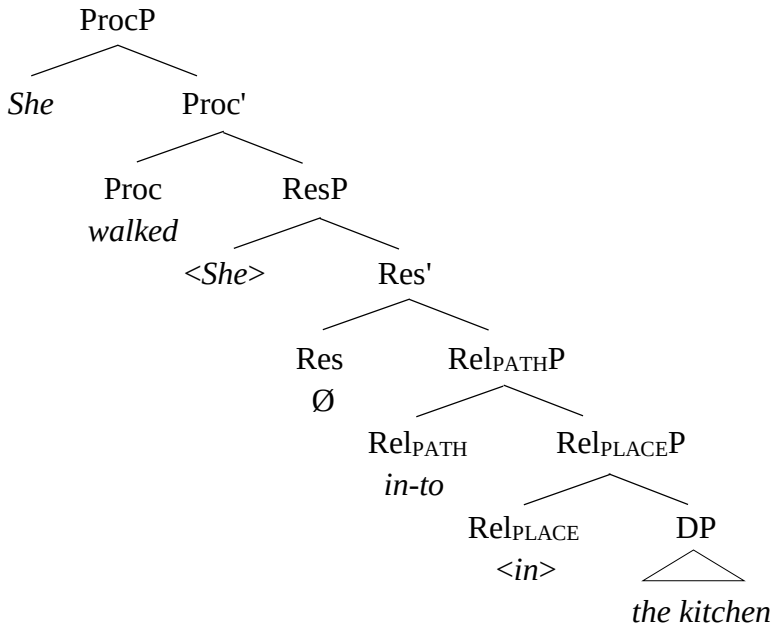
(34) a. They walked to the teashop in silence. (BNC, W_misc)
b. Smiling to herself, she walked into the kitchen. (BNC, W_fict_prose)
c. I ran onto the pavement, dragging my cart after me. (BNC, W_biography)
d. She walked up to the villa. (BNC, W_fict_prose)
e. Harvey swam towards the ladder. (BNC, W_fict_prose)

In (34b and c) I suggest there is a null ResP, which is licensed by the BECOME event, while for (34a, d and e) I do not suggest one. The syntactic structures of the [VP + PP] constructions in (34a-e) are as in (35a-e), respectively.

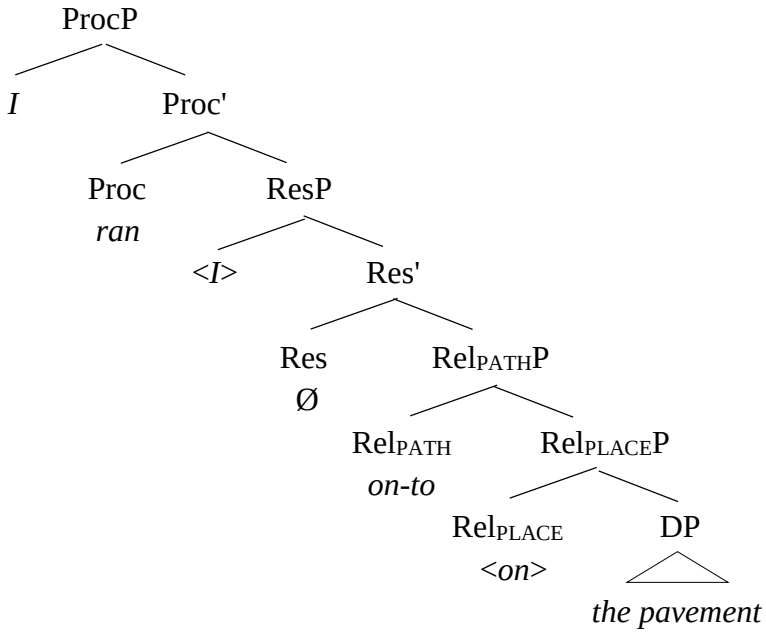
(35) a.



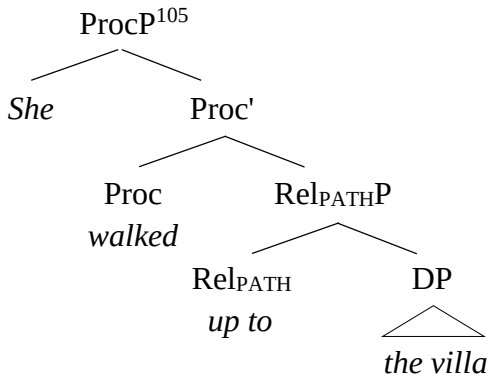
b.



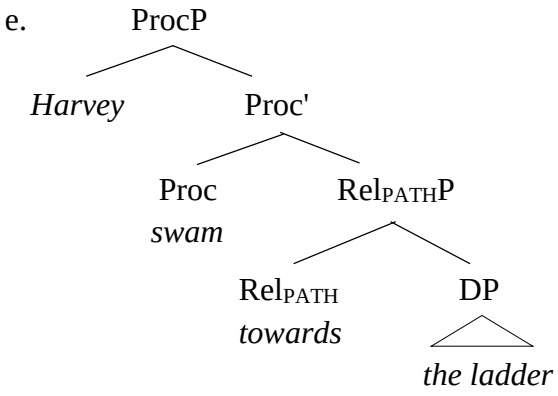
c.



d.



[105] For notational simplicity, I do not represent *up* under XP as was presented in chapter 3 (see structure (37)).



To sum up, the discussion has shown that PPs headed by GoalRelPs such as *into* and *onto* in English can function as culminations to a BECOME event. For such cases, I proposed that there is a null ResP in the structure licensed by the BECOME event. Other goal PPs, such as *to, up to,* and *towards,* do not have a culmination effect. One conclusion in this connection is that in English the occurrence of [Proc] Vs and Rel_{PATH}Ps can give rise to a resultative Transition event provided that the Rel_{PATH}P specifies a final point (a culmination) where the Figure in a motion event ends up being within the spatial domain of the Ground. In English, the Rel_{PATH} *into* and *onto* are representative examples. PPs headed by such elements can change the semantic and syntactic structure of the motion event expressed. Semantically a Transition event will be expressed and a BECOME event will be constructed, and syntactically there is a null Res element to represent the BECOME event. Moreover, the position of the Rel_{PATH}P with reference to the verb does not affect the type of event expressed. For example, in English, all GoalRelPs are V complements, but only *into/onto*-phrases give rise to a resultative Transition event, based on their lexical-semantic properties. Thus, semantics plays a fundamental role in the syntax of motion events, especially those that involve spatial PPs.

5.3.3 *[Proc] Vs + SouceRelPs*

I now turn to Rel_{PATH}Ps headed by Ps such as *from, out of* and *away from*. First, the distinction between GoalRel elements such as *to* and SourceRel elements such as *from* has been debated over the last decade in many studies (see e.g. Filip 2003; Nam 2005; Arsenijevič 2005; Markovskaya 2006; Gehrke 2008). Different treatments of these two categories have been suggested. For example, Nam (2005) assumes a syntactic and semantic asymmetry between Goal and Source elements. Syntactically, following Travis (2000), he claims that goal PPs are generated under VP2, whereas source PPs are

generated under VP1. These are shown in (36)-(37). The examples and structures are from Nam (2005: 107, 108) (PP_G = goal PP, PP_S = source PP, the bold PPs are Nam's).[106]

(36) a. John swam to the boat.

b. [$_{VP1}$ DP1 [$_{V1'}$ V1 [$_{VP2}$ [$_{V2'}$ (DP2) V2 **PP$_G$**]]]]

(37) a. John sent the book from Chicago.

b. [$_{VP1}$ DP1 **PPs** [$_{V1'}$ V1 [$_{VP2}$ [$_{V2'}$ (DP2) V2]]]]

This shows that while goal PPs are complements, source PPs are adjuncts. Nam's syntactic evidence involves preposition incorporation, prepositional (Pseudo) passives and movement and ordering.[107] Semantically, he assumes that, in event structures, goal PPs express a resultative state since they define a final location, while source PPs specify only the starting point of a trajectory, thus modifying the whole event (for a similar line of argument see Filip 2003; Markovskaya 2006; di Laurea 2007).

Contrary to this view, Gehrke (2008) and Arsenijevič (2005) suggest an anti-asymmetry analysis. For example, Gehrke's (2008) arguments are based on the semantic accounts of goal and source Ps by Zwarts (2005) and Fong (1997). Zwarts (2005) suggests that both goal and source PPs (excepting *towards*) describe bounded (telic) paths and Fong (1997) proposes that both goal and source PPs suggest a transition interpretation which involves a negative and a positive phase. Based on this, Gehrke (2008) proposes that both goal and source PPs give rise to a BECOME event in the sense of Rothstein (2004). Her proposal is based on the hypothesis that if there is a syntactic and semantic asymmetry between goal and source PPs, it is due to the goal bias, which she takes to be "extra-linguistic in nature", rather than to specific syntactic and/or semantic properties that distinguish the two PPs (Gehrke 2008: 230). For Gehrke (2008) both goal and source PPs are integrated as complements into the VP, forming a secondary resultative predicate. Gehrke (2008) extends this analysis to route PPs and ambiguous locative PPs which denote goal readings.

[106] Travis's (2000) VP1 is parallel to Ramchand's (2008) ProcP while VP2 is parallel to ResP.

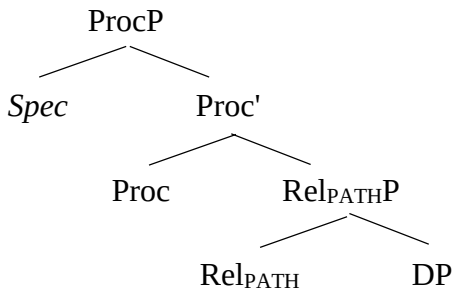
[107] It is worth noting that Nam (2005) applies these tests and others such as locative alternation to distinguish locative and directional PPs as well. For details on the application of these tests, the reader is referred to Nam (2005).

In this thesis I am not concerned with the issue of whether or not there is an asymmetry between goal and source PPs. Therefore, I put this discussion aside. Instead I will focus on the role of SourceRelPs in event structure, specifically, the question whether they can function as culminations and give rise to a BECOME event. In the previous section, I showed that only phrases with *into/onto* (not *to, up to* or *towards*) can express a resultative Transition event with [Proc] Vs. The claim was based on the semantic properties of these PPs which enable e.g. *into*-phrases to function as culminations and give rise to a BECOME event and hence express a resultative Transition event. By extension, based on the fact that culminations specify the final point of an event, I take SourceRelPs not to express a resultative event with [Proc] Vs. This analysis is in line with arguments in Nam (2005), Filip (2003) and di Laurea (2007). Consider:

(38) a. And every day I ran from the tube to the rehearsal room. (BNC, W_fict_prose)
b. the golden bee flew out of the woman's sleeve. (BNC, W_fict_prose)
c. They walked away from the lamp-post. (BNC, W_fict_prose)

In the interpretation of these examples, running from the tube, flying out of the sleeve or walking away from the lamp-post do not suggest a resultative event. Based on this analysis, I propose the following syntactic configuration for [Proc] Vs + SourceRelPs:

(39)



5.3.4 *[Proc] Vs + RouteRelPs*

In this subsection, I will examine the occurrence of [Proc] Vs and PPs headed by Route Relators, such as *through, across, along, past, around*. The discussion will include the same line of analysis adopted in the previous sections. The two Ps that I will be focusing on are *past* and *through*. Consider first the case of *past*.

(40) a. He drove past the house of his mother. (BNC, W_fict_prose)
b. The man pulled on a balaclava and ran past the girl. (BNC, W_news_script)
c. They walked past the cottage with the sunflower. (BNC, W_fict_prose)

As mentioned in chapter 3, *past* relates a Figure to a middle point of a path. In (40a), at one middle point of his path or motion from one place to another, the Figure *he* is related to the Ground *the house of his mother*. In (40b), *the man* is related to *the girl* who forms a middle point in a path. Likewise, in (40c) *they* is related to *the cottage* in a path domain. *Past*-phrases exhibit the following patterns with reference to the tests of word order and use of *do so*. I apply the tests to example (40a) only:

(41) a. He drove past the house in the village.
b. *He drove in the village past the house.
c. *He drove past the house and she did so past the cottage.

These tests show that *past*-phrases are complements to the verb. In terms of telicity they are telic since they allow *in*-phrases. This is illustrated in (42).

(42) He drove past the house in two minutes/*for two minutes.

In English, *through*-phrases are also complements according to the tests of word order and use of *do so*. The examples in (44) illustrate this for the example sentence given in (43):

(43) suddenly one person walked through the door. (BNC, S_conv)

(44) a. One person walked through the door in the auditorium.
b. *One person walked in the auditorium through the door.
c. *One person walked through the door and the rest did so through the window.

In terms of telicity, they can be either telic or atelic based on the boundedness of the DP Ground (cf. Piñón 1993; Zwarts 2005; Pantcheva 2011).

(45) a. One person walked through the door in one minute/*for one minute.
b. One person walked through the tunnel in one minute/for one minute.

In Piñón (1993), Zwarts (2005) and Pantcheva (2011), route adpositions are realised as two types or varieties: bounded and unbounded. In these accounts, the role of the DP Ground of a spatial PP is totally ignored. While I agree that Route Relators, such as *through, across, around*, exhibit two telicity/boundedness features, I take such adpositions to be sensitive to the type of verb used and the dimension of the DP Ground. For example, in (45a), although the door is a bounded entity, it is not extended so that the Figure can walk through it for a while. In contrast, in (45b) the tunnel can be thought of as an extended bounded space which can be walked through (hence the acceptability of *for*-phrases). Alternatively, the tunnel can be interpreted as a middle point in a path, where the Figure enters it at one point and gets out of it on the other side (hence the acceptability of *in*-phrases).

Finally, the type of motion event that involves [Proc] Vs and RouteRelPs is that of Process. The PP does not form a culmination, thus no Res (BECOME) element is available. In general, the role of the PP, especially under the extended reading of the Route Relator, is that of defining the location of the activity or defining the trajectory of the Figure during the motion event. The structure in (39) is also true for all the other cases exemplified in this section.

5.3.5 *Interim summary*

In the last two sections (5.2 and 5.3) I have examined the syntactic and semantic structure of the occurrence of [Proc] Vs and spatial PPs. First I dealt with combinations of [Proc] Vs and unambiguous Rel_{PLACE}Ps such as *in/on/above*. It was shown that these PPs are adjuncts and the whole construction suggests a Process event. After this I examined the occurrence of [Proc] Vs with PPs headed by ambiguous Place Relators such as English *under* and *behind*. These PPs can suggest a locative and route-directional reading with [Proc] Vs. Through applying the test of the measure phrase *for a while* I showed that, under both readings, the type of event expressed is that of Process as well.

In section 5.3, the occurrence of [Proc] Vs with different types of Rel_{PATH}Ps was discussed. Based on the semantic properties of the preposition, different events are suggested. For example, [Proc] Vs and *into/onto*-phrases give rise to a resultative

Transition event, while [Proc] Vs and *to-/up to*-phrases express a telic Process and [Proc] Vs with *towards*-phrases suggest an atelic Process. I have shown that culminations play a role in determining the type of event expressed and most importantly I have shown that not every spatial PP suggests a culmination even if it denotes an end point. This shows the difference between what counts as an end point and what is taken as a final point of a BECOME event. Only when the Figure in a motion-spatial relationship ends up in the spatial domain of a Ground, a resultative Transition event is expressed with [Proc] Vs. To account for the syntactic structure of such event I proposed a null Res element licensed by the BECOME event constructed by the PP which defines the culmination of the matrix event.

5.4 [Proc, Res] Vs + Rel$_{PLACE}$Ps

In this and the following section, I examine constructions made up of the group of verbs that are tagged with a Res feature combined with spatial PPs in English. Similar to the discussion in the two previous sections, I will examine the type of reading expressed by the PP, the VP-PP type of association and the type of event expressed. Examples of these verbs are given in (46), repeated from (59) in chapter 4.

(46) [Proc, Res] Vs: *go, come, put, fall, kick, throw, enter, leave, arrive*

In this section I will focus on the combination of these verbs and Rel$_{PLACE}$Ps. As will be shown, PPs headed by e.g. *in, on, at* and *above,* have a goal-directional reading with such verbs. The goal-directional reading is licensed by the Res subevent recognised as part of the verb. Such combinations are a good representation of the proposal that the verb being associated with Res is the element that represents the BECOME event, while the PP represents the culmination of the BECOME event. This is discussed in section 5.4.1. However, when some of these verbs, including *fall* and *kick*, occur with PPs headed by ambiguous Ps such as *under* and *behind*, the PP suggests a locative and goal-directional reading. Following Gehrke (2008) and Tungseth (2008), I assume that the PPs are adjuncts under the locative reading and V complements under the directional reading. Moreover, I propose that under both readings of the PP, the type of event expressed is resultative Transition since the verb is associated with a Res feature. This is the content of section 5.4.2.

5.4.1 *PPs suggesting a goal-directional reading only*

As mentioned in chapter 4, the verbs in (46) are referred to as inherently directed motion verbs in Levin (1993) and, in Ramchand (2008), they are tagged with a Res feature. These verbs occur with a wide range of Rel_{PLACE}Ps. Representative examples of such combinations are given in (47).

(47) a. they went in the cage. (BNC, S_conv)
b. he came in the room. (BNC, S_conv)

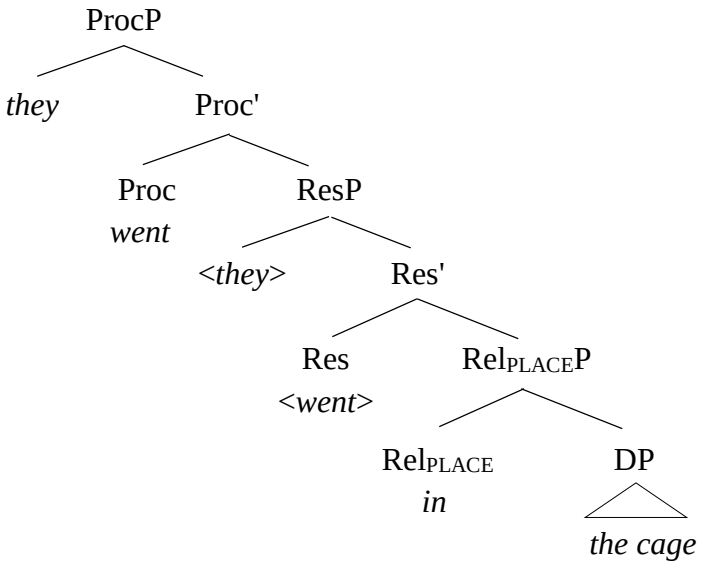
In these examples the meaning of the PP is that of denoting a goal or more specifically defining the final location of a Figure's motion. For instance, in (47a) the PP *in the cage* specifies the final point of the Figure *they*. In (47b), the PP *in the room* also defines the final location of the Figure, which is in the inner part of the room. This reading of the PP is due to the lexical semantics of the verb being used. The verbs *go* and *come* are both associated with a Res feature, which suggests a result or end state. Thus, whenever Rel_{PLACE}Ps occur with [Proc, Res] verbs, they do not have a locative reading, but a goal reading. More specifically, the Rel_{PLACE}Ps specify the culmination of the BECOME event suggested as part of the verb.

The type of event expressed by such combinations is that of resultative Transition. Applying the test with the measure phrase *for a while* supports the idea that the Figure ends up within the spatial domain of the Ground. This is shown in (48a-b) for the examples in (47a-b), respectively.

(48) a. they went in the cage for a while.
b. he came in the room for a while.

As for the tree representation of the examples in (47), I draw the one for (47a) as in (49).

(49)



More examples of [Proc, Res] Vs and Rel$_{PLACE}$Ps are given in (50):

(50) a. Bits of mud fell on the floor. (BNC, W_fict_prose)

b. you need to arrive at the box office after 10.00am. (BNC, W_newsp_brdsht_nat_arts)

c. the stream sinking in Upper Long Churn Cave enters in a waterfall after a short journey underground. (BNC, W_misc)

d. Now mam, go and put the kettle on the fire and get our visitors a nice cup of tea. (BNC, W_fict_prose)

e. She put the tissue between the saucer and the cup. (BNC, W_fict_prose)

f. Tom sighed and threw the socks on the table. (BNC, W_fict_prose)

In all these examples the PP defines the end point or the culmination of a BECOME event expressed as part of the verb. Thus they all entail the pattern given in (51):

(51) BECOME + culmination

The BECOME event is represented by the Res element and the culmination is identified by the PP. For example, in (50a) the bits of mud became on the floor, in (50b) the Figure needs to become at the box office, and so on. Finally, in all the examples given in (47) and (50), since the PP has a goal-directional reading only, it is associated at the internal level of the verb. This can be tested by the word order and use of *do so*. I apply these tests to (47a), (50a) and (50d) only, for space limitations. However, the same is true for the other examples.

(52) a. they went in the cage in Paris.
b. *They went in Paris in the cave.
c. *They went in the cage and we did so in the hut.

(53) a. Bits of mud fell on the floor in his office.
b. *Bits of mud fell in his office on the floor.
c. *Bits of mud fell on the floor and bits of chocolate did so on the stairs.

(54) a. Now mam, go and put the kettle on the fire in the kitchen.
b. *Now mam, go and put the kettle in the kitchen on the fire.
c. *Now mam, go and put the kettle on the fire and dad will do so on the table.

An interesting implication that follows from the ungrammaticality of these examples, especially with the *do so* test, is that since the lexical semantics of these verbs (*go, fall* and *put*) involve a Res subevent and not only a Proc subevent, replacing them with *do so* is not acceptable. Most importantly, the PPs expressing the culmination of the BECOME event cannot be separated from the verb.

5.4.2 *[Proc, Res] Vs with ambiguous PPs*

In this section, I examine the occurrence of [Proc, Res] Vs with PPs headed by Ps such as *under* and *behind*. First, it should be noted that such PPs are not common with all the verbs given in (46). Specifically, they tend not to occur with verbs such as *enter* and *arrive*. Second, these PPs do not have the locative and directional reading with all [Proc, Res] Vs. For instance, with *put* they have a goal-directional reading only; with *go,* PPs headed by *under* have a goal- or route-directional reading, but with *fall, kick* and *throw* such PPs suggest a locative and directional reading. I will propose that such combinations express a resultative Transition event under all readings, but the PP has a different role under each reading. For example, under the goal-directional reading it is a culmination, but under the locative or route-directional reading the PP modifies the motion event.

Representative examples of such combinations are given in (55):

(55) a. I was just going to put them under the pillow. (BNC, W_fict_prose)
b. the child is asked to put the pigs behind the man. (BNC, W_ac_soc_science)
c. … he went under the waterfall with me. (BNC, S_conv)
d. She went behind the screen. (BNC, W_fict_prose)
e. Tuppe put down the rucksack and kicked it under the bed. (BNC, W_fict_prose)

In (55a-b) the PPs *under the pillow* and *behind the man* denote a goal-directional reading only. They define the positions at which the Figure ends up. In (55c) the PP *under the waterfall* can have a goal- or route-directional reading. Under the goal-directional reading, the Figure ends up at the bottom of the waterfall, while under the route-directional reading the Figure goes from unspecified point which is not under the waterfall to another unspecified position via the waterfall. This second reading would involve, for example, going into a cave through a waterfall. The waterfall will be an intermediary point or a trajectory followed by the Figure to go from one point to another. Finally, in (55e) the PP *under the bed* can have a locative or goal-directional reading. Either the Figure kicks the rucksack while being below the bed (locative reading), or he kicks it to a position under the bed (goal-directional reading).

In general, although these verbs are all tagged with a Res feature and the prepositions are taken to be ambiguous in work by Gehrke (2008), the lexical semantics of the verb and the preposition seem to influence each other. For instance, in (55a-b) the PPs suggest a goal-directional reading only because the verb *put* imposes the meaning that the Figure ends up somewhere in a motion event. Similarly, in (55d) the PP *behind the screen* defines an end point of a going motion only, it cannot express that the Figure went via the screen from one position to another. This shows that *behind* is not ambiguous with a verb such as *go*. In contrast, in (55c) *under* can have two types of directional reading with the verb *go* and this is because of the lexical semantics of both *go* and *under* which enable such interpretations (cf. *run under*, discussed in section 5.2.2).

To account for the directional reading of ambiguous PPs with inherently directional verbs of the type exemplified in (46), several proposals have been made in the literature (e.g. Gehrke 2008; Tungseth 2008 and Svenonius 2010). Below I present a sketch of these three accounts followed by a discussion of the way I analyse such combinations.

Gehrke (2008)

As mentioned above, Gehrke (2008) treats PPs headed by English *under* and *behind* as locative only and takes their directional reading to be derived structurally. This is stated in the Structural Ambiguity Hypothesis, given in (17). Moreover, she argues that *under*- and *behind*-phrases function as VP-adjuncts under the locative reading and as VP-complements under the directional reading. In Gehrke (2008), the directional reading suggested by *under*- and *behind*-phrases can be goal or route. The goal reading of these PPs is possible with *put*-verbs, (56), while the route reading is possible with *swim*-verbs, (57). Examples (56) and (57) are from Gehrke (2008: 93-94).

(56) a. Nino kicked the ball under the table. [locative/ goal-directional]
b. Giorgos jumped behind the door. [locative/ goal-directional]

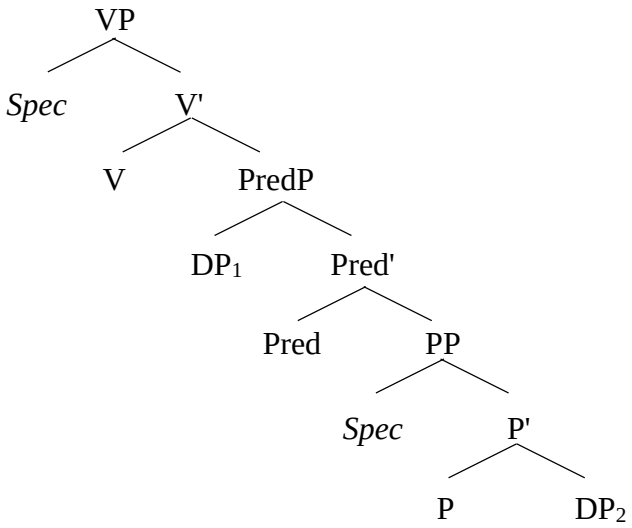
(57) a. The boat floated under the bridge. [locative/ route-directional]
a. Jakub swam behind the boat. [locative/ route-directional]

Put-verbs include motion verbs such as *put, fall, kick* and *throw,* while *swim*-verbs include motion verbs such as *swim, dance, crawl* and *walk*. In terms of my classification, the *put*-verbs are examples of the [Proc, Res] V class, while the *swim*-verbs belong to the [Proc] V class (see section 5.2.2 for discussion on [Proc] Vs and ambiguous spatial PPs). Gehrke (2008) takes the goal reading of the *under*- and *behind*-phrases with *put*-verbs to support the Structural Ambiguity Hypothesis because the directionality of these PPs is derived structurally. More precisely, their directionality is due to their occurrence with *put*-verbs, which Gehrke proposes are:

> either lexical accomplishment/achievement verbs (involving BECOME) or […] are at least associated with an incremental structure which is crucial for the construction of a BECOME event with accomplishments.
>
> (Gehrke 2008: 122)

The syntactic structure that Gehrke (2008) proposes in case of the goal-directional reading of ambiguous locative PPs such as *under*-phrases is as in (58). The PP is a complement to PredP which is licensed by the BECOME event involved in *put*-verbs.

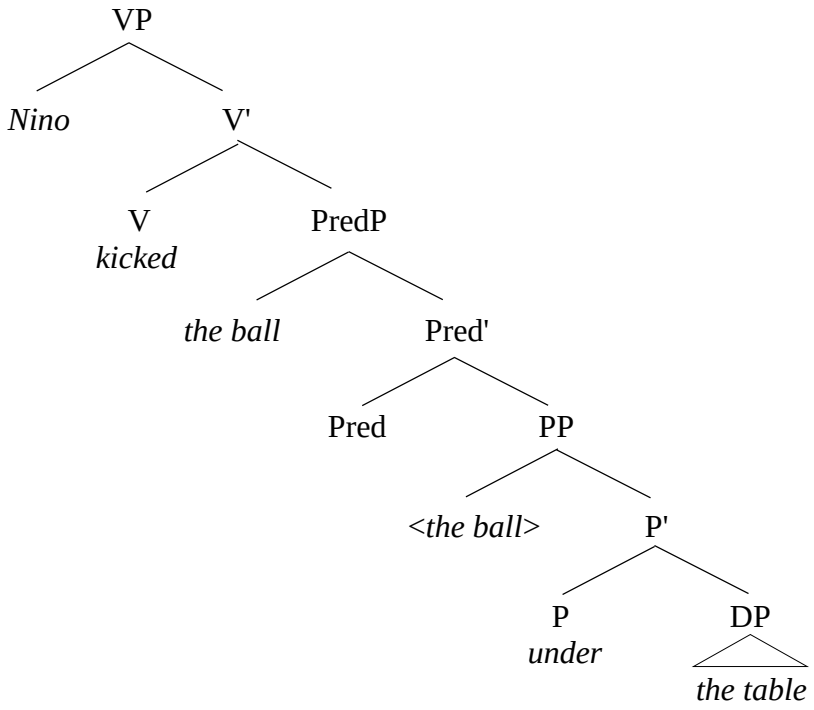
(58)



(Gehrke 2008: 83)

Gehrke (2008) proposes a Pred projection which turns a secondary non-verbal predicate like a PP or AP into part of the verbal predicate. In this way both the verbal and the non-verbal predicate will be linked and form a complex predicate (a syntactically-derived Accomplishment). The semantics underlying the configuration in (58) is based on Rothstein's (2004) account of Accomplishment events. In (58), DP_1 is the Figure and DP_2 is the Ground. DP_1 is the subject of the sentence with intransitive verbs, but the object with transitive verbs (Gehrke 2008). As for the lexicalisation of the functional head Pred, it seems to be a null element, at least in English. In her analysis of German and Dutch, there is also no specific lexical item or morpheme which goes under the Pred head. For the goal-directional reading of the example in (56a), the lexicalisation of the structure in (58) is as in (59).

(59)

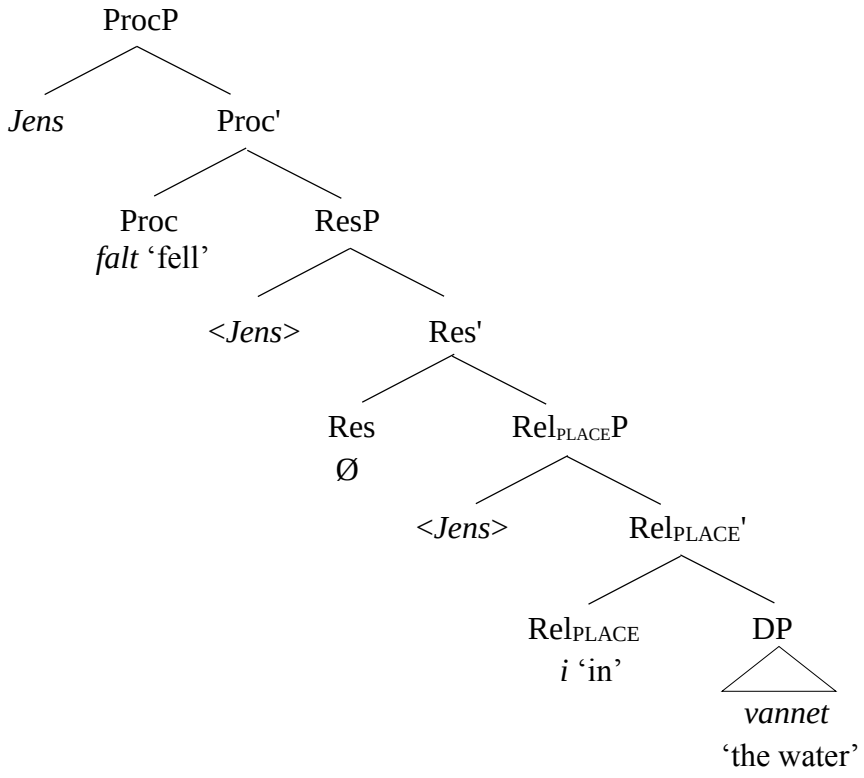


Tungseth (2008)

In her analysis of ambiguous PPs in Norwegian, such as *i* 'in', *på* 'on' and *under* 'under', Tungseth (2008) proposes that the ambiguity is due to the verb structure. Building on insights from Thomas (2001) and Folli and Ramchand (2005), she assumes that the verb root of some manner of motion verbs, including e.g. *run*, is tagged with an optional [direction] feature which licenses a null ResP in the verbal structure. More precisely, from Thomas (2001), Tungseth (2008) takes the idea that the directional reading suggested by Ps such as *in* and *on* with some manner verbs is due to the availability of a direction element in its meaning. From Folli and Ramchand (2005), she takes the idea that the presence of a Res element is crucial to give rise to a goal-directional reading of locative PPs. An illustrative example is given in (60a), cited from Tungseth (2008: 67). Its syntactic structure is as in (60b):

(60) a. Jens falt i vannet
Jens fell in water.the
'Jens fell in the water.'

b.



Svenonius (2010)

In his analysis of similar elements in English, Svenonius (2010) proposes the presence of a separate null Path element which is licensed by motion verbs. Specifically, he suggests that English has the null Path elements TO and VIA. He assumes that the directional reading is due to a null Path element (=my Rel_{PATH}) (Svenonius 2010: 130). This is illustrated in (61a-b), with linear structures as in (62a-b), respectively. Examples (61a-b) are from Svenonius (2010: 145).

(61) a. The submarine sailed below the ice.
b. The boat sailed under the bridge.

(62) a. [$_{PP}$ [$_{RelPATH}$ TO [$_{RelPLACE}$ below [$_{DP}$ the ice]]]]
b. [$_{PP}$ [$_{RelPATH}$ TO [$_{RelPLACE}$ under [$_{DP}$ the bridge]]]]

A question that can be asked about (62a-b) is why the directional reading suggested in the PP structure is that of goal, represented by the null variant of *to*, rather than, for example, source, represented by a null variant of *from*. It is worth mentioning that *from* can also precede *below* and *under* as shown in (63).

(63) a. afterwards a voice had been heard from below the rubble. (BNC, W_newsp_other_report)

b. He bent down and pulled a large rolled-up blanket from under the bed. (BNC, W_misc)

Svenonius (2010: 144) states that English "commonly allows the goal interpretation with locative expressions". He takes this to be well supported under the goal bias hypothesis according to which it is claimed that goal interpretations are favoured over source when encoding motion events.[108] Svenonius (2010) further distinguishes between the two Ps in (61a and b). Although both Ps accompany motion verbs, the most natural reading of *below* is that of locative while the one of *under* is of directional. Besides, while with *below* the null Path element suggested is that of TO only, with *under* two null Path elements are possible, namely TO and/or VIA. Thus, *the boat sailed under the bridge* can be interpreted either as the boat sailing to a position under the bridge or to a position beyond the bridge via a path under the bridge. Hence, (61b) can also be represented as in (64):

(64) $[_{PP}\,[_{RelPATH}$ VIA $[_{RelPLACE}$ under $[_{DP}$ the bridge]]]]

The two directional readings of the $Rel_{PLACE}P$ in (61b) can be represented as in (65). Under the goal-directional reading of the PP the null element suggested would be TO and under the route-directional reading the null element would be VIA:

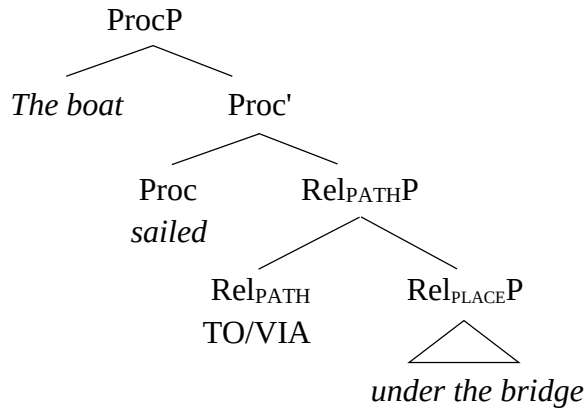
[108] Evidence in support of the goal bias hypothesis is found in work by Ikegami (1982), Stefanowitsch and Rohde (2004) and Lakusta and Landau (2005). For example, Ikegami (1987) proposes the 'goal over source principle' to account for the goal-source asymmetry in grammar. He observes that goal elements do not need to be marked, (ib), in comparison to source elements, (ia), which need to. The examples in (i) are from Ikegami (1987: 126).

(i) a. run from behind the wall.
b. run behind the wall.

In Lakusta and Landau's (2005) experiments, it is shown that speakers show a conceptual goal bias in their description of different manner of motion events, change of state, change of possession and attachment/detachment.

However, the goal bias hypothesis has been rejected in some work (see e.g. Gehrke 2008; Ishibashi 2010). For example, Gehrke (2008) hypothesises that the goal bias should not be taken as the result of a syntactic or semantic rule or principle, but is an extra-linguistic phenomenon. In this thesis I remain agnostic as to which view is the right one.

(65)



In the next section I compare the different analyses just reviewed and propose an analysis that accords with the ideas I have developed so far. Mainly I propose that the goal-directional reading suggested by the PP in such constructions is licensed by the Res element recognised as part of the verb.

5.4.3 *Discussion and proposal*

Putting aside the distinction between the goal and route meanings of *under*, what is common in Gehrke (2008), Tungseth (2008) and Svenonius (2010) is that *under* is a locative element, with its directional meaning being licensed by specific motion verbs. The goal-directional reading of ambiguous PPs with such verbs can be syntactically represented either by assuming a PredP (Gehrke 2008), a null ResP (Tungseth 2008) or a null Path (=my Rel$_{PATH}$) element (Svenonius 2010).

The only difference between Gehrke's structure, given in (58), Tungseth's proposal, given in (60b), and Svenonius' proposal, given in (65), lies in the nature of the projection that links the VP/ProcP and the PP/Rel$_{PLACE}$P. In Gehrke (2008), a PredP is proposed as a syntactic mediator to glue together a verbal predicate and a non-verbal predicate which can derive an Accomplishment event. This PredP has to be licensed by a BECOME event provided by either the verbal predicate or the secondary predicate (e.g. a PP) which should be incremental (scalar) in nature to give rise to the BECOME event. In Tungseth, a null ResP is posited which belongs to the verbal structure. In Svenonius (2010), a null Path (Rel$_{PATH}$) is posited which belongs to the prepositional domain. The question that arises here is which structure is the most plausible. More specifically, which one of the null projections assumed is essential?

While Gehrke (2008) assumes that *put*-verbs (=[Proc, Res] Vs) involve a BECOME event and that the PredP represents the BECOME event syntactically, she does not take the PredP to be part of the verb. Instead she takes it to link the VP and PP. In Tungseth (2008) the null Res is licensed by a [direction] feature associated with the verb root of some manner of motion verbs such as 'run' in Norwegian. I do not take such verbs to give rise to a resultative event with Rel_{PLACE}Ps (see section 5.2). Besides it is not stated under her analysis if the null Res accounts for all types of motion verbs, leaving the analysis imprecise. Finally, a problematic issue in the analysis of Svenonius (2010) has to do with lack of a distinction between the types of motion verbs that license a goal- or route-directional reading. More importantly, assuming a null Path element does not reflect the syntactic structure of the type of motion event expressed by [Proc, Res] Vs and such ambiguous PPs.

Contrary to these accounts, I propose that the goal-directional reading of the ambiguous PPs headed by English *under* and *behind* is licensed by the Res feature involved in the verb (as in (55a-b) and (55d). The whole event expressed is that of Transition, which is lexically realised as part of the verb. The verb involves a BECOME event and the PP defines the end point or the culmination of this BECOME event. Furthermore, I propose that under the locative or route-directional reading of the PP, the type of event expressed is that of Transition again, since the verb suggests a result subevent. Under such readings the PP modifies the whole motion event.

The difference between these two cases (when the PP is a culmination and when it is not) can be shown by examining the type of VP-PP association under these different readings. In her analysis of similar ambiguous PPs in Norwegian, such as *i* 'in', *på* 'on' and *under* 'under', Tungseth (2008: 36-45) applies a set of diagnostics to distinguish the two readings suggested by the PPs. The diagnostics involve the use of temporal adverbials, VP-topicalization, *do so* substitution, ordering of adverbials, PP-topicalization and clefting, distribution of anaphora and accent placement (Tungseth 2008: 36-45). Based on the differences, she shows that the two readings suggest two different syntactic associations. Under the locative reading, the PP is associated at the VP-external level as an adjunct, and under the directional reading the PP is associated at the VP-internal level as a complement. Similarly, Gehrke (2008), following Thomas (2001), applies the tests of inserting adverbial materials, coordination constructions and preposed-PP constructions. She shows that the directional reading of an ambiguous

English P will not be available if the PP is separated from the VP by other material such as adverbials, or used in coordination constructions or preposed-PP constructions (for details on the application of these tests, the reader is referred to Tungseth (2008: 36*ff*, 61*ff*) and Gehrke (2008: 102-112).

In the examples given in (55), the only case where the PP can suggest a locative or a directional reading is (55e). This is repeated as (66).

(66) Tuppe put down the rucksack and kicked it under the bed. (BNC, W_fict_prose)

In examining the ambiguous case in (66), I apply the tests of temporal adverbials, PP-topicalization, inserting adverbial material and coordination so as to show the different readings suggested by the PPs. For convenience I use the shorter form of the example, which is *he kicked it under the bed*.

(67) a. He kicked it under the bed for an hour. [locative/*directional]
b. He kicked it under the bed in a second. [*locative/directional]

(68) Under the bed he kicked it. [locative/*directional]

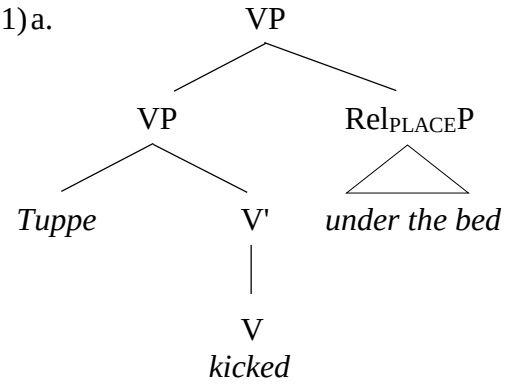
(69) He kicked it at maximum speed under the bed. [locative/*directional]

(70) He kicked it under the bed and on the carpet. [locative/*directional]

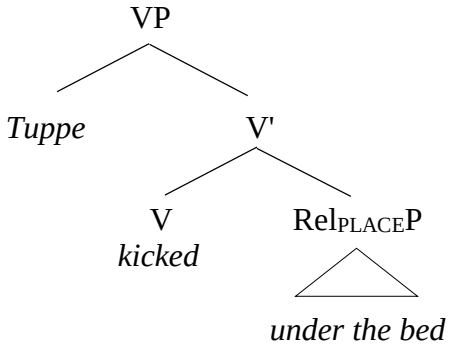
The use of a durative PP restricts the $Rel_{PLACE}P$ to the locative reading, (67a), whereas the use of a time-frame PP restricts the $Rel_{PLACE}P$ to the directional reading, (67b). This means that the $Rel_{PLACE}P$ is atelic under the locative reading, but telic under the directional reading. In (68), where the PP is topicalised, the $Rel_{PLACE}P$ has a locative reading only. Further, inserting adverbial material between the verb and the PP, as in (69), causes the directional reading to be impossible. Finally, the directional reading will not be available if the PP is used in a coordination construction, as in (70). In sum, these tests show that the two readings suggested by $Rel_{PLACE}P$ in (66) can be justified on a syntactic basis. Under the locative reading, the $Rel_{PLACE}P$ does not need to be adjacent to the verb, while under the directional reading it must be. This conclusion is in line with the findings in Tungseth (2008) and Gehrke (2008). More precisely, under the

locative reading the $Rel_{PLACE}P$ functions as an adjunct because it modifies the whole motion event and under the directional reading the $Rel_{PLACE}P$ is a V complement because it defines the end point of the Figure in a motion event. These two readings can be represented syntactically as in (71a-b):

(71) a. [locative]



b. [directional]



5.5 [Proc, Res] Vs + $Rel_{PATH}Ps$

The occurrence of [Proc, Res] Vs with $Rel_{PATH}Ps$ reveals interesting facts about Res and Rel_{PATH} elements. [Proc, Res] Vs can occur with different types of $Rel_{PATH}Ps$. In section 4.4.2, I assumed that these verbs are not endowed with a Path element as claimed in work by Talmy (1985, 1991). In fact, the assumption that these verbs are encoded with a Path element (my Rel_{PATH}) seems to be based on failure to distinguish the Res element from Rel_{PATH}. The former expresses a result or an end state of a Figure, while the latter relates the Figure to a specific point in a path domain.

The type of event expressed by such combinations is always that of a resultative Transition, regardless of the type of Rel_{PATH} used. However, the type of Rel_{PATH} determines its contribution to the event. For example, GoalRelPs can be the culmination

of a BECOME event suggested in the verb, while SourceRelPs and RouteRelPs cannot. Recall that in section 5.3.2, I have shown that for [Proc] Vs and Rel_{PATH}Ps to suggest a resultative Transition event, the Figure should end up being within the spatial domain of the Ground, as is the case with, for example, *into* and *onto*. With [Proc, Res] Vs, GoalRelPs such as *to* and *up to* can be taken as the culmination of the motion event undergone by the Figure. To illustrate, consider the sentences in (72) (example (72c) is repeated from (34a) in chapter 4).

(72) a. There is now every possibility that we will go to York. (BNC, W_newsp_tabloid)
b. I went up to the bank. (BNC, S_conv)
c. the lord marquis had entered into the Tower of London. (BNC, W_ac_humanities_arts)

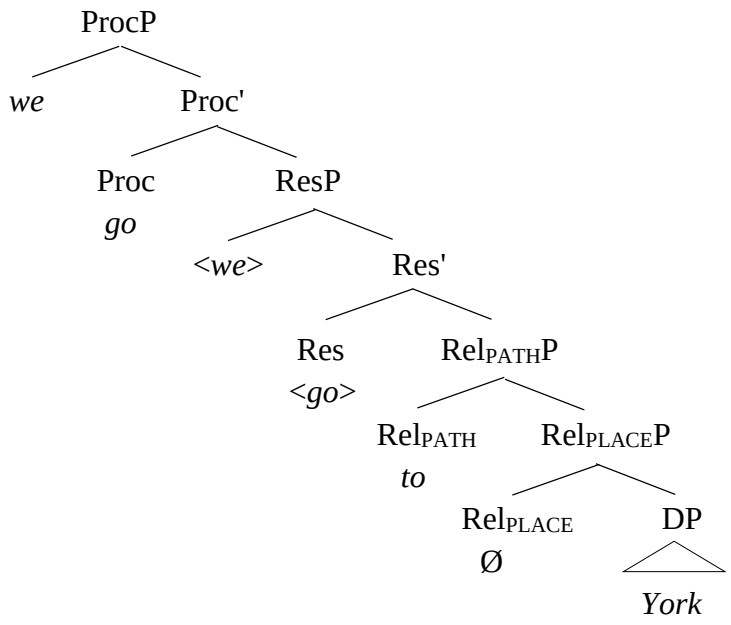
In these examples, there is a punctual event expressed by the verbs *go* and *enter*. Therefore, there is a resultative Transition event. The PPs *to York, up to the bank* and *into the tower of London* can be taken as the final point in the motion event. This can be tested through inserting the measure phrase *for a while*.

(73) a. We will go to York for a while.
b. I went up to the bank for a while.
c. the lord marquis had entered into the Tower of London for a while.

In (73a), the phrase *for a while* implies that the Figure will be in York for a while, not that the going is for a while. That is, the phrase *for a while* modifies the state of being in York. In section 5.3.2, we have seen that in the example *they walked to the teashop for a while*, the phrase *for a while* modifies the verb and not the PP. Similarly, in (73b), the phrase *for a while* modifies the state of being at a position close to the bank, and in (73c) the Figure had been inside the tower for a period of time.

In the examples in (72) an overt Rel_{PATH} element is present. It thus lexicalises the Rel_{PATH} terminal node. For example, the syntactic structure of the [VP + PP] construction in (72a) is as in (74).

(74)



Finally, the occurrence of SourceRelPs and RouteRelPs with [Proc, Res] Vs is also common, but in such cases the PP does not suggest a culmination. Rather it has its normal function, which is that of relating the Figure to a Ground in a path. Examples of such combinations are provided in (75).

(75) a. The Tower can only be entered from the battlements. (BNC, W_misc)
b. Ten thousand tonnes of rice has already arrived from Italy. (BNC, W_non_ac_nat_science)
c. a maid entered through another door. (BNC, W_fict_prose)
d. The six-month-old animal fell through a hole less than two feet wide in a field at Great Burdon. (BNC, W_newsp_other_sports)

However, not all types of Rel_{PATH}Ps are allowed with [Proc, Res] verbs, due to the presence of the Res element. For example, the verb *arrive* does not co-occur with Rel_{PATH}Ps because this verb requires a culmination in the form of a Rel_{PLACE}P such as an *at-/in*-phrase. Also combinations such as **enter/reach/fall + along/around/across/away from/towards* are ungrammatical. This is due to the lexical semantics of these verbs and the prepositions, which seem to show some kind of sensitivity towards each other.

In sum, I have looked at the occurrence of [Proc, Res] Vs with different types of Rel_{PATH}Ps in English. I have shown that these verbs can occur with GoalRelPs more

productively, compared to SourceRelPs and RouteRelPs, because such PPs (especially those headed by *to/into/onto*) can function as the culmination of the BECOME event suggested as part of the verb.

In the previous sections I have shown that Process events can be expressed in English by [Proc] Vs combined with Rel_{PLACE}Ps, SourceRelPs and RouteRelPs. I have shown that whether the PPs are adjuncts or complements, they do not function as a culmination. Further I have shown that resultative Transition events can be derived syntactically by combinations made up of [Proc] Vs and Ps such as *into* and *onto*. I have shown that since these PPs can suggest a resultative Transition event with [Proc] Vs, they determine the point at which the matrix event culminates. More specifically, these PPs define the spatial domain within which the culmination is attained. Consequently, they trigger the construction of a BECOME event involved in Transition events. Syntactically I posited a null Res element in the syntactic structure of such combinations to account for the BECOME event. Transition events can also be expressed lexically with [Proc, Res] Vs. When occurring with a PP headed by Ps such as *in/on/behind/to/into*, the PP functions as the culmination of the BECOME event recognised as part of the verb. Other PPs, headed by e.g. *from* and *through*, do not contribute to the resultative motion event other than modifying the whole motion event. In table 5.1 I summarise all these findings.

Combination type	**PP reading**	**PP position**	**Type of event**
[Proc] Vs + *in/on/above*-PPs	locative	adjunct	Process
[Proc] Vs + *under*-PPs	locative/ route-directional	adjunct/ complement	Process
[Proc] Vs + *into/onto*-PPs	directional	complement	Transition
[Proc] Vs + *to/up to/towards*-PPs	directional	complement	Process
[Proc] Vs + SourceRelPs/RouteRelPs	directional	complement	Process
[Proc, Res] Vs + *in/on/behind/to/into*-PPs	mostly goal-directional	complement	Transition
[Proc, Res] Vs + *from/through*-PPs	source/route	complement	Transition

Table 5.1 Motion VPs and spatial PPs in English

Further evidence in line of this analysis can be gained from corresponding facts in Kurdish and Arabic. In those languages too, combinations of [Proc] Vs and spatial PPs can suggest a resultative Transition event, but a lexicalised AxPart is crucial in these languages. These facts will be discussed in the following two sections.

5.6 Kurdish

In this section I examine the occurrence of [Proc] Vs and [Proc, Res] Vs with the two main types of spatial PPs as used in Kurdish. Similar to the previous sections, the discussion will include reference to the types of reading expressed by the PP, its association with the verb and the type of event expressed. I will show that Kurdish is similar to English in terms of expressing Process events by [Proc] Vs and different spatial PPs. However the combination of [Proc] Vs and PPs that involve *bo/a-* 'to' + a lexicalised AxPart can express a resultative Transition event.

5.6.1 *[Proc] Vs + Rel$_{PLACE}$Ps*

In Kurdish, [Proc] Vs are commonly used in combination with spatial PPs, be it Rel$_{PLACE}$Ps, such as *lasar* 'on/above' DP, *lazher* 'below' DP, etc. or Rel$_{PATH}$Ps, such as *bo* 'to' DP, *tākū* 'up to' DP, etc. In this subsection, I will consider their occurrence with Rel$_{PLACE}$Ps. First consider the following examples:

(76) a. la bākh-aka-dā pyāsa-mān-kird
in park-DEF-PLACE stroll-1PL-do.PST
'We strolled in the park.'

b. lasar pird-aka-dā řā-mān-kird
above bridge-DEF-PLACE away-1PL-do.PST
'We ran on the bridge.'

In (76a), the PP *la bākhakadā* 'in the park' defines the location of the strolling activity, and in (76b), the PP *lasar pirdakadā* 'on the bridge' defines the position of the running. Although Kurdish is an SOV language, the PP can also follow the verb. In the examples in (76a-b), putting the PP after the verb will maintain the grammaticality of the sentence. This flexibility of the PP position suggests the existence of PP scrambling in

Kurdish. In addition, some speakers believe that when the PP is fronted, this is due to stress. However, there are PPs which can only appear to the right of the verb, such as phrases headed by the P element *-a* ‘to’, which is suffixed to the verb (to be discussed in section 5.6.2).

To determine the nature of the association of the PP with the verb, we can use the test of word order, such as inserting adverbial material, e.g. *la kātzhmer yak* ‘at one o’clock’ and *ba kherāy* ‘quickly’. In (77), I apply these tests to the case exemplified in (76a):

(77) a. (la) kātzhmer yak-ī nīwaro la bākh-aka-dā
at hour one-EZ afternoon in park-DEF-PLACE
pyāsa-mān-kird
stroll-1PL-do.PST
‘We strolled in the park at one o’clock.’

b. la bākh-aka-dā (la) kātzhmer yak-ī nīwaro
in park-DEF-PLACE at hour one-EZ afternoon
pyāsa-mān-kird
stroll-1PL-do.PST
‘We strolled in the park at one o’clock.’

c. la bākh-aka-dā ba kherāy pyāsa-mān-kird
at park-DEF-PLACE with speed stroll-1PL-do.PST
‘We strolled in the park quickly.’

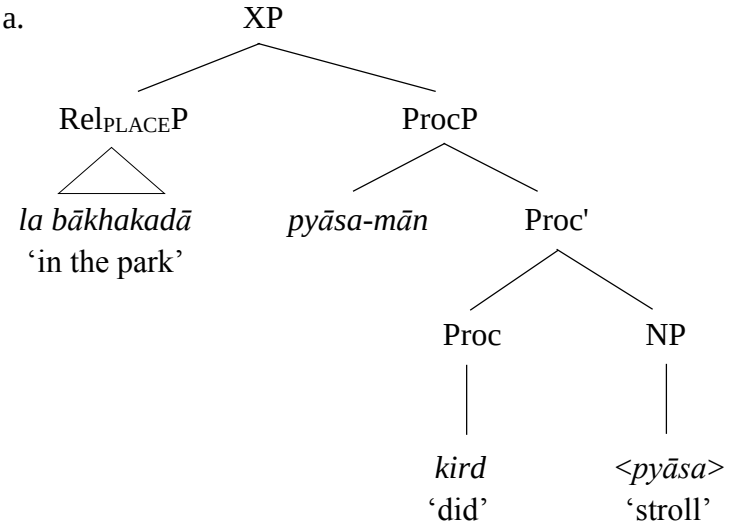
The grammaticality of the examples in (77) suggests that the PP *la bākhakadā* ‘in the park’ is an adjunct, because it does not need to be adjacent to the verb. The PP modifies the whole event expressed by the verbal predicate. As to the type of event expressed by such combinations, it is that of Process. This is shown by the possibility of inserting durative temporal adverbials, such as *bo yak daqa* ‘for one minute’, *bo dū kātzhmer* ‘for two hours’, etc. but not time-frame adverbials such as *ba yak daqa* ‘in one minute’, *ba dū kātzhmer* ‘in two hours’, etc. This is illustrated in the examples in (78):

(78) a. *ba/bo dū kātzhmer la bākh-aka-dā
in/for two hour at park-DEF-PLACE
pyāsa-mān-kird
stroll-1PL-do.PST
'We strolled in the park for two hours/*in two hours.'

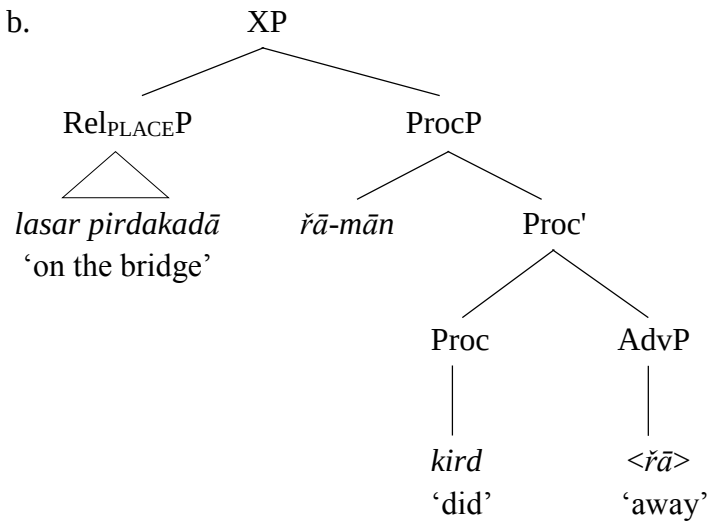
b. *ba/bo yak kātzhmer lasar pird-aka-dā řā-mān-kird
in/for one hour above bridge-DEF-PLACE away-1PL-do.PST
'We ran on the bridge for one hour/*in one hour.'

Based on these facts, the syntactic structures I propose for the examples in (76a-b) are as in (79a-b), respectively. Since the PPs are adjuncts, I take them to adjoin to XP. This XP could be CP, TP or any projection higher than ProcP. For the elements involved in the compound verbs, I apply the analysis proposed in chapter 4 for Kurdish motion verbs. I take the non-verbal elements to be complements of the Proc head and form a Proc-bar (see section 4.6.3).[109]

(79) a.



[109] Recall that, following Kareem (in preparation) I take the element that occurs between the non-verbal element and the verbal element in compound verbs (here: *mān*) to represent a subject clitic. See section 4.6.3 for discussion.



In Kurdish, Rel_{PLACE}Ps which can suggest a directional reading with [Proc] Vs are not common. Therefore, nothing can be reported on that.

5.6.2 *[Proc] Vs + Rel_{PATH}Ps*

In this subsection I discuss the occurrence of [Proc] Vs and Rel_{PATH}Ps headed by elements such as *bo/-a* ‘to’, *tākū* ‘up to’ and *baraw* ‘towards’. Such combinations express Process events except when the PP contains an element such as *bo/a-* and an overt AxPart. First consider the combinations of [Proc] Vs and *bo/-a*-phrases (‘to-phrases’) in (80).

(80) a. řā-yān-kird bo pird-aka
away-3PL-do.PST to bridge-DEF
‘They ran to the bridge.’

b. bo pird-aka řā-yān-kird
to bridge-DEF away-3PL-do.PST
‘They ran to the bridge.’

c. řā-yān-kird-a māł-awa
away-3PL-do.PST-to home-PLACE
‘They ran home.’

In Sorani Kurdish, a *bo*-phrase usually follows the verb, as in (80a), though it can also precede the verb as can be seen in (80b). In chapter 3 I have taken *bo* to have the suffix P element *-a* ‘to’ as its allomorph, where the two are in free variation. As mentioned there, this element is suffixed to verbs and thus its DP complement always follows the

verb, as shown in (80c). This is because there is an intrinsic morphological requirement that *-a* 'to' has to be attached to verbs. On this basis, I take a PP headed by *bo* to originate in a position to the right of the verb, as in (80a), but it undergoes movement to Spec-XP in case of (80b). The question that arises here is whether the relevant XP is higher than ProcP or within the ProcP domain. To answer this question, I apply the test of inserting adverbials such as *ba kherāy* 'quickly', which is useful in this regard. This test can only be applied to *bo*-phrases, not its allomorph *-a*, because *-a* is obviously suffixed to the verb and this sequence cannot be interrupted.

(81) a. ba kherāy řā-yān-kird bo pird-aka
with speed away-3PL-do.PST to bridge-DEF
'They ran to the bridge quickly.'

b. ba kherāy bo pird-aka řā-yān-kird
with speed to bridge-DEF away-3PL-do.PST
'They ran to the bridge quickly.'

c. *řā-yān-kird ba kherāy bo pird-aka
away-3PL-do.PST with speed to bridge-DEF
'They ran quickly to the bridge.'

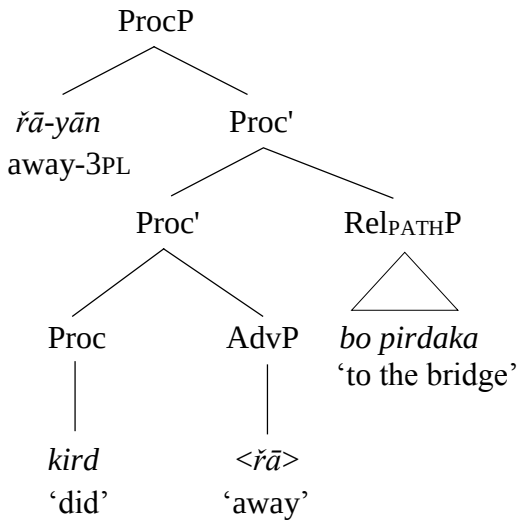
d. *bo pird-aka ba kherāy řā-yān-kird[110]
to bridge-DEF with speed away-3PL-do.PST
'They ran quickly to the bridge.'

As can be seen, ungrammatical alternatives to (81a-b) are as in (81c-d). In (81a-b), the occurrence of the Rel$_{PATH}$P *bo pirdaka* 'to the bridge' and the verb *řāyānkird* 'ran' is not interrupted by the adverbial *ba kherāy* 'quickly', whereas in (81c-d) *bo pirdaka* is separated from the verb by *ba kherāy*. These examples show that PPs headed by *bo* and *-a* are complements. They are closely related to the verb and cannot be separated from it. Based on this analysis I take the Rel$_{PATH}$P headed by *bo* 'to' in (80b) to undergo movement to Spec-ProcP. The syntactic representations of the examples in (80a-c) are as in (82a-c), respectively. It is worth noting that although the position of the PP in these tree diagrams as sisters to Proc-bar suggests that they are adjuncts, they are not. I take the PP to be the complement of the whole compound verb represented as Proc-bar.

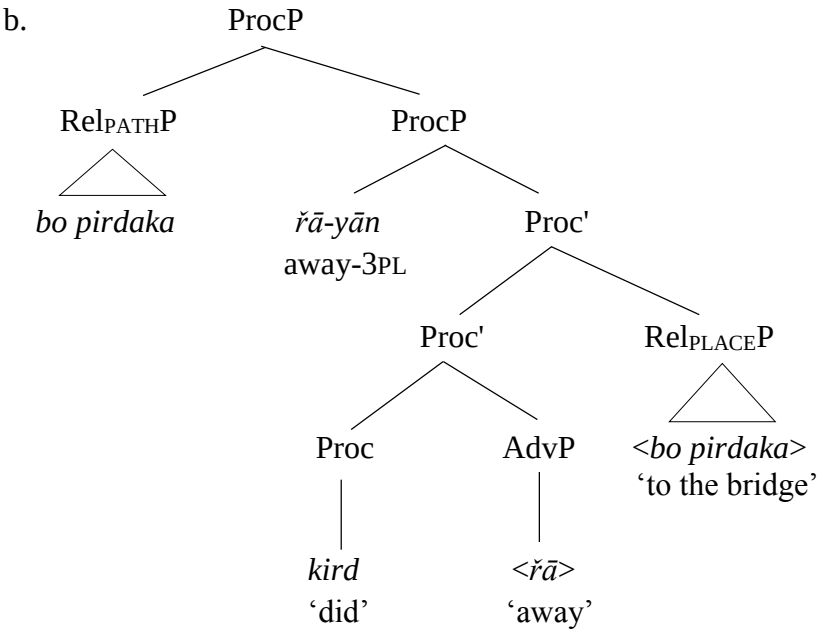
[110] For some native speakers, example (81d) is accepted if we emphasise the PP *bo pirdaka* 'to the bridge'. However, since I do not deal with issues of emphasis here, I disregard this potential complication.

An alternative analysis would be to take Proc + AdvP in (82a-c) and subsequent examples to be a single unit with the label Proc. However, such a structure cannot account for the separability of the two items.[111]

(82) a.

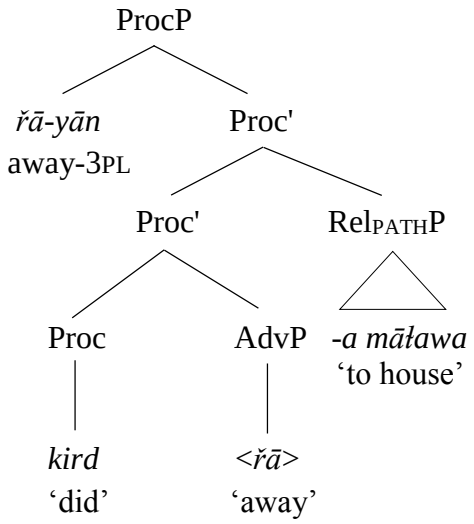


b.



[111] Representing the compound verbs in the structures in (82) as Proc* is also a possibility which can reflect their nature as a unit that is bigger than a lexical word but smaller than a phrase. However, I would rather leave this for further studies in the future.

c.



Next I examine examples of [Proc] Vs and PPs headed by *tākū* 'up to' and *baraw* 'towards'. Consider the following examples:

(83) a. tākū pird-aka mala-yān-kird
until bridge-DEF swim-3PL-do.PST
'They swam up to the bridge.'

b. baraw pird-aka mala-yān-kird
towards bridge-DEF swim-3PL-do.PST
'They swam towards the bridge.'

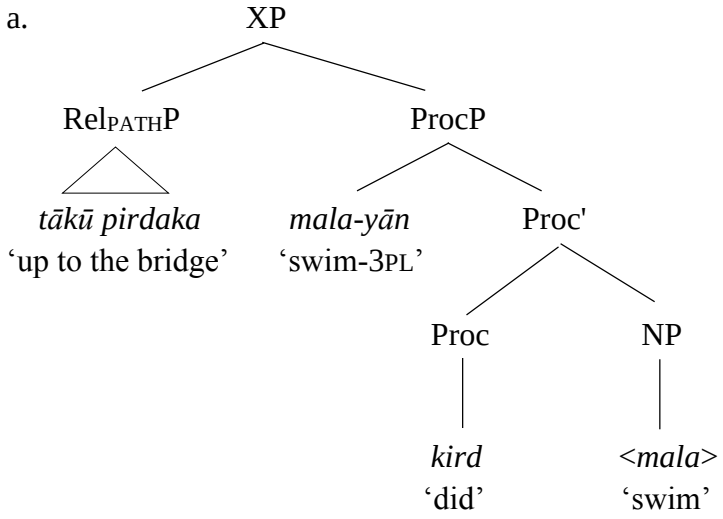
In Kurdish, *tākū*- and *baraw*-phrases mostly precede the verb as shown in (83a-b). Their appearance before the verb can suggest that they are recognised at the external level of the verb. One piece of evidence in support of this comes from the test of inserting an adverbial, which preserves the grammaticality of the sentences. Thus inserting the adverbial *ba kherāy* between *tākū*-phrase and *baraw*-phrase on the one hand and the verb on the other hand in (83) does not cause ungrammaticality. This is illustrated in the examples in (84).

(84) a. tākū pird-aka ba kherāy mala-yān-kird
until bridge-DEF with speed swim-3PL-do.PST
'They swam quickly up to the bridge.'

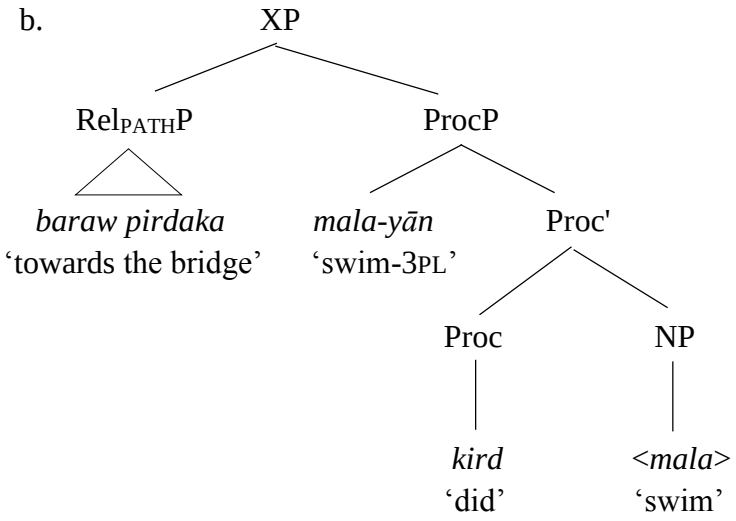
b. baraw pird-aka ba kherāy mala-yān-kird
towards bridge-DEF with speed swim-3PL-do.PST
'They swam quickly towards the bridge.'

On the basis that PPs headed by *tākū* 'up to' and *baraw* 'towards' are adjuncts, and that they mostly occur to the left of the verb, I assume that they adjoin to a position higher than the ProcP, either Spec-TP or CP. Due to lack of evidence as to the exact position, I represent it as Spec-XP in (85). The syntactic structure I propose for the examples in (83a-b) are given in (85a-b), respectively:

(85) a.



b.



To sum up, in Kurdish, Rel$_{PATH}$Ps headed by *bo/-a* 'to' are complements and as such they need to be adjacent to the verb. In contrast, PPs headed by *tākū* 'until' and *baraw* 'towards' behave as adjuncts. They can be separated from the verb by adverbials and mostly occur to the left side of the verb. The non-unitary position of these Rel$_{PATH}$Ps in Kurdish shows that specific Rel$_{PATH}$Ps can be adjuncts, contrary to the assumption in the literature that such PPs are always V complements (cf. e.g. Folli & Harley 2006; Gehrke 2008). For example, contrary to *up to*- and *towards*-phrases in English, PPs

headed by *tākū* and *baraw* are adjuncts in Kurdish. The type of events expressed by [Proc] Vs and Rel$_{PATH}$Ps as exemplified in (80) and (83) is that of a Process.

The analysis made for PPs headed by *tākū* and *baraw* is also applicable to constructions that are made up of a [Proc] V and other Rel$_{PATH}$Ps, such as RouteRelPs.[112] Such combinations suggest a Process event only, with the PP modifying the whole motion event. Illustrative examples are given in (86):

(86) a. badrezhāy-ī řūbār-aka-dā řā-mān-kird
along-EZ river-DEF-PLACE away-1PL-do.PST
'We ran along the river.'

b. badawr-ī bākh-aka-dā pyāsa-mān-kird
around-EZ park-DEF-PLACE stroll-1PL-do.PST
'We strolled around the park.'

In the previous examples, we have seen that the type of events expressed by the combinations of a [Proc] V and a spatial PP is that of Process only. However, in Kurdish, the occurrence of [Proc] Vs and 'to'-phrases can give rise to a resultative Transition event whenever an AxPart is phonologically realised. Consider the following:

(87) a. bo nāw zhūr-aka řā-yān-kird
to inside room-DEF away-3PL-do.PST
'They ran into the room.'

b. tayr-ak-ān fřī-n-a sar chyā-ka
bird-DEF-PL fly.PST-3PL-to top mountain-DEF
'The birds flew onto the mountain.'

In (87a), the Figure 'they' end up inside the Ground at the end of the running activity. Similarly, in (87b), the Figure *tayrakān* 'the birds' end up on top of the mountain at the end of the flying activity. The event suggested in these examples is not a Process only, but a resultative Transition event, which is due to the specification of the culmination.

[112] In Kurdish, combinations made up of [Proc] Vs and SourceRelPs are not very common; the only case I can think of is e.g. *řāmānkird la qutābkhāna* 'we ran from school'. This is probably due to the fact that Kurdish has only one element that denotes source, which is *la* 'from', and it usually occurs with [Proc, Res] Vs.

The culmination is suggested by the GoalRelPs headed by *bo* and *-a* and containing the nominal element *nāw* ‘interior’ and *sar* ‘top’. In comparison to the examples in (80a-c) above, which do not suggest a resultative Transition event, the examples in (87a-b) suggest one. Evidence in support of this claim can be gained from the following examples.[113]

(88) a. ’awān bo māł-awa řā-yān-kird bałām
they to house-PLACE away-3PL-do.PST but
na-chūn-a zhūr-awa
not-go.PST.3PL-to inside-PLACE
‘They ran to the house but they did not go inside.’

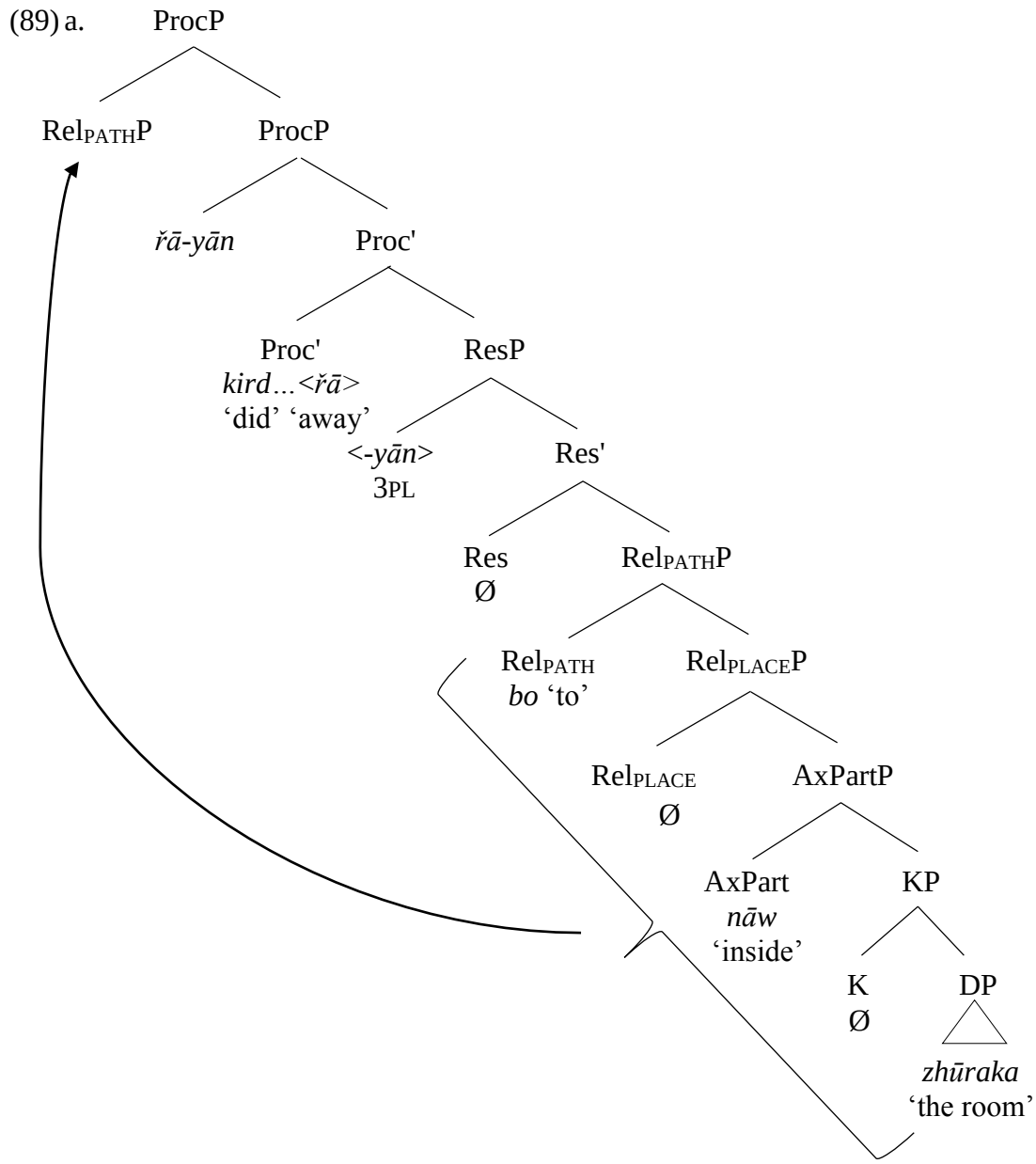
b. *’awān bo nāw zhūr-aka řā-yān-kird bałām
they to inside room-DEF away-3PL-do.PST but
na-chūn-a zhūr-awa
not-go.PST.3PL-to inside-PLACE
‘*They ran into the room but they did not go inside.’

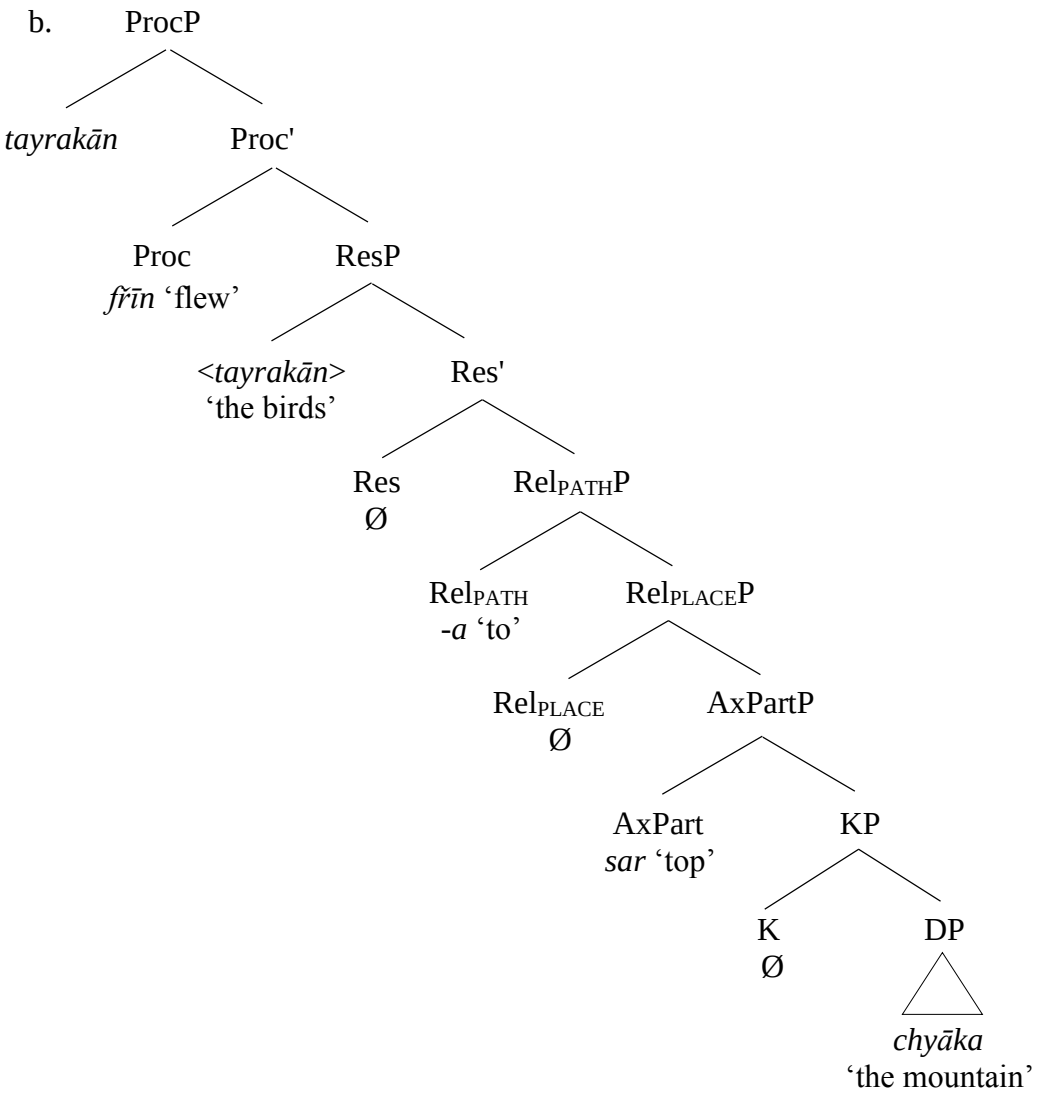
In (88a), we can say that the people (the Figure) ran to the house but they did not go inside. This is because *bo* ‘to’ does not necessitate the existence of the Figure inside the spatial domain of the Ground. It only relates the Figure to the end point of the path. In contrast, in (88b) we cannot say that they ran to inside the room but that they did not go inside. This interpretation is not possible since the AxPart is lexicalised.

The syntactic representations of (87a-b) are as in (89a-b), respectively. Since the event in (87a-b) is that of Transition, I assume the presence of a null Res element in the structures to represent the BECOME event involved in such events. For simplicity of notation, I represent the two elements of the verb *řākirdin* ‘to run’ under the node Proc, but the non-verbal element *řā* moves to Spec-ProcP to incorporate into the subject clitic *-yān* ‘they’, which originates in Spec-ResP.

[113] I do not apply the test of measure phrase meaning ‘for a while’ in Kurdish because it leads to awkwardness in meaning.

(89) a.


ProcP
Rel$_{PATH}$P
ProcP
řā-yān
Proc'
Proc'
kird…<řā>
'did' 'away'
ResP
<-*yān*>
3PL
Res'
Res
Ø
Rel$_{PATH}$P
Rel$_{PATH}$
bo 'to'
Rel$_{PLACE}$P
Rel$_{PLACE}$
Ø
AxPartP
AxPart
nāw
'inside'
KP
K
Ø
DP
zhūraka
'the room'



As can be seen in (89a), I assume that the whole PP moves from its position to the right of the verb to Spec-ProcP since it appears to the left side of the verb. Under this analysis, its movement to Spec-ProcP, rather than XP, means it is a V complement. In contrast, in (89b), I do not assume movement of the PP because it is headed by the suffixal P element *-a* ‘to’.

In sum, in Kurdish, combinations such as [Proc] Vs and Rel_{PATH}Ps usually suggest a Process event. However, a resultative Transition event can be expressed with [Proc] Vs when the PP involves a bounded GoalRelP headed by Ps such as *bo* or *-a* ‘to’ and an AxPart is phonologically realised. In such cases, it is the PP which determines the type of the event, whether Process or resultative Transition event with [Proc] Vs. Consequently, its presence has an effect on the semantic and syntactic structure of the event.

5.6.3 *[Proc, Res] Vs + spatial PPs*

In Kurdish the occurrence of [Proc, Res] Vs and Rel_{PLACE}Ps headed by Ps such as *lasar* 'above', *lazher* 'below', *lanāw* 'inside' is not very productive. Some verbs do not occur with a Rel_{PLACE} unless a Rel_{PATH} is used such as *chūn* 'to go' (see section 4.6). Others can occur with Rel_{PLACE}Ps with the PP denoting a locative reading only, such as *kawtin* 'to fall'. Still others can occur with Rel_{PLACE}Ps with the PP defining the final location of a Figure in a motion event, such as *dānān* 'to put' and *dābazīn* 'to descend'. See the examples below:

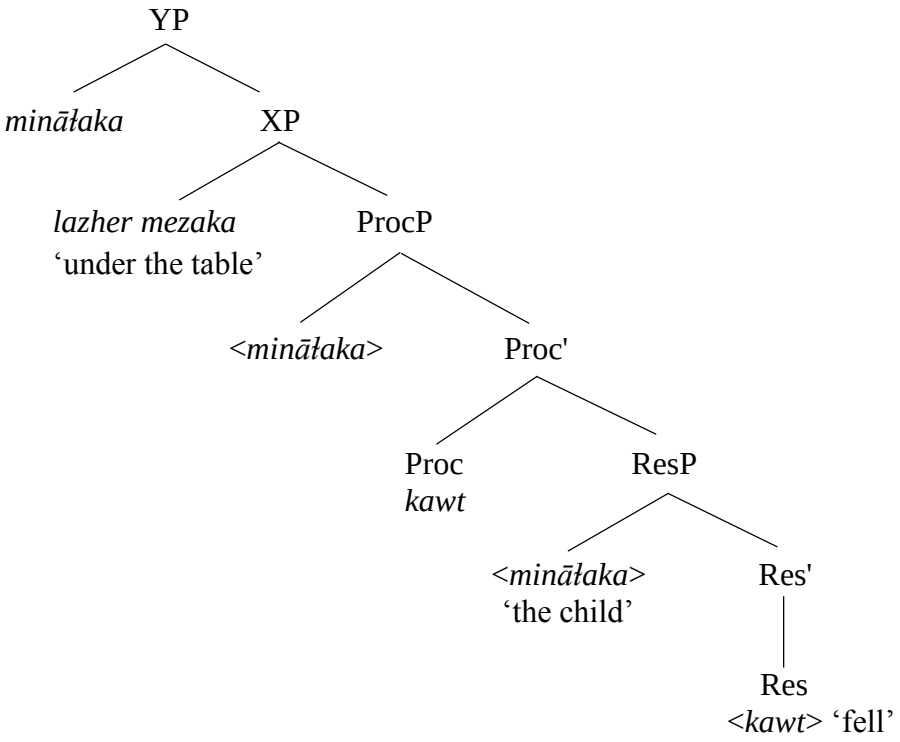
(90) a. mināł-aka lazher mez-aka kawt
child-DEF below table-DEF fall.PST.3SG
'The child fell below the table.'

b. nām-aka-m lasar mez-aka dānā
letter-DEF-1SG above table-DEF put.PST.1SG
'I put the letter on the table.'

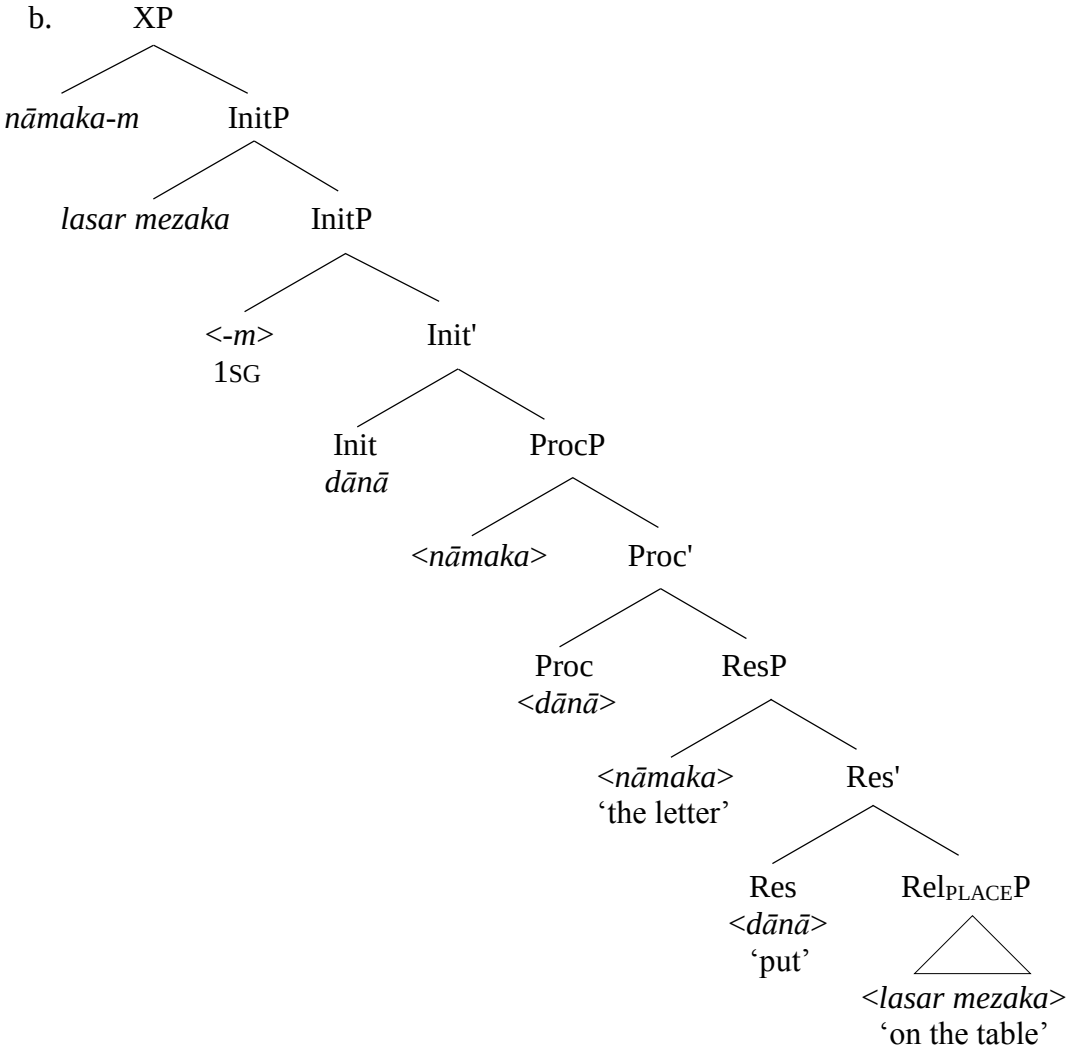
In (90a), the Figure 'the child' fell while being in a position vertically under the table. The PP *lazher mezaka* 'below the table' does not suggest a final location of the Figure 'the child' although it is used with the verb *kawt* which is +Res. In (90b), the verb *dānān* 'to put' is tagged with a Res feature and its occurrence with the PP *lasar mezaka* 'on the table' suggests that the Figure 'the letter' ends up in that location. The difference in interpretation between the PPs in (90a) and (90b) has a syntactic explanation. I claim that although in both examples, the PPs precede the verb, they have different syntactic functions. In (90a) the PP is an adjunct because it defines the location of the falling of the child. Thus it modifies the whole event. In contrast, in (90b) the PP is a complement since it defines a final location of a motion event.

Based on these interpretations, the syntactic structures I propose for the examples in (90a-b) are as in (91a-b), respectively.

(91) a.


YP
mināłaka
XP
lazher mezaka
‘under the table’
ProcP
<mināłaka>
Proc'
Proc
kawt
ResP
<mināłaka>
‘the child’
Res'
Res
<kawt> ‘fell’

b.


XP
nāmaka-m
InitP
lasar mezaka
InitP
<-m>
1SG
Init'
Init
dānā
ProcP
<nāmaka>
Proc'
Proc
<dānā>
ResP
<nāmaka>
‘the letter’
Res'
Res
<dānā>
‘put’
RelPLACEP
<lasar mezaka>
‘on the table’

In (91a), since the verb *kawt* ‘fell’ lacks an initiation or cause effect, I do not assume an InitP in the structure. A person does not intentionally initiate a falling action; hence people do not normally fall unless something or someone else causes this to happen. The verb first lexicalises the Res node and then moves and remerges with the Proc node since it is a [Proc, Res] verb. The DP *mināłaka* ‘the child’ is the subject of the sentence and is the argument that undergoes and holds the falling action. Therefore, it lexicalises both Spec-ResP and Spec-ProcP. It then moves up to Spec-YP because as it stands in example (90a), it is higher than the PP. We may assume this YP is TP or CP. Finally, since the PP *lazher mezaka* ‘under the table’ in (90a) appears to be an adjunct, I assume it adjoins to XP. I leave the determination of these projections for future research. Their nature does not affect the analysis assumed in this thesis.

In (91b), I present the verb *dānā* ‘put’ with the three subevental elements [Init, Proc, Res] since one can initiate the action of putting an entity in a specific location. The INITIATOR of this action is represented by the subject clitic *-m* ‘I’, hence I assume it originates at Spec-InitP. The UNDERGOER and RESULTEE of the event is represented by the DP *nāmaka* ‘the letter’. In the structure in (91b), I assume the DP *nāmaka* ‘the letter’ merges at Spec-ResP, remerges at Spec-ProcP and then moves up to (remerge at) Spec-XP to host the subject clitic *-m*, which first moves there to satisfy specific syntactic requirements such as case. As I mentioned in chapter 4, within my analysis of Kurdish motion VPs, the appearance of both the UNDERGOER and RESULTEE with the INITIATOR under one terminal node does not have any semantic effects. It is what the morphology of the language requires. Since in (90b) the PP *lasar mezaka* ‘on the table’ appears as the complement of the verb, I assume it undergoes a movement to a Spec position within the verbal domain, namely Spec-InitP.

Finally, in Kurdish, [Proc, Res] verbs are common with Rel_{PATH}Ps, especially bounded GoalRelPs headed by *bo/-a* ‘to’, yet not RouteRelPs headed by e.g. *badrezhāyī* ‘along’ and *badawrī* ‘around’. Some examples of such combinations are given in (92) (examples (92c) and (92d) are repeated from (43a) and (48b) in chapter 3, respectively).

(92) a. chū-n-a māł-ī ’ema
go.PST-3PL.to house-EZ our
‘They went to our house.’

b. top-aka kawt-a zher pird-aka
ball-DEF fall.PST.3SG-to below bridge-DEF
'The ball fell under the bridge.'

c. la qutābkhāna gařā-n-awa (or: gařānawa la qutābkhāna)
in school come.PST-3PL-back
'They returned from school.'

d. ba bākh-aka-dā tepař-īn
by park-DEF-PLACE pass.PST-1PL
'We went across the park.'

The same type of analysis as sketched in section 5.5 for English can be given to these data. The examples represent Transition events, which is expressed lexically, because the verbs used are of the [Proc, Res] type. As to the PP, it is a culmination in case of (92a,b), but a modifier of the motion event in case of (92c and d).

5.7 Arabic

In this section I look at Arabic data in an attempt to show the ways the events of Process and Transition are expressed through constructions made up of motion VPs and spatial PPs in this language. It will be shown that Arabic data provides support to what I have proposed in the analysis of Transition events in English and Kurdish. For example, Process events can be expressed by [Proc] Vs and different spatial PPs, where the PPs modify the whole motion event. Transition events can be expressed lexically by [Proc, Res] Vs or syntactically by [Proc] Vs and PPs which include a meaning element 'to' and an overt AxPart. For such combinations I propose the presence of a null Res element to represent the BECOME event constructed by the PP functioning as a culmination.

5.7.1 *Process events*

In Arabic, combinations of [Proc] Vs and Rel_{PLACE}Ps express a Process event in almost all cases. Examples of such constructions are given in (93).

(93) a. rakaḍtu fī as-sirdāb al-muẓlim
run.PST.1SG in DEF-cellar DEF-DĀrk
'I ran in the dark cellar.' (arabiCorpus, Thawra)

b. sirnā ʻalā muḥādhāt shaṭ ʾum nakhlah
walk.PST.1PL on align shatt Um-nakhla
'We walked beside shatt Um-nakhla.' (arabiCorpus, Hayat97)

In (93a), the running activity took place in the dark cellar, and in (93b) the walking activity took place by the side of a shatt. As to the association of the PP with the verb, it is an adjunct according to the test of word order involving insertion of adverbial material.[114] The examples in (94) illustrate this.

(94) a. rakaḍtu fī as-sirdāb bi surʻah
run.PST.1SG in DEF-cellar in speed
'I ran in the cellar quickly.'

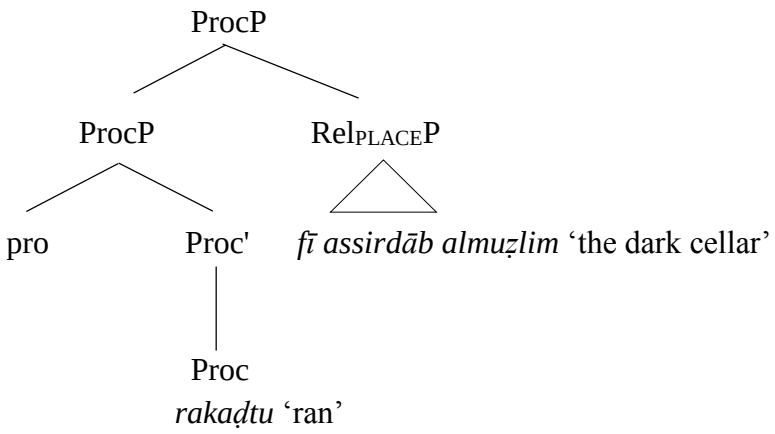
b. rakaḍtu bi surʻah fī as-sirdāb
run.PST.1SG in speed in DEF-cellar
'I ran quickly in the cellar.'

Switching the order of the $Rel_{PLACE}P$ *fī assirdāb* 'in the cellar' and the PP adverbial *bi surʻah* 'quickly' preserves the grammaticality in both (94a) and (94b). This means the $Rel_{PLACE}P$ is an adjunct. Accordingly, the syntactic representation of (93a) looks like (95).

[114] In Arabic, the phenomenon of *do so* substitution is not found. For example, translating *do so* leads to a very unnatural Arabic, hence the '#' in (i):

(i) #rakaḍtu fī as-sirdāb wa hiya faʻalat kadhalika fi al-ḥadīqah
run.PST.1SG in DEF-cellar and she do.PST.F3SG so in DEF-house
'I ran in the cellar and she did so in the garden.'

(95)



In Arabic, Process events can also be expressed by combinations made up of [Proc] Vs and Rel$_{PATH}$Ps headed by e.g. *’ilā* ‘to’, *ḥatā* ‘until/up to’ and *naḥwa* ‘towards’. Illustrative examples are given in (96):

(96) a. sirnā ’ilā al-ḥadīqah
walk.PST.1PL to DEF-garden
‘We walked to the garden.’

b. ṭirnā ḥatā at-tal
fly.PST.1PL up to DEF-hill
‘We flew up to the hill.’

c. rakaḍnā naḥwa al-burj
run.PST.1PL towards DEF-tower
‘We ran towards the tower.’

In these examples, the PPs define an end point which is telic in case of (96a-b) and atelic in case of (96c). To determine the PP position with reference to the verb in these examples, the only test that can be applied is word order, e.g. the occurrence of Rel$_{PLACE}$Ps and Rel$_{PATH}$Ps. Examples (97a-b) show that PPs headed by *’ilā* ‘to’ are attached at the internal level of the verb.

(97) a. sirnā ’ilā ḥadīqat az-zuhūr fī al-qaryah
walk.PST.1PL to garden DEF-roses in DEF-village
‘We walked to the garden of roses in the village.’

b. *sirnā fī al-qaryah ’ilā ḥadīqat az-zuhūr
walk.PST.1PL in DEF-village to garden DEF-roses
‘We walked in the village to the garden of roses.’

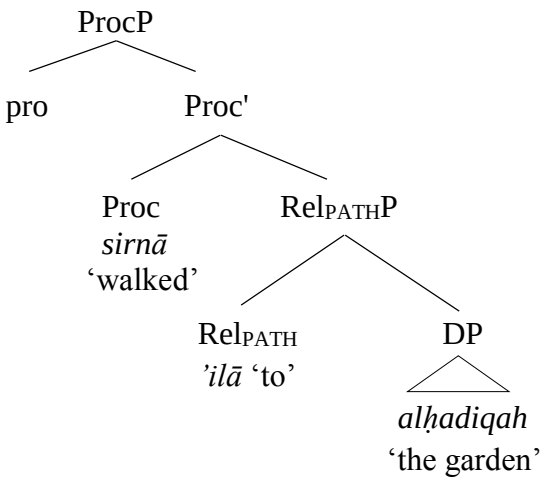
As to *ḥatā*-phrases and *naḥwa*-phrases, they do not allow switching with another PP either, as shown by the ungrammaticality of (98b) and (99b). Based on that, *ḥatā*-phrases and *naḥwa*-phrases, on a par with *'ilā*-phrases, are recognised at the internal level of the verb.

(98) a. ṭirnā ḥatā at-tal fī Beirūt
fly.PST.1PL up to DEF-hill in Beirut
'We flew until the hill in Beirut.'
b. *ṭirnā fī Beirūt ḥatā at-tal
fly.PST.1PL in Beirut up to DEF-hill
'*We flew in Beirut until the hill.'

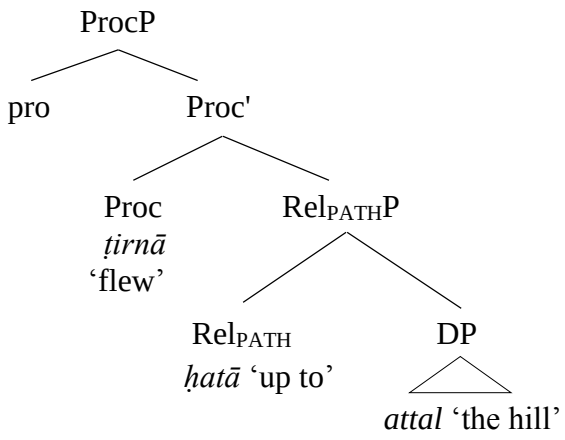
(99) a. rakaḍnā naḥwa al-burj fī Erbil
run.PST.1PL towards DEF-tower in Erbil
'We ran towards the tower in Erbil.'
b. *rakaḍnā fi Erbil naḥwa al-burj
run.PST.1PL in Erbil towards DEF-tower
'*We ran in Erbil towards the tower.'

Based on the discussion of the PP position in (97)-(99), the syntactic structures I propose for the examples in (96a-c) are as in (100a-c), respectively.

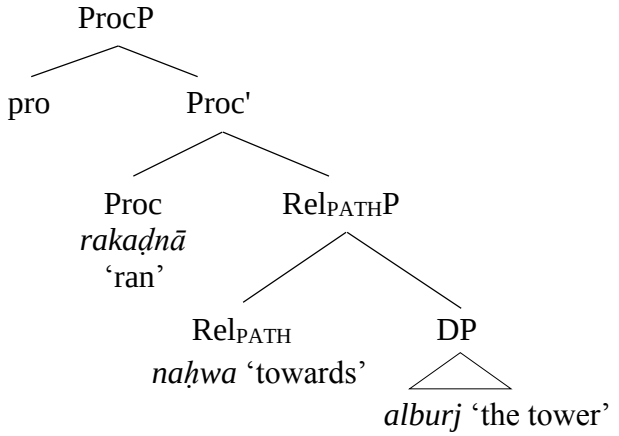
(100) a.



b.



c.



Finally, a search in the arabiCorpus shows that *khilāl* 'through', *'abra* 'across' and *ḥawla* 'around' are used with [Proc] verbs as well. In these examples, the PPs do not define an end point. Rather they define the trajectory followed by the Figure during the motion events described by the verbal predicate. Syntactically, they modify the whole motion event. Illustrative examples are given in (101):[115]

(101) a. tasīru khilāl an-nukhā' ash-shawkī
walk.PRS.3SG through DEF-cord DEF-spinal
'It goes through the spinal cord.' (arabiCorpus, Ghad01)

b. yarkuḍu 'abra aṣ-ṣaḥarī
run.PRS.M3SG across DEF-deserts
'He runs across the deserts.' (arabiCorpus, Hayat97)

c. rakaḍa ḥawla beit-ih
run.PST.M3SG around house-POSS.M3SG
'He ran around his house.' (arabiCorpus, Hayat97)

[115] In IA, the meanings denoted by *khilāl* and *'abra* are usually expressed by the prepositions *bi-* 'at/in' and *min* 'from' or through other expressions such as verbs.

5.7.2 *Transition events*

In all the above example sentences of [Proc] Vs and spatial PPs, the type of event expressed is that of Process mainly because the verb denotes an activity and the PPs do not suggest a culmination that can give rise to a resultative construction. However, similar to Kurdish the presence of a lexicalised AxPart in a bounded GoalRelP headed by a P such as *'ila* 'to' can suggest a resultative Transition event with [Proc] Vs. Illustrative examples are:

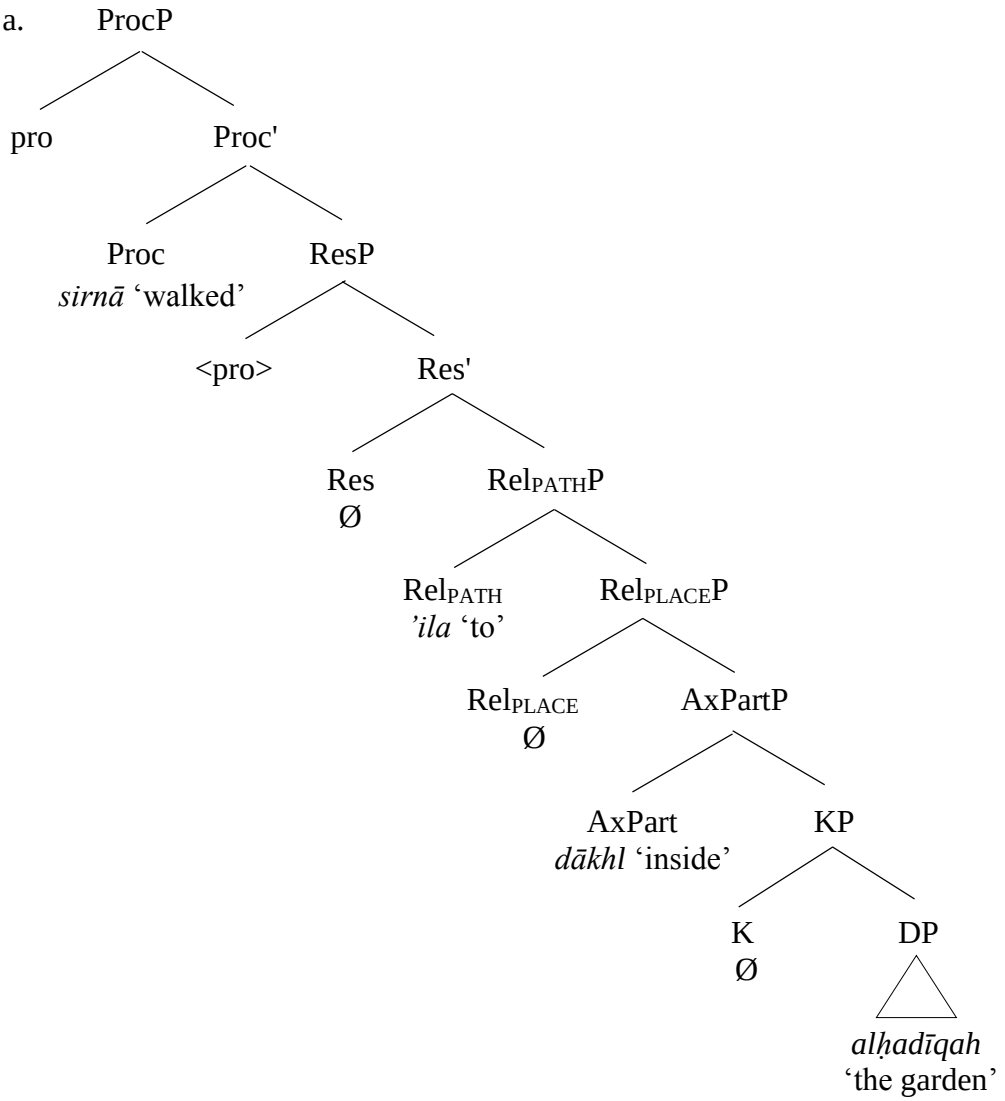
(102) a. sirnā 'ila dākhl al-ḥadīqah
walk.PST.1PL to inside DEF-garden
'We walked into the garden.'
b. haraʿa 'ila 'aʿlā al-haram
ran.PST. M3SG to up DEF-pyramid
'He ran onto the top of the pyramid.'

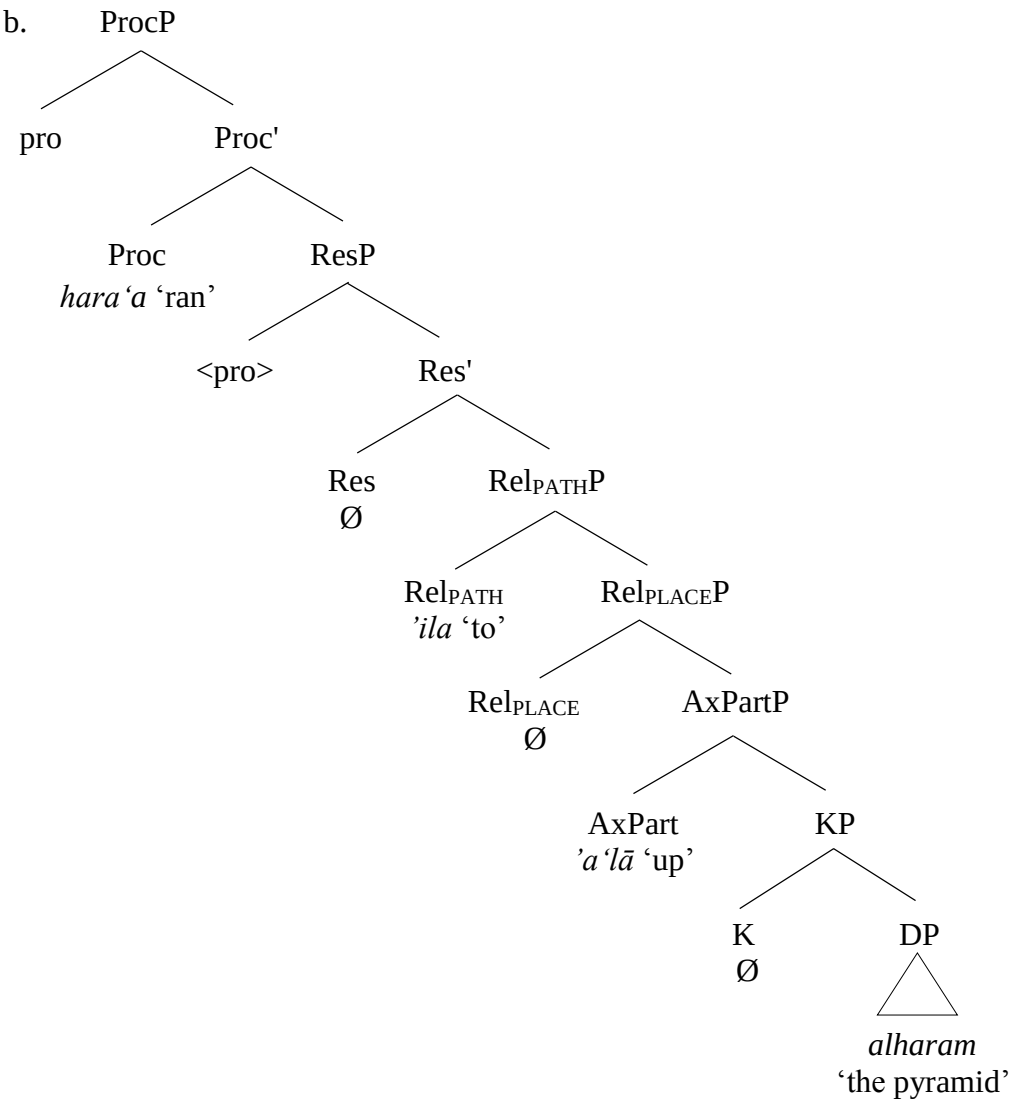
In both of these examples, a resultative Transition event (be it Accomplishment or Achievement) is expressed. In (102a), the Figure – represented as an invisible first person plural *pro* – walked and ended up inside the garden. In (102b), the Figure ran and ended up on top of the pyramid. Similar to the Kurdish data discussed in section 5.6.2 (in particular see the discussion immediately below examples (87a-b)), I propose a null Res element in the structure which is licensed by the BECOME event involved in resultative Transition events and constructed by the secondary predicate which provides the location at which the culmination takes place. The possibility of a resultative reading in (102) in comparison to (96a) can be tested by the following examples.

(103) a. sirnā 'ilā al-ḥadīqah wa-lakn-nā lam nadkhul-hā
walk.PST.1PL to DEF-garden and-but-PC.1PL not enter.PST-3SG
'We walked to the garden but we did not enter it.'
b. *sirnā 'ila dākhl al-ḥadīqah wa-lakn-nā
walk.PST.1PL to inside DEF-garden and-but-PC.1PL
lam nadkhul-hā
not enter.PST-3SG
'*We walked into the garden but we did not enter it.'

The grammaticality of (103a) is explained by the fact that a person can walk to a place without entering it. This is true because the PP does not involve an overt AxPart. In contrast, in (103b) the PP has the AxPart element *dākhl* ‘inside’. Hence, the ungrammaticality of (103b); a person cannot walk to a place without entering it. The syntactic structures I propose for (102a-b) are as in (104a-b), respectively.

(104) a.





Similar to English and Kurdish, a resultative Transition event in Arabic can be expressed by [Proc-Res] Vs combined with Rel_{PLACE}Ps, with the latter defining the culmination location of the event. Examples of such combinations are given in (105).

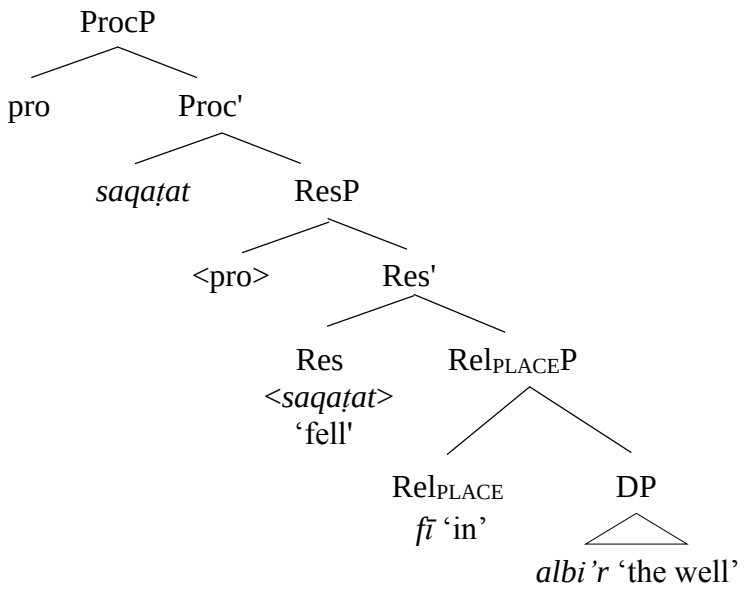
(105) a. saqaṭat fī al-bi’r
fall.PST.F3SG in DEF-well
‘She fell in the well.’

b. waḍa‘tu al-kitaba ‘alā al-miṇḍadah
put.PST.1SG DEF-book on DEF-table
‘I put the book on the table.’

c. dakhaltu fī al-dūlāb
enter.PST.1SG in DEF-cupboard
‘I entered the cupboard.’ (arabiCorpus, Tajdid02)

In all these examples the PP defines the final location of the Figure in a motion event. In (105a) the Figure ends up in the well after falling; in (105b) the Figure ends up on the table; and in (105c) the Figure becomes in the cupboard as a result of entering it. The syntactic representation of the example in (105a) is as in (106).

(106)



In Arabic, [Proc, Res] Vs can also occur with Rel_{PATH}Ps headed by Goal Relators such as *'ilā* 'to', where the PP suggests the culmination of the BECOME event realised as part of the verb. More precisely, it defines the final point of the Figure in the motion event. Illustrative examples are:

(107) a. dhahabnā 'ilā al-jami'
go.PST.1PL to DEF-mosque
'We went to the mosque.'

b. dakhalnā 'ilā al-maḥaṭah
enter.PST.1PL to DEF-station
'We entered into the station.'

In sum, constructions made up of [Proc] Vs and Rel_{PLACE}Ps in Arabic suggest a Process event where the PP defines the location of the activities described by the verbal predicates. Transition events can be expressed by [Proc, Res] Vs and combinations of [Proc] Vs and Rel_{PATH}Ps that include Ps such as *'ilā* 'to' and a lexicalised AxPart such

as *dākhl* ‘inside’. In such cases I assume a null Res element to represent the BECOME event involved in resultative Transition events.

5.8 Summary and Conclusion

In this chapter I have examined the occurrence of the two types of motion verbs [Proc] and [Proc, Res] Vs with the two main types of spatial PPs (Rel_{PLACE}Ps and Rel_{PATH}Ps). I have looked at the type of events expressed by such combinations and the syntactic structure underlying them. The combination of a [Proc] V and a Rel_{PLACE}P mostly suggests a Process event with the Rel_{PLACE}P modifying the whole event and functioning as an adjunct. This is also true for Rel_{PLACE}Ps headed by the ambiguous Ps such as English *under* which can have a locative and route-directional reading with [Proc] Vs. However, I have shown that when [Proc] Vs are used with Rel_{PATH}Ps headed by e.g. *into* and *onto*, a resultative Transition event can be expressed. The availability of a resultative meaning is due to the lexical semantics of these Ps. They involve the elements *in* and *on*, which suggest that the Figure in a motion event ends up within the spatial domain of the Ground. Since such events involve a BECOME event, I proposed a null Res element in the structures. This has been tested through insertion of the measure phrase *for a while*, which supports the expression of a resultative Transition event.

In Kurdish and Arabic, the presence of a lexicalised AxPart and a bounded GoalRel meaning ‘to’ can also motivate a resultative Transition event with [Proc] Vs. Since such events involve a BECOME event, I proposed a null Res in the syntactic structure. Through such cases, I have shown that the type of PP plays a crucial role in determining the type of event with [Proc] Vs, with insertion of the PP changing the semantic and syntactic structure of the event. If the PP suggests a culmination element, it gives rise to a resultative Transition event when it occurs with a non [Proc, Res] verb.

The occurrence of [Proc, Res] Vs with Rel_{PLACE}Ps is a representative combination of a BECOME event and a culmination. The PP mostly defines the culmination, e.g. *go in X, fall on X,* etc. An exception in English is an *under*-phrase, which under the locative and route-directional reading does not function as a culmination. The same is true with GoalRelPs such as *to*- and *up to*-phrases. Other Rel_{PATH}Ps such as *towards, from, away from, through* and *along* and their equivalents in Kurdish and Arabic do not suggest a

culmination. Their occurrence with [Proc] Vs and [Proc, Res] Vs involves modification of the whole motion event.

Chapter 6. Conclusion

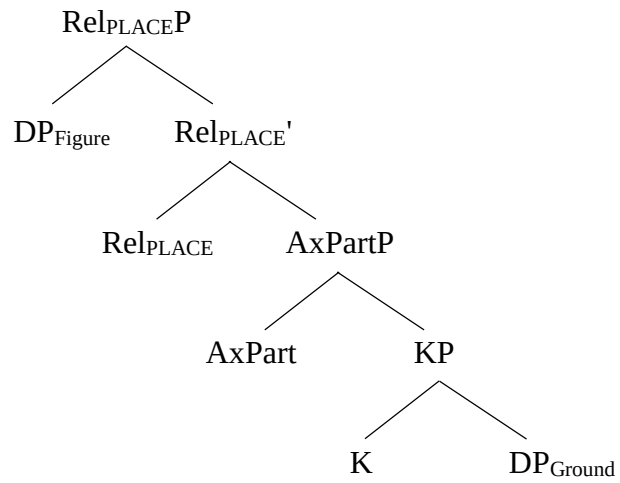
In this chapter, I summarise the main ideas and proposals presented in the thesis. After this, I highlight some issues that can be considered in future research.

6.1 Summary and Concluding Remarks

The main focus of this thesis has been examining the syntax and semantics of motion events that involve motion VPs and spatial PPs. In order to deal with such combinations, it was necessary to examine the internal syntax and semantics of these two domains separately. Therefore, chapter 2 and 3 have been devoted to the internal syntax and semantics of spatial PPs, and chapter 4 involved discussion of motion verbs. The ideas and proposals presented in these chapters have led to a systematic analysis of the combination of motion VPs and spatial PPs discussed in chapter 5. Data from English, Kurdish and Arabic have been the main materials used to validate these proposals. Throughout the chapters, I showed several cases of interaction and mapping between syntax and semantics, which was led by insights from the theoretical framework of cartography.

In chapter 2, I examined elements such as English *in, on, at, near, inside, upon, next to, below, beside, behind, beyond, between, above, among, in front of* and *on top of,* and their equivalents in Kurdish and Arabic. Based on their semantic functions I have proposed the term Place Relator to refer to them. Semantically, such adpositions relate a Figure to a Space, which is defined with reference to a Ground. Syntactically, I adapted Svenonius' (2010) model of P projection. In the model, I proposed that the $Rel_{PLACE}P$ is decomposed into Rel_{PLACE}, AxPart and K. This is presented in (1), repeated from (9) in chapter 2.

(1)

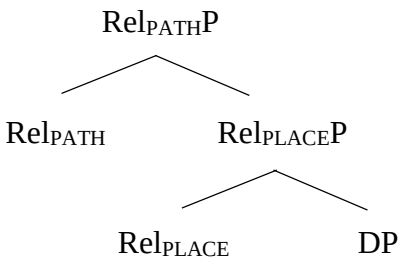


Each of these functional heads is motivated on the basis of a semantic function and a morphological realisation across English, Kurdish and Arabic. Data from Kurdish has shown lexical/morphological representations of the functional heads Rel$_{PLACE}$, AxPart and K, such as *la barānbar-i X* 'in front of X'. For the bound morphemes *-awa, -dā* and *-řā* in Kurdish, I proposed that they lexicalise the PLACE element based on proposals in e.g. Terzi (2010), Cinque (2010) and Romeu (2014). As to Arabic, the relevant spatial elements lexicalise two functional heads: Rel$_{PLACE}$ and AxPart. The Rel$_{PLACE}$ head is lexicalised by elements that are true prepositions, such as *fī* 'in' and *'alā* 'on', and some elements within the semi-prepositional class, such as *fawq* 'above' and *taḥt* 'below'. The AxPart head is lexicalised by specific semi-prepositions only, such as *wasaṭ* 'middle', *'a'lā* 'up', *'asfal* 'down' and *'amām* 'front'. Contrary to English and Kurdish, which have lexical representation of K (e.g. *of* and *-i* 'of'), the K functional head lacks a lexical representation in Arabic. This is because the possessive relationship that holds between AxPart and the DP Ground in Arabic is determined under the construct state.

Chapter 3 has been concerned with the internal syntax and semantics of elements such as English *to/from/through*, which are usually referred to as Path in the literature (e.g. Jackendoff 1983; Svenonius 2010; Pantcheva 2011). I argued that these elements are Relators too, but they function in a path domain. They relate the Figure to a specific point of a path. For example, *to/up to/towards* relate a Figure to a Ground which forms the end point of a path, *from/away from/out of* relate a Figure to a Ground which forms the starting point of a path and *through/past/along* relate a Figure to a Ground which forms some intermediate point(s) of a path. Syntactically, I represented them as Rel$_{PATH}$ in the tree structure. Thus under my proposals of Relators in the place and path

domains, the minimum structure of a complex PP looks like (2), repeated from (35) in chapter 3.

(2)



I also adopted Pantcheva's (2011) typology of path adpositions and examined the types of such Relators across English, Kurdish and Arabic. However, I have taken the three main types of path identified by her and others (Goal, Source and Route) to be GoalRel, SourceRel and RouteRel types of Relators. For example, Kurdish has five Rel$_{PATH}$ types; these are Cofinal, Terminative, Approximative, Coinitial and RouteRel, while data from MSA showed six types: Cofinal, Terminative, Approximative, Coinitial, Recessive and RouteRel, and data from IA showed four only: Cofinal, Terminative, Coinitial and RouteRel.

Chapter 4 dealt with the syntax and semantics of event structure in general and motion verbs in particular. Building on insights from the semantics of event structure in Dowty (1979) and Rothstein (2004) and using the first-phase syntax of verbs in Ramchand (2008), I proposed a semantic-syntactic analysis of event structure. I showed that the semantic components of an event can be represented syntactically in a phrase structure. In particular, I argued that the BECOME event involved in Transition events is parallel to ResP. Moreover, I argued that the ResP cannot be lexicalised by DPs, APs or PPs as assumed in work by Ramchand (2008) and Romeu (2012). I attributed the inability of these elements to be the lexical representation of Res to the fact that they do not suggest a BECOME event. Instead, they can represent the culmination which forms the upper bound of a BECOME event.

In chapter 4, I also looked closely at two classes of motion verbs: [Proc] Vs and [Proc, Res] Vs in English, Kurdish and Arabic. These two classes have been determined on the basis of two diagnostics: the occurrence of these verbs with Rel$_{PLACE}$Ps and the type of DP complement allowed after them (whether PATH or Ground). For example, [Proc] Vs allow PATH DP complements, while [Proc, Res] Vs allow DP Ground

complements. Ramchand's (2008) VP decomposition was also used to examine the typology and internal syntax of motion verbs in Kurdish and Arabic. Kurdish data presented a challenge to the model adopted, due to the complex morphological make-up of its verbs. For example, Kurdish has compound and complex verbs that involve a verbal element and a non-verbal element. In general, Ramchand's (2008) VP decomposition model provides a well-structured analysis that helps account for the different properties of motion verbs in these languages.

In chapter 5, I examined the occurrence of [Proc] Vs and [Proc, Res] Vs with different spatial PPs. I have shown that the type of event expressed by such combinations can be determined by the verb or the adposition. For example, combinations made up of [Proc] Vs and Rel_{PLACE}Ps such as English *in/on/under*-phrases, or Rel_{PATH}Ps headed by e.g. *to/up to/towards/from/away from/through/around* express a Process event only. However, combinations made up of [Proc] Vs and Rel_{PATH}Ps headed by English *into* and *onto* suggest a resultative Transition event. I have shown that since such PPs specify the end point of a path where the Figure ends up within the spatial domain of the Ground, a resultative construction is expressed. The application of the measure phrase *for a while* provides evidence in support of this interpretation. To account for such cases, I proposed the presence of a null Res element which is licensed by the BECOME event. Following Rothstein (2004) this BECOME event is constructed by the PP (the secondary predicate) which provides the location at which the event culminates. In Kurdish and Arabic, combinations made up of [Proc] Vs and Rel_{PATH}Ps headed by 'to' and a lexicalised AxPart can express a resultative Transition event as well. As to the class of [Proc, Res] Vs, such verbs always give rise to a Transition event, regardless of the type of spatial PP used. However, some PPs such as Rel_{PLACE}Ps or bounded GoalRelPs can function as the culmination of the BECOME event recognised as part of the verb. In contrast, PPs headed by SourceRel and RouteRel elements modify the whole motion event by specifying the starting point or the trajectory of the Figure during the motion event.

6.2 Future Research

The study conducted in this thesis has covered some aspects of the syntax and semantics of spatial PPs and motion events. However, there are several issues which I left out of the study. In this section I present some of them. First, for elements such as English

in/on/above and *to/from/through* I proposed that they are Relators in a place and path domain, respectively. It will be interesting to investigate whether and how this idea of Relator can be extended to non-spatial (temporal and metaphorical) uses of spatial adpositions. For example, in a spatial relationship, the idea that adpositions relate Figures to Grounds works well, and extending it to non-spatial relationships may work well as well and it may reveal more interesting properties of adpositions in general.

Second, with regard to the typology of motion verbs, I focused on two classes only, [Proc] Vs and [Proc, Res] Vs. However, the Init event in Ramchand (2008) may also play a role in determining the type of spatial PP allowed as is the case with the Bulgarian language (see Pantcheva 2007). Another interesting area that is worth investigating is to extend the syntactic-semantic analysis of motion events to adjectival resultatives. In particular, the idea that ResP is parallel to the BECOME event and that its culmination can be in the form of a specific XP, such as *into*-phrases in English.

Finally, the ideas and proposals made in this thesis have been based on data from English, Kurdish and Arabic. It would be interesting to extend these ideas and proposals to other languages to validate the results, such as other Germanic, Indo-Iranian and Semitic languages as well as Romance languages, especially those which have other forms of adpositions such as case, postpositions and circumpositions.

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